DIGITAL TECHNOLOGIES AND FINANCIAL INCLUSION AMONGST SMALL AND MEDIUM-SIZED ENTERPRISES IN NAIROBI COUNTY, KENYA

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OCTOBER, 2025

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.

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ABSTRACT

The main focus of this study was to establish the effects of digital technologies on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya. The study was specifically centered on establishing the effect of online banking services, digital lending platforms, agency banking platforms and mobile money services on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya. The theories anchoring the study comprised of Diffusion Innovation Theory, Credit Rationing Theory, Financial Intermediation Theory and Theory of Financial Innovation. A descriptive research design was employed and the target population comprised of 21100 SMEs operating in Nairobi City County Central Business District. Fishers sampling formula was utilized in deriving a sample size of 96 SMEs. Stratified sampling technique was used in distributing the sample size across the SMEs' categories. The units of observation comprised of owners or managers of the businesses. The instrument for collecting data were closed-ended questionnaires structured in a five-point Likert scale. The gathered data was analysed using both descriptive and inferential statistics. The mean and standard deviation were examples of descriptive statistics, whereas regression analysis and correlation were examples of inferential statistics. The results of the analysis were presented using tables and figures. The study established that digital technologies comprising of online banking services, digital lending platforms, agency banking platforms and mobile money services positively and significantly correlates with financial inclusion amongst SMEs. Consequently, the study established a positive and significant effect of digital technologies (Online Banking Services, Digital Lending Platforms and Mobile Money Services) on financial inclusion as shown by beta values of 0.285, 0.465 and 0.501and significant values of 0.024, 0.001 and 0.003 respectively. The results implied that increasing any of the aspects of the digital technologies with one unit would result to an increase in the levels of financial in SMEs with respective beta values. Agency Banking Platforms however had a positive but insignificant effect on financial inclusion. The study concluded that online banking services, digital lending platforms, and mobile money services bears a positive effect on financial inclusion amongst SMEs. From the findings, the study recommended the SMEs to leverage on the digital technologies in their business operations since the technologies contributes significantly to financial inclusion and business growth.

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DEDICATION

I dedicate this project to my family for their unwavering support.

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ACRONYMNS AND ABRREVIATIONS

CBD	-	Central Business District
CBK	-	Central Bank of Kenya
COMESA	-	Common Market for Eastern and Southern Africa
DF	-	Digital Finance
FI	-	Financial Inclusion
MM	-	Mobile Money
NACOSTI	-	National Commission for Science, Technology, and Innovation
SMEs	-	Small and medium-sized enterprises
SPSS	-	Statistical Package for Social Scientists

OPERATIONAL DEFINITIONS OF TERMS

Agency Banking Platforms - Digital financial services that allow banks to extend their services to SMEs through third-party agents via digital tools like point-of-sale devices and mobile phones (Lotto, 2016).

Digital Lending Platforms - Technology-driven systems and applications that enable SMEs to access credit online-based platforms, without the need for traditional banking infrastructure (Wathome, 2020).

Digital Technologies - Electronic tools and resources that generate, store, or process data and enable the transformation of information into digital formats, making communication, data sharing, and service delivery more efficient and accessible (Ciarli et al. 2021).

Financial Inclusion - Financial services and products' availability and accessibility to people and enterprises, especially those who have historically been shut out of formal financial systems (COMESA, 2021).

Mobile Money Services - Platforms for digital finance that let people and companies pay, receive, and hold money on their phones without requiring a traditional bank account (Nzyoka, 2020).

Online Banking Services - The use of internet-based platforms provided by financial institutions that allow SMEs to conduct financial transactions and access banking services remotely via computers or mobile devices (Melubo & Musau, 2020).

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter outlines the background of the study. The chapter discusses the concept of digital technologies from the global, regional and local perspective. The chapter further presents a discussion of the concept of financial inclusion and the operation statuses in SMEs. The statement of the problem is also presented which is followed by an outline of both general and specific objectives. Research questions, significance of the sand scope are presented in the chapter.

1.1 Background of the Study

The rapidly evolving and competitive environment in which small and medium-sized enterprises (SMEs) operate is characterized by fast-paced technological change, limited access to formal finance, and dynamic customer needs (Bett & Anene, 2023). SMEs play a crucial role in Kenya's socioeconomic development through job creation, income generation, and poverty reduction. However, many continue to face operational challenges, particularly in accessing affordable and reliable financial services necessary for growth and sustainability. According to Falaiye, Adijat and Feranmi (2024), digital technologies have become key enablers of financial inclusion by allowing SMEs to access credit, manage transactions efficiently, and enhance overall business performance. Integrating digital tools into SME operations promotes financial transparency, scalability, and competitiveness.

Globally, the adoption of digital technologies has proven instrumental in bridging financial access gaps among SMEs. In many developing economies, mobile payment systems, digital identity platforms, and online lending services have facilitated easier access to finance, improved

transaction efficiency, and expanded market participation. For instance, studies from emerging economies highlight that digital payment ecosystems and online lending platforms can reduce dependence on traditional collateral-based lending and foster inclusion for small enterprises (Midha, 2023; Gomes & Silva, 2024). These global trends underline a broader lesson—that digital technologies serve as powerful equalizers in promoting SME financial inclusion, especially where conventional banking structures are weak or inaccessible.

Across Africa, countries such as Nigeria, Rwanda, and South Africa have experienced significant improvements in SME financial inclusion through mobile money, agency banking, and digital credit systems (Ezeocha, 2024; Maniriho, 2021). These innovations have simplified transactions, reduced operational costs, and expanded financial access for small enterprises in both rural and urban areas. The continental experience demonstrates that integrating digital technologies into SME operations can enhance access to credit, streamline payments, and improve financial management practices.

Kenya offers a compelling case of how digital technologies have revolutionized financial inclusion. The mobile money platforms has become a central tool for business transactions, enabling SMEs to send and receive payments, save money, and even access microloans (Osabutey & Jackson, 2024). Safaricom PLC, through its M-Pesa ecosystem, has empowered thousands of SMEs by offering merchant services, overdraft products like Fuliza, and business management tools through M-Pesa Business App. This digital infrastructure has enhanced the ability of small businesses to perform cashless transactions, track income, and access micro-financing services, thus promoting financial inclusion (Tiony, 2023).

Equity Bank Kenya, through its Equitel mobile platform and Eazzy Banking suite, has enabled SMEs to open accounts, transfer funds, access loans, and monitor transactions using

mobile phones. According to a study by Kuria et al. (2024) on equity's fintech, the innovation has significantly reduced the cost and complexity of financial services for many informal businesses.

A study by Olela (2024) on Twiga Foods established that the agri-tech firm utilizes mobile-based ordering systems and digital logistics to ensure efficient supply chain management. Through this digital platform, vendors in Nairobi can order fresh produce and make payments electronically. The digital transaction records also help SMEs establish a financial history, which is critical when applying for loans or credit from financial institutions. Twiga has partnered with fintech providers to offer vendors working capital financing based on their transaction data, thereby promoting financial inclusion through credit access tied to business performance rather than traditional assessments.

1.1.1 Digital Technologies

Digital technologies are electronic instruments, devices, systems, and resources that produce, store, or process data (Ciarli et al. 2021). They enable information to be transformed into digital formats, making communication, data sharing, and service delivery more efficient and accessible. Built on computing and telecommunications infrastructure, these technologies facilitate real-time interaction, automation, and data-driven decision-making across sectors. They have become central to socio-economic development, particularly in the financial and commercial spheres, by connecting underserved business groups with formal financial institutions. Through innovative platforms, digital technologies have enhanced SMEs' access to financial services that were previously limited by inadequate infrastructure, lack of credit history, or geographical barriers (Wanof, 2023).

One significant form of digital technology supporting financial inclusion is online banking. According to Melubo and Musau (2020), online banking involves internet-based platforms

provided by financial institutions that allow SMEs to conduct financial transactions remotely via computers or mobile devices. These platforms enable businesses to check balances, transfer funds, pay bills, and manage accounts without visiting physical branches (Ene, Abba, & Fatokun, 2019). This convenience saves time and promotes transparency and effective financial management for SMEs.

Another important innovation is digital lending platforms, which use algorithms and alternative data sources to assess creditworthiness and provide loans to SMEs. Wathome (2020) describes these platforms as technology-driven systems that allow businesses to access credit online without relying on traditional banking infrastructure. By using mobile usage, transaction histories, and social media data, digital lenders offer quick, unsecured loans to SMEs, enabling them to meet operational needs and expand their activities (Nkatha, 2022). These platforms have become crucial in extending credit to enterprises excluded from formal financial systems.

Agency banking also enhances financial inclusion by allowing third-party agents to provide banking services on behalf of established financial institutions. Agents, often based in local shops or kiosks, facilitate transactions such as deposits, withdrawals, and bill payments (Lotto, 2016). This model bridges the gap between formal banks and informal enterprises while reducing the costs of setting up physical branches. As a result, agency banking improves accessibility and helps SMEs manage cash flows more efficiently.

Mobile money services have transformed financial interactions among SMEs by enabling easy transfer, receipt, and storage of money through mobile phones. Nzyoka (2020) defines these services as digital financial systems that allow individuals and businesses to perform financial transactions via mobile devices. Mobile money has become integral to Kenya’s financial

landscape, supporting SMEs in conducting cashless transactions, paying suppliers, receiving payments, saving, and accessing credit facilities (Nyimbiri, 2021).

1.1.2 Financial Inclusion amongst Small and Medium-Sized Enterprises

The term financial inclusion describes how financial products and services are available to people and enterprises, especially those who have historically been shut out of formal financial institutions (COMESA, 2021). In the context of SMEs, financial inclusion refers to providing them with sustainable and reasonably priced access to a broad spectrum of financial services via approved financial institutions. For SMEs, financial inclusion is essential for their continued success and competitiveness in an increasingly competitive and more digital economy, in addition to being a means of survival.

SMEs are the foundation of Kenya's economy, making substantial contributions to innovation, job creation, and economic diversification. However, poor access to proper and sufficient financial services is one of their most enduring problems. In order to have access to capital to invest in cutting-edge technology to grow their businesses, control risks, and increase operational efficiency, SMEs must be financially included (Nyaga & Mutwiri, 2024).Through financial inclusion, SMEs can also build credit histories, attract investors, and participate in formal economic activities, thus enhancing their chances of long-term sustainability and contribution to economic development.

Despite its importance, SMEs continue to encounter a variety of challenges in achieving full financial inclusion. One major challenge is the stringent requirements set by formal financial institutions, such as collateral demands, high interest rates, and complex documentation processes, which most SMEs find difficult to meet. Furthermore, a lot of SMEs run informally and don't have precise books of accounts or credit histories, which makes it challenging for lenders to determine

their trustworthiness. The problem is made more difficult by the low level of knowledge about finance among SME owners, many of them are ignorant of the types of financial services that are accessible to them or do not possess the necessary expertise to make wise financial decisions. Furthermore, they may not have physical access to financial services due to infrastructure and geographic limitations (Kambi & Onyiego, 2022).

Baraza, Miroga, and Otinga (2024) pointed out that a number of initiatives have been put in place to improve financial inclusivity for SMEs in response to these issues. The emergence of digital financial services like digital wallets, mobile banking, and fintech platforms—which provide quicker loan approvals and alternative credit scoring models—is one of the criteria. Addressing the inclusion gap has also been made possible by government initiatives like loan guarantee programs and financial literacy initiatives targeted at SMEs. Additionally, collaborations between banks and internet companies are producing cutting-edge solutions like digital bookkeeping tools, e-commerce payment systems, and mobile-based invoicing that are specifically designed to meet the demands of SMEs.

1.1.3 Small and Medium-Sized Enterprises

Small and Medium-Sized Enterprises (SMEs) form the backbone of many economies worldwide, particularly in developing nations. In Kenya, SMEs are vital for economic growth, job creation, and poverty reduction (Katua, 2017). They range from small family-run businesses such as food vendors, tailor shops, and kiosks to more structured medium-sized enterprises involved in manufacturing, retail, and services. The Micro and Small Enterprises Act of 2022 defines a small business in Kenya as one that employs 10–49 people and generates between KES 500,000 and KES 5 million in annual revenue, while a medium-sized business employs 50–99 people and generates between KES 5 million and KES 800 million (Kenya Law, 2022). SMEs are

characterized by flexibility, adaptability, and their ability to meet diverse market needs, making them critical in addressing local economic challenges.

SMEs contribute significantly to employment, particularly for youth and women who often face barriers to formal jobs. They foster innovation and entrepreneurship by encouraging creativity, risk-taking, and diversification. By integrating into the supply chains of larger enterprises, SMEs enhance productivity and resilience within the broader economy. Moreover, they play an important role in income generation and the reduction of urban poverty and inequality (Alaghbari, 2022). Despite their importance, SMEs face challenges that hinder their growth and sustainability. A key issue is limited access to finance, as traditional financial institutions often perceive them as high-risk borrowers due to lack of collateral, formal documentation, or credit history (Wonglimpiyarat, 2015). Other constraints include bureaucratic regulations, high taxes, limited managerial skills, and inadequate infrastructure.

Digital technologies provide promising solutions to many of these challenges. Mobile banking and digital payment platforms have enhanced financial inclusion by allowing SMEs to transact, save, and access credit more conveniently. Fintech innovations now use mobile money transaction histories to generate digital credit profiles, improving access to loans (Hove & Dubus, 2019). Furthermore, tools such as customer relationship management systems, inventory software, and accounting applications enable SMEs to track performance and improve operational efficiency through data-driven decision-making.

1.2 Statement of Problem

Small and Medium-sized Enterprises (SMEs) play a vital role in Kenya's economy through job creation, innovation, and income generation. However, in Nairobi County, many SMEs continue to face persistent financial exclusion characterized by limited access to affordable credit,

inadequate savings and insurance options, and barriers to formal financial systems. These challenges arise from stringent collateral requirements, costly banking procedures, and low levels of financial literacy (Wonglimpiyarat, 2015), which collectively constrain their growth and weaken their contribution to socio-economic development.

Although traditional financial institutions have attempted to address these challenges, many SMEs remain underserved. The emergence of digital technologies such as mobile banking, fintech platforms, mobile money services, and digital credit scoring offers promising alternatives for bridging the financial access gap. These technologies have the potential to simplify transactions, lower service costs, and enhance access to tailored financial products (Hove & Dubus, 2019). However, the extent of their adoption by SMEs in Nairobi County and their actual effectiveness in meeting SME financial needs remain unclear due to limited empirical data, inconsistent adoption patterns, and weak research focus on SME-centered digital finance outcomes.

Existing studies reveal notable research gaps. Shen, Hueng, and Hu (2019) found that digital technologies enhanced financial inclusion in China, but their findings are contextually limited for Kenya. Iwedi (2023) examined digital banking and financial inclusion in Nigeria but focused narrowly on one aspect of digital technology, leaving a conceptual gap regarding the broader range of digital tools. In Kenya, Majau and Ragui (2017) explored technological innovations and SME performance but did not address financial inclusion, indicating a thematic gap in local scholarship.

Nairobi County provides a unique context for investigating these gaps due to its high concentration of SMEs operating in both formal and informal sectors. Yet, there is insufficient empirical evidence on how these enterprises are leveraging digital technologies to overcome

financial exclusion. This study, therefore, sought to examine the influence of digital technologies on financial inclusion among SMEs in Nairobi County, Kenya.

1.3 Objectives of the Study

1.3.1 General Objective of the Study

To establish the effect of digital technologies on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya

1.3.2 Specific Objectives of the Study

i To establish the effect of online banking services on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya

ii To find out the effect of digital lending platforms on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya

iii To examine the effect of agency banking platforms on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya

iv To find out the effect of mobile money services on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya

1.4 Research Questions

i How does online banking services affect financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya?

ii To what extent does how digital lending platforms affect financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya?

iii How does agency banking platforms affect financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya?

iv To what extent does mobile money services affect financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya?

1.5 Significance of the Study

1.5.1 Small Medium Sized Enterprises

This study holds substantial importance for SMEs in Nairobi County. By examining the role of digital technologies in promoting financial inclusion, the findings offers insights into how SMEs can leverage digital technologies to access credit, manage transactions, and streamline financial operations. Enhanced financial inclusion enables SMEs to expand their operations, improve efficiency, and boost resilience against economic shocks. The study also helps SMEs understand the barriers to digital adoption and identify practical solutions to improve their financial accessibility and sustainability.

1.5.2 Policy Makers

For policymakers, the study provides empirical evidence that can inform the formulation of inclusive and supportive regulatory frameworks intended to give SMEs greater access to digital banking services. Knowing how digital technologies affect financial inclusion helps financial regulators and government organisations create policies, incentives, and expenditures on infrastructure that are specifically tailored to the needs and difficulties experienced by SMEs in urban areas. This can help create jobs, boost the economy, and reduce poverty by creating an even more inclusive financial system.

1.5.3 Scholars and Researchers

The study adds to the body of knowledge by addressing the gap between financial inclusion and digital transformation among SMEs in developing nations. Scholars benefits from the empirical

findings, which can inform future research, theoretical development, and cross-regional comparisons. Additionally, the study may open up new avenues for interdisciplinary research between digital innovation, development economics, and entrepreneurship studies globally and regionally.

1.6 Scope of the Study

The study aims at establishing the effect of digital technologies on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya. The specific digital technologies that were focused on comprised of online banking services, digital lending platforms, agency banking platforms and mobile money services. A descriptive research design was employed where the target population comprised of SMEs operating in Nairobi County Central Business District. The units of observation comprised of owners or managers of the businesses. Structured questionnaires were used to gather data, and both descriptive and inferential statistics were used for analysis. The research was conducted in Nairobi City County from April to July of 2025.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter gives a summary of the literature review for the study, which includes a review of empirical research, the conceptual framework, and the theory that forms the theoretical basis of the investigation. The operationalisation of the research gaps and study variables is also included in this chapter. The inclusion of a literature review helps the researcher identify any gaps in the field that need to be addressed by the study.

2.2 Theoretical Review

According to Adom, Hussein and Agyem (2018), a theoretical review consists of a framework that serves as the study's direction and is based on an established theory in a subject area related to its goals. This study is primarily anchored on the Diffusion of Innovation Theory (DOI) developed by Everett M. Rogers (1962), which provides the central explanatory framework for understanding how SMEs in Nairobi County adopt digital financial technologies. The DOI Theory explains the process through which new technologies, such as online banking, spread across social systems and the factors that determine their rate of adoption. The other theories comprising of Credit Rationing Theory, Financial Intermediation Theory, and Theory of Financial Innovation complement the DOI framework by explaining the financial, institutional, and technological mechanisms that either facilitate or constrain the adoption and use of digital financial tools by SMEs, thereby influencing financial inclusion outcomes.

2.2.1 Diffusion Innovation Theory

Everett M. Rogers developed the Diffusion of Innovations Theory in 1962. It is a fundamental framework that describes how new concepts, methods, or technology gradually spread throughout a society or between societies. Diffusion, according to Abuhassna and Zaid (2023), is the process by which an innovation gradually spreads among the members of an ecosystem of society via certain channels. According to the theory, there are five different types of adopters, each with a different level of propensity to accept new techniques or technologies. It also outlines important elements that affect an innovation's adoption, such as its relative advantage, compatibility with current norms and values, trialability, complexity, and observability.

While the Diffusion of Innovations Theory provides valuable insights into how technologies spread, it has been criticized for being overly deterministic and assuming a linear progression of adoption that does not always reflect the complex realities of organizational and societal change (Greenhalgh et al. 2005). The model tends to emphasize the characteristics of the innovation itself while underestimating the influence of broader socio-economic, cultural, and institutional contexts that shape adoption patterns. Moreover, it has limited ability to account for structural barriers such as inadequate infrastructure or regulatory constraints that may inhibit SMEs in developing countries from adopting online banking services, regardless of their perceived advantages.

The theory contributes to understanding the integration of online banking services among SMEs, where online banking represents the innovation and SMEs constitute the social system within which diffusion occurs. According to the theory, the adoption of online banking services by SMEs depends on how these businesses perceive the advantages of such services—such as convenience, cost efficiency, and improved financial management—relative to traditional banking

methods (Khattab, Alhadid & Alnwaigah, 2015). If online banking is seen as compatible with SME operations, easy to use, and its benefits observable and testable, adoption is likely to increase. Hence, DOI Theory provides the main explanatory lens for examining how SMEs adopt digital technologies to enhance financial inclusion.

While the Diffusion of Innovation Theory explains how and why SMEs adopt digital financial technologies, it does not fully address the financial constraints that might hinder adoption despite positive perceptions of innovation. The Credit Rationing Theory complements DOI by examining the supply-side limitations particularly access to credit that affect the capacity of SMEs to adopt or benefit from such technologies.

2.2.2 Credit Rationing Theory

The theory was proposed in 1981 by Stiglitz and Weiss and forms a foundational concept in financial economics field that explains imperfections in credit markets. The theory states that credit rationing happens when lenders restrict the quantity of credit accessible to borrowers due to asymmetric knowledge, the possibility of moral hazard and adverse selection, rather than interest rate limits or regulatory constraints (Stiglitz & Weiss, 1981). According to the hypothesis, lenders may still refuse loans to specific groups of borrowers who are thought to be dangerous, even if they are okay with paying higher interest rates.

The theory argues that in the presence of imperfect information, higher interest rates do not necessarily compensate lenders for increased risk. Instead, higher rates may attract riskier borrowers or incentivize existing borrowers to undertake riskier projects in order to meet their debt obligations (Stiglitz & Weiss, 1987). As a result, financial institutions might prefer to ration credit by limiting the amount disbursed or rejecting applications altogether, rather than adjusting interest

rates upwards. This behavior creates barriers to accessing formal financial services, especially for SMEs, which often lack sufficient credit history, collateral, or formal documentation.

Although the Credit Rationing Theory highlights the challenges of information asymmetry and explains why SMEs are often excluded from formal credit markets, it has been critiqued for offering a static view of lender–borrower relationships (Jaffee & Russell, 1996). The theory largely ignores the dynamic mechanisms that financial institutions and borrowers may employ to overcome information asymmetry, such as the use of collateral substitutes, credit scoring technologies, or relationship banking. Furthermore, it assumes that rationing is a rational response by lenders, without fully addressing how institutional biases, regulatory environments, or technological innovations such as digital lending may reshape access to credit in practice.

In the study, the theory provides a strong theoretical foundation for examining the role of digital lending platforms. Traditional financial institutions in Kenya have historically viewed SMEs as high-risk clients, leading to widespread credit rationing. However, digital lending platforms are emerging as alternative avenues that leverage technology to assess creditworthiness in innovative ways (Schreft & Villamil, 1992). The platforms have the potential to mitigate the effects of traditional credit rationing by reducing information asymmetry and offering more inclusive lending criteria. By addressing the root causes of credit rationing, digital platforms enhance access to credit, thereby fostering greater financial inclusion for SMEs.

Whereas Credit Rationing Theory focuses on credit accessibility, it does not explain the institutional role of intermediaries in extending financial services to SMEs. The Financial Intermediation Theory builds on this by showing how financial institutions and their digital intermediaries such as agency banking networks bridge the gap between lenders and borrowers to enhance inclusion.

2.2.3 Financial Intermediation Theory

Gurley and Shaw introduced the concept in 1960, and it offers a fundamental framework for comprehending how financial intermediaries help close the disparity amongst those who save and those who borrow in an economy. According to the theory, financial intermediaries exist to overcome various market imperfections that hinder the efficient allocation of capital (Allen & Santomero, 1997). The imperfections include information asymmetry, transaction costs, and the indivisibility of certain investments. Intermediaries help enhance liquidity, manage risks, and reduce the costs of financial transactions by pooling funds from savers and allocating them to productive investments.

A key proposition of the theory as noted by Kithandi (2025) is that intermediaries act as a crucial conduit for mobilizing savings and directing them towards sectors that require capital, especially SMEs that often face barriers in accessing traditional banking services. This intermediation process is particularly vital in developing economies, where formal financial markets are either underdeveloped or inaccessible to large segments of the population and businesses. The relevance of the Financial Intermediation Theory to the study objective lies in the theory's emphasis on the pivotal role of intermediaries in expanding access to finance. Agency banking is a contemporary type of financial intermediation that enables banks to expand their services via independent intermediaries like retail stores and mobile money wallets. It leverages digital technologies to bring banking services closer to underserved populations, including SMEs in remote or low-income urban areas (Gelle, Mwambia & Kimathi, 2023).

Although Financial Intermediation Theory explains the role of intermediaries in addressing market imperfections, critics argue that it underplays the growing disintermediation of financial markets, where technology allows savers and borrowers to interact directly without intermediaries

(Allen & Santomero, 2001). The theory also tends to assume that intermediaries are always efficient and trustworthy, overlooking the risks of agency problems, fraud, or exploitation that may arise when intermediaries operate in weakly regulated environments. In contexts like Kenya, where agency banking plays a critical role, the theory does not adequately capture the risks of dependency on informal agents or the challenges of ensuring service quality and consumer protection.

Through agency banking, financial institutions can lower the cost of service delivery and increase outreach without the need for physical bank branches. This aligns directly with the core idea of financial intermediation by overcoming barriers of distance, cost, and lack of formal documentation. Agency banking platforms promote financial inclusion and empower SMEs to participate more actively in economic development by facilitating deposits, withdrawals, credit access, and other banking services at the grassroots level.

While the Financial Intermediation Theory explains how intermediaries enhance access, it does not capture how financial technologies themselves evolve to address inefficiencies. The Theory of Financial Innovation complements the discussion by explaining the emergence and transformative impact of such technologies on financial inclusion.

2.2.4 Theory of Financial Innovation

The theory as proposed by Silber in 1975, seeks to explain the emergence, diffusion, and impact of new financial instruments, institutions, and technologies within the broader economic system. According to Silber, financial innovations arise primarily as responses to constraints in existing financial markets, whether regulatory, institutional, or operational (Anderloni, Llewellyn & Schmidt, 2009). The innovations are often introduced to improve efficiency, reduce transaction costs, enhance liquidity, or facilitate access to financial services that were previously limited or

inaccessible. According to the notion, financial innovation is essentially an ongoing process that is motivated by the desire to satisfy unmet financial demands and adjust to shifting market conditions.

Although the Theory of Financial Innovation provides a useful lens for understanding how new financial tools emerge to address market inefficiencies, it has been critiqued for being overly positive and not sufficiently acknowledging the risks associated with financial innovations (Frame & White, 2014). Many innovations, while designed to enhance efficiency, have also been linked to increased systemic risk, consumer exploitation, and financial exclusion of vulnerable groups when not properly regulated. In the case of mobile money, while it has advanced financial inclusion, challenges such as transaction fraud, cybercrime, and regulatory gaps raise concerns that the theory does not fully address.

Digital technologies such mobile money services represent a significant financial innovation that has completely changed how financial transactions are carried out, particularly in areas with inadequate or ineffective traditional banking infrastructure. Many SMEs are among the formerly unbanked or underbanked people that the platforms have helped to connect with the formal financial sector (Cherotich, Sang & Shisia, 2015). Mobile money services align with Silber's argument that financial innovations emerge to overcome market inefficiencies by reducing the barriers to accessing financial services. For SMEs, mobile money enables easier transactions, savings, credit access, and improved cash flow management, which are critical components of financial inclusion. Therefore, by portraying the use of mobile money as a revolutionary instrument that improves financial inclusion and accessibility and eventually aids in the expansion and sustainability of SMEs, the theory supports the goal of the study.

2.3 Empirical Review

Pereira et al. (2019) define an empirical review as an analysis of previous research on the topic by other scholars. This is essential for highlighting conceptualizational, methodological, and contextual similarities and differences in order to identify a research gap. As a result, previous research on the digital technologies and financial inclusion is included in this part. The literature on online banking services, digital lending platforms, agency banking platforms and mobile money services is reviewed in this section.

2.3.1 Online Banking Services and Financial Inclusion

Eton and Mwosi (2025) examined how digital finance affected financial inclusion in Uganda, with a particular focus on Lira City. Using descriptive and correlational designs, data were obtained from 300 respondents, including farmers and agricultural produce dealers. The study established that digital finance significantly contributes to financial inclusion, particularly through mobile money and online banking, which were found to be more accessible than ATMs and agent banking. While the findings underscore the transformative role of digital finance, their context rural Uganda and agricultural stakeholders limits applicability to urban SMEs in Kenya. More importantly, the study's unit of analysis (individual users) does not capture organizational-level factors such as firm size, transaction volume, or digital system integration that are critical in SME financial inclusion. The present study, by focusing on SMEs in Nairobi, therefore extends the discourse by exploring how firm-level adoption of online banking influences access to and utilization of financial services in a metropolitan commercial environment.

Ene et al. (2019) investigated the impact of electronic banking on financial inclusion in Nigeria using correlational and ex-post facto research designs with national-level data on ATMs and POS devices. The study revealed that POS devices significantly enhance financial inclusion,

while ATMs do not have a meaningful effect. Although this finding is valuable for understanding macro-level infrastructure effects, it remains limited in its analytical depth as it overlooks behavioral and firm-level adoption dynamics. Moreover, the study excludes critical digital channels such as mobile and internet banking—central to Kenya's digital finance ecosystem. This limits cross-contextual generalization. The current study addresses these analytical gaps by examining how SMEs' engagement with online banking beyond infrastructural availability affects their financial inclusion outcomes in the Kenyan context, where digital ecosystems are more mature and mobile-driven.

Gakuru et al. (2025) conducted a systematic literature review on the effects of internet banking on financial inclusion, analyzing 31 relevant documents from an initial pool of 563. The review concluded that internet banking has significant potential to enhance financial inclusion by reducing transaction costs and increasing accessibility. However, the study highlights persistent constraints such as digital literacy, high transaction costs, and infrastructural gaps. While this offers strong theoretical grounding, the lack of empirical validation limits its explanatory power in specific contexts like Nairobi's SME sector, where the level of digital readiness and infrastructure is relatively advanced. The present study, therefore, moves beyond theoretical synthesis to empirical testing, providing data-driven insights into how online banking practices affect SME financial inclusion in an urban, innovation-rich environment.

Melubo and Musau (2020) assessed the impact of digital banking on the financial inclusion of women-owned enterprises in Narok County, Kenya. Employing descriptive and inferential analyses, they found that digital banking significantly and positively influences financial inclusion among these enterprises. However, the study's narrow focus on women-owned businesses in a largely rural county may limit its analytical generalizability. Gender-specific and rural-context

constraints, such as limited broadband access and cultural barriers, may not apply to the diverse SME ecosystem in Nairobi. The present study builds upon this by expanding the scope to a heterogeneous SME population in an urban setting, thereby generating more inclusive insights into how digital banking services contribute to financial inclusion across different enterprise categories.

2.3.2 Digital Lending Platforms and Financial Inclusion

Nkatha (2022) investigated the influence of digital financing on the financial inclusion of small and medium-sized enterprises (SMEs) in Meru County, Kenya, using a descriptive research design and a sample of 121 respondents drawn from a population of 4,691 SMEs. The findings revealed a positive relationship between online lending and financial inclusion. While this study provides evidence that digital lending platforms enhance SMEs' access to finance, its methodological design limits the depth of causal inference since descriptive designs cannot establish the direction or magnitude of influence. Moreover, the study's focus on Meru County means its findings may not adequately reflect the competitive, technologically advanced environment of Nairobi's SMEs, where digital lending ecosystems are more diversified. The relatively small sample also constrains statistical power and external validity, suggesting a need for studies in metropolitan areas that can capture the complexities of fintech-driven inclusion among urban enterprises.

Kithinji (2017) examined the impact of digital banking strategies adopted by commercial banks on financial inclusion in Kenya through a descriptive survey of all 42 registered banks. Using secondary data from CBK annual reports (2012–2016), the study found that digital banking significantly enhanced financial inclusion. However, the reliance on institutional-level secondary data limits insight into micro-level behavioral dynamics such as SMEs' borrowing experiences, risk perceptions, or adoption barriers. Consequently, while the study demonstrates the macroeconomic role of banks in expanding access, it overlooks how digital lending specifically

enables SMEs to overcome traditional credit constraints. Furthermore, given the rapid technological evolution, the temporal gap reduces the contemporary relevance of its findings to current fintech realities, where mobile-based credit solutions and peer-to-peer lending dominate.

Tiony (2023) analyzed the relationship between digital financial services and financial inclusion in Kenya using secondary data from institutions such as KNBS, FSD-Kenya, and Safaricom. The study established that digital innovations such as mobile money, online banking, and digital payments have substantially improved financial inclusion nationwide. However, by adopting a macro-level, secondary data approach, the study assumes uniformity in digital finance adoption across sectors. This generalization obscures the heterogeneous experiences of SMEs, whose inclusion depends not only on the availability of digital platforms but also on factors such as transaction costs, digital literacy, and business formality. Therefore, while the study is valuable in establishing national trends, it fails to account for micro-contextual dynamics that influence how and why SMEs engage with digital lending platforms. A mixed-method primary data approach could yield richer insights into these behavioral dimensions.

Wathome (2020) explored the effect of digital credit on youth financial inclusion in Kangemi, Nairobi County, using a descriptive quantitative design and a sample of 384 respondents. The study found a direct positive impact of digital credit on young people's financial inclusion. Although its urban focus and use of inferential statistics make it contextually relevant, the study's focus on individuals rather than business entities limits its applicability to SME-based research. Youths' financial behaviors are often consumption-oriented rather than investment-oriented, implying that their experiences with digital credit may differ significantly from those of entrepreneurs seeking working capital. Therefore, while the study illustrates how digital credit

promotes inclusion in urban low-income populations, it does not capture the structural, operational, and strategic financing needs that characterize SMEs in Nairobi's competitive environment.

2.3.3 Agency Banking Platforms and Financial Inclusion

Lotto (2016) assessed the role of agency banking in enhancing financial inclusion in Tanzania and found that by reducing travel distance and operational costs, agency banking enhanced the accessibility and convenience of banking services. While the study provides valuable regional insight into how agent networks expand financial access, it is largely descriptive and contextually dated. The Tanzanian banking ecosystem was at an early stage of agency diffusion compared to Kenya's more mature and technologically integrated model. Moreover, Lotto's work does not account for SME-specific outcomes such as access to credit or digital recordkeeping, key indicators of inclusion for small enterprises. This limits the study's relevance to understanding the depth and usage dimensions of financial inclusion among SMEs in Nairobi County, where agency banking has evolved into a platform for value-added services beyond deposits and withdrawals.

Similarly, Kithinji (2017) explored the impact of agency banking on financial inclusion using data from Equity and Stanbic Banks in Uganda. The study concluded that agency banking enhances inclusion by lowering transaction costs and overcoming geographical barriers. However, the study's analytical depth is constrained by its narrow institutional and geographic scope, focusing on only two banks and a single municipality. While it highlights the positive role of affordability and language localization in promoting access, it overlooks the heterogeneity of SMEs' financial needs. In Nairobi's dynamic SME ecosystem, where competition among agents is high and digital ecosystems are interlinked with mobile money, such micro-contextual factors could substantially alter the impact of agency banking. Thus, the study's findings, though

supportive of agency banking's inclusion role, are not generalizable without considering the technological sophistication and economic diversity of Nairobi SMEs.

Nzioka (2018) analyzed CBK secondary data to examine the contribution of agency banking to financial inclusion, using regression and correlation techniques. Although the study found a strong positive correlation between the two variables, its reliance on aggregated institutional data obscures the nuanced mechanisms through which agency banking influences financial inclusion. Specifically, SME-level dynamics such as digital transaction frequency, access to float, and integration with mobile platforms remain unexplored. The study's conclusion that agency banking does not significantly affect financial inclusion may reflect the limitations of macro-level data rather than an absence of impact. Therefore, a more micro-analytical approach, such as the one proposed in this study, is essential to capture behavioral and experiential dimensions of SMEs' financial participation in Nairobi.

More recently, Dimbia and Wanjohi (2023) used primary data from commercial bank agents in Siaya County and established a positive relationship between agent banking and financial inclusion. While this study strengthens the empirical case for agency banking as a driver of inclusion within Kenya, its unit of analysis, the agents, presents a supply-side bias that overlooks the demand-side realities of SMEs as end users. Moreover, Siaya's rural economic context differs markedly from Nairobi's urbanized, innovation-driven financial landscape, where digital connectivity and transaction volumes are significantly higher. Hence, while the study confirms the general positive association, it does not unpack the mechanisms of inclusion relevant to SMEs operating in metropolitan Nairobi. This gap underscores the need for localized and SME-focused empirical investigations, as addressed by the current study.

2.3.4 Mobile Money Services and Financial Inclusion

Nyimbiri (2021) examined mobile money technology across 14 Sub-Saharan African countries using panel data and established that a rise in mobile money operators correlates positively with financial inclusion. While the study offers a strong macroeconomic perspective, its cross-country design abstracts from the institutional and behavioral contexts shaping inclusion outcomes. In Kenya where mobile money is not only a transaction medium but also a business enabler for SMEs, the dynamics are far more complex. The study's reliance on aggregate panel data masks local variations in usage intensity, interoperability, and service diversification, which are critical to understanding SME-level financial inclusion in Nairobi County.

Similarly, Maniriho (2021) used FinScope data from Rwanda to investigate drivers of mobile money adoption, identifying wealth, asset ownership, and social networks as key factors influencing usage. Although the study advances the understanding of socio-economic determinants of mobile money uptake, its individual-level focus overlooks enterprise-level financial practices. SMEs' adoption decisions are often driven by business liquidity cycles, customer base digitization, and transaction costs, variables absent in this analysis. Moreover, Rwanda's mobile money ecosystem remains less developed than Kenya's, limiting the transferability of findings. Consequently, while the study underscores mobile money's role in promoting savings and inclusion, its explanatory power for Kenyan SMEs is limited by contextual and analytical scope.

In the Kenyan context, Nzyoka (2020) examined how mobile money services contribute to SME financial inclusion in Mavoko Sub-County. The study found that mobile money enhances inclusion by improving transaction efficiency and access to financial services. Despite being contextually aligned with the present study, its reliance solely on secondary data restricts its

capacity to capture SMEs' lived experiences—such as perceptions of transaction reliability, cost structures, and integration with formal financial systems. Moreover, Mavoko's peri-urban setting differs economically from Nairobi's highly digitized environment. This creates a need for primary, localized data to reflect Nairobi's distinct SME financing ecosystem.

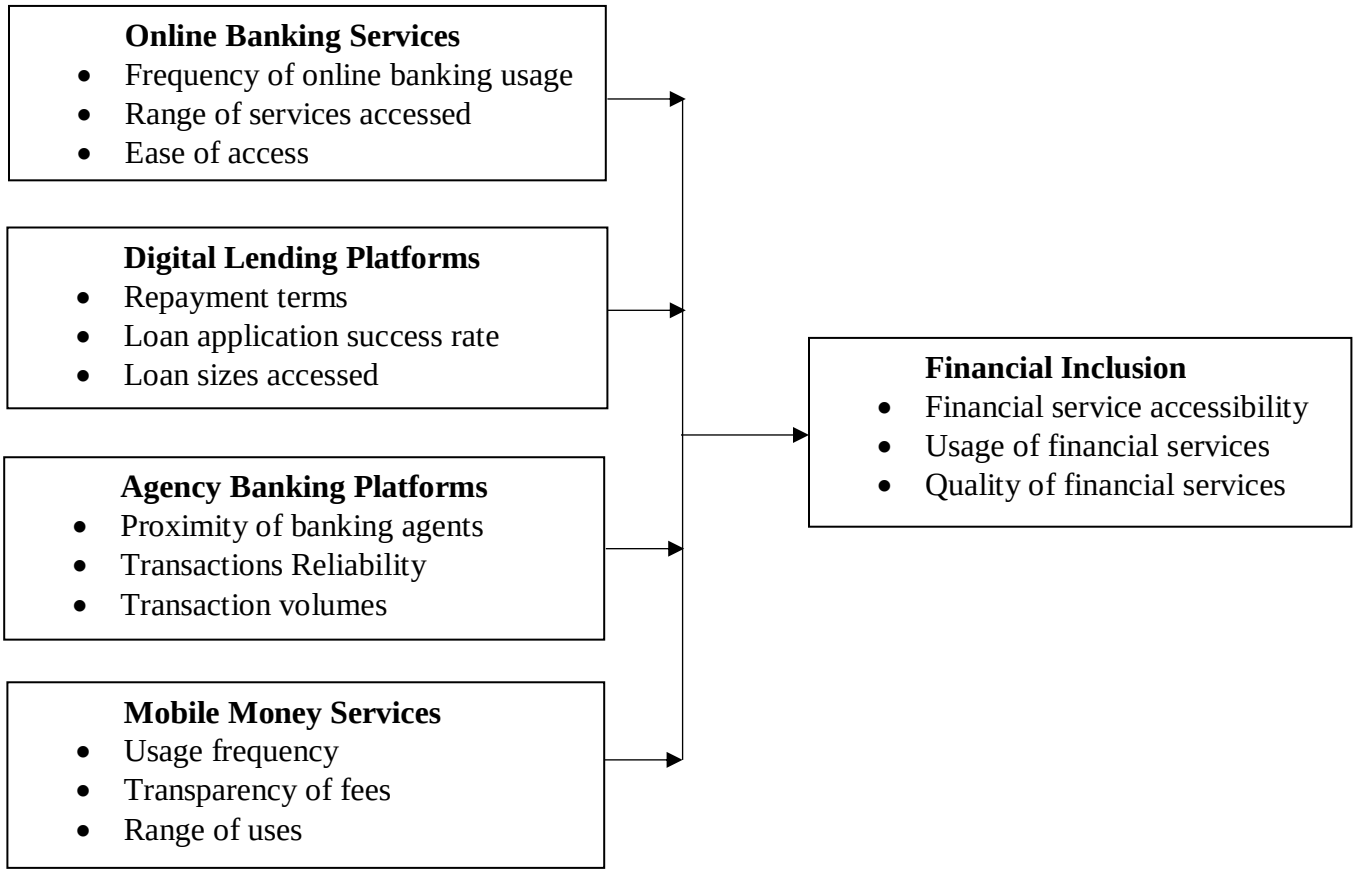
Wakaba and Wepukhulu (2019) analyzed the impact of mobile money deposits, savings, and agency-related services on financial inclusion using secondary data from major mobile money providers between 2013 and 2018. Their findings confirmed that mobile money positively influences inclusion at a national level. However, the study's temporal frame limits its relevance, as Kenya's fintech landscape has evolved rapidly with the emergence of interoperable platforms and SME-tailored mobile financial products. Additionally, its exclusive use of provider-level data omits the end-user dimension, particularly how SMEs perceive and leverage mobile money for business growth and financial integration.

2.4 Conceptual Framework

A conceptual framework is made up of networks of concepts that are connected by links and offer a comprehensive understanding of a particular phenomenon. The framework gives the entire study structure and content. A conceptual framework, according to Waldt (2020) is a collection of vast ideas and philosophy drawn from relevant fields of study and utilized to form a subsequent presentation. The conceptual framework that was used in the investigation is presented in Figure 1. The independent variables of the study comprised of online banking services, digital lending platforms, agency banking platforms and mobile money services while the dependent variable was financial inclusion.

FIGURE 1

Conceptual Framework



Independent Variables **Dependent Variable**

Source (Researcher 2025)

2.5 Operationalization of the Study Variables

TABLE 1
Operationalization of the Variables

Variable Type	Variable	Indicators	Measurement Scale
Independent Variable	Online Banking Services	• Frequency of online banking usage • Range of services accessed • Ease of access	Likert Scale
Independent Variable	Digital Lending Platforms	• Proximity of banking agents • Transactions Reliability • Transaction volumes	Likert Scale
Independent Variable	Agency Banking Platforms	• Proximity of banking agents • Transactions Reliability • Transaction volumes	Likert Scale
Independent Variable	Mobile Money Services	• Usage frequency • Transparency of fees • Range of uses	Likert Scale
Dependent Variable	Financial Inclusion	• Financial service accessibility • Usage of financial services • Quality of financial services	Likert Scale

2.6 Research Gaps

Despite the growing body of empirical studies on digital technologies and financial inclusion, several research gaps remain evident. Majority of the studies reviewed, such as those by Eton and Mwosi (2025) and Ene et al. (2019), focus on broader national and regional contexts, thus overlooking localized and context-specific dynamics that influence the adoption and impact of digital financial services. While these studies highlight the significance of mobile money and online banking, there is limited empirical focus on how these technologies uniquely affect SMEs

within Nairobi County particularly in terms of accessibility, digital literacy, and affordability. Additionally, studies like Gakuru et al. (2025) and Melubo and Musau (2020) identify barriers such as low digital literacy and infrastructure limitations, yet fail to delve into how these barriers specifically hinder SME financial inclusion in urban areas within Nairobi.

Moreover, a notable gap exists in studies that isolate the role of individual digital financial platforms such as digital lending and agency banking in relation to specific business characteristics such as ownership structure, sector type, or business size. For instance, while Nkatha (2022) and Tiony (2023) affirm the positive impact of digital lending and digital financial services on financial inclusion, they fail to sufficiently disaggregate their findings to reflect the unique experiences of SMEs in Nairobi County. Similarly, while Dimbia and Wanjohi (2023) and Lotto (2016) highlight the benefits of agency banking, there is little concentration into how SMEs in densely populated urban areas interact with such services differently compared to those in rural settings.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology the researcher intends to use to achieve the goal of the study. This chapter covers the research design, study population, sample and sampling process, research tools, and data gathering methods. The chapter also covers data analysis and presentation, as well as pretesting procedures.

3.2 Research Design

A research design, as posited by Khanday and Khanam (2019), is a framework that guides the process of collecting, analyzing, and interpreting data to provide answers to research questions. This study adopted a descriptive-correlational research design. The descriptive component was used to gather detailed information about the current status of digital technologies adopted by small and medium-sized enterprises (SMEs) in Nairobi County, while the correlational component examined the relationship between digital technologies and financial inclusion. According to Siedlecki (2020), descriptive designs are suitable for studies that aim to present an accurate profile of events, persons, or situations as they naturally occur. Similarly, Williams (2021) asserts that descriptive designs are essential in explaining the characteristics and patterns of variables without manipulating them.

The correlational approach, on the other hand, was appropriate because it allowed the researcher to determine the strength and direction of the association between digital technology variables (such as online banking, mobile money, agency banking, and digital lending platforms) and financial inclusion indicators among SMEs. As emphasized by Creswell and Creswell (2018),

a correlational design is particularly useful in social science research when the goal is to explore associations among naturally occurring variables and draw inferences based on observed relationships. Therefore, the descriptive-correlational design was considered suitable for this study as it provided a systematic, factual, and objective assessment of how digital technologies influence financial inclusion among SMEs in Nairobi County without manipulating any of the study variables.

3.3 Target Population

Willie (2024) define a population as the entire set of participants that a researcher wishes to examine. SME's that operate in Nairobi City County's CBD was the focus of this study. The choice to focus on SMEs located within the Nairobi CBD was informed by the area's concentration of diverse business activities and its high rate of digital technology adoption compared to other parts of the county. A total of 21,100 SMEs were targeted as per the Nairobi City County Directorate of Trade Licensing (2024). The SMEs were categorized as outlined in table 2. The units of observation comprised of owners or managers of SMEs in each of the category. The inclusion criteria was only those SMEs that have been in operation for the last five years and have adopted digital technologies in their operations. This criterion ensured that respondents had sufficient operational experience and stable business histories, enabling them to provide informed insights on the long-term impact of digital technologies on financial inclusion. To address potential misclassification during data collection, the researcher provided clear definitions and examples for each SME category and verify classification with respondents to ensure accurate categorization.

TABLE 2

Target Population

SME Category	Population	Percentage
Industrial Plants, Factories and Workshops	1,342	6.4%
Private Education, Health and Entertainment	934	4.4%
Accommodation and Catering (Hospitality)	1,750	8.3%
General Trade, Wholesale, Retails, Stores	11,353	53.8%
Transport, Storage and Communications	1,200	5.7%
Professional and Technical Services	3,242	15.4%
Agriculture, Forestry and Natural Resources	1,025	4.9%
Informal Sector (Jua Kali)	254	1.2%
Total	**21,100**	**100%**

3.4 Sampling Procedure and Sample Size

The study utilized a stratified sampling approach, where eight clusters of SME categories were used to classify the businesses in this study. Stratified sampling was considered appropriate because it ensures that all key subgroups of the population are adequately represented in the sample, thereby enhancing the accuracy and generalizability of the findings. According to Kothari (2014), stratified sampling is effective when the population is heterogeneous, as it allows the researcher to divide it into relatively homogeneous subgroups (strata) and draw samples from each, ensuring representation from all key segments. This approach makes it possible for every element that comprises the study population to participate, thus improving the precision of the results (Balakrishnan, 2014). A representative sample from each of these clusters were obtained, allowing for coverage of all businesses operating inside the CDB. To derive the sample size of the study, Fisher's et al. (2007) sampling formula was applied as outlined below:

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

Where:

n=represents the sample size

z=1.96(Critical standard score from the cumulative standard normal table)

p=probability of success set as 50% in this study

d=level of significance which is 0.1%

The sample size is thus generate as follows;

$$n = \frac{(1.96)^2 * (0.5) * (0.5)}{(0.1)^2}$$

$$n = 96$$

The sample size was distributed as outlined in table 3:

TABLE 3

Sample Size

SME Category	Population	Sample Size	Percentage
Industrial Plants, Factories and Workshops	1,342	6	6.4%
Private Education, Health and Entertainment	934	4	4.4%
Accommodation and Catering (Hospitality)	1,750	8	8.3%
General Trade, Wholesale, Retails, Stores	11,353	52	53.8%
Transport, Storage and Communications	1,200	5	5.7%
Professional and Technical Services	3,242	15	15.4%
Agriculture, Forestry and Natural Resources	1,025	5	4.9%
Informal Sector (Jua Kali)	254	1	1.2%
Total	**21,100**	**96**	**100%**

3.5 Research Instruments

Sharma (2022) defines a data collection instrument as a tool that researchers utilize to gather organized and accurate data relevant to the study's objectives. The study utilized primary data collected through a structured questionnaire. The use of structured questionnaires was appropriate because they allow the researcher to collect standardized information from a large number of respondents within a short time and at a relatively low cost. According to Kothari (2014), questionnaires are suitable for descriptive studies as they facilitate the collection of quantitative data, ensure uniformity of responses, and enhance the reliability and validity of the data collected. Therefore, the structured questionnaire was considered the most suitable instrument for gathering data on the influence of digital technologies on financial inclusion among small and medium-sized enterprises in Nairobi County, Kenya.

The questionnaire was structured on a 5-point Likert scale. The questionnaire was broken up into six pieces in order to collect the required data. While the next five sections collect data on the study's variables, the first segment attempts to obtain background information about the respondents. Due to its low cost, accessibility to a wide geographic contact, enhanced anonymity, and reduced biasing error, this research method was selected for the study. To address response bias during data collection, the researcher assured respondents of confidentiality and anonymity to encourage honest responses and use neutral, non-leading questions to minimize socially desirable answers

3.6 Data Collection Procedures

Before entering the field to gather data, a permit for research from the National Commission for Science, Technology, and Innovation and an ethical approval from KCA University Scientific and Ethics Review Committee. Additionally, a research permit was sought from Nairobi City County.

To increase the rate of response, data was gathered using the drop and pick method. Data collection was facilitated by trained research assistants who assisted in explaining to the respondents questions posed in the questionnaire. The researcher involved research assistants conversant with more than two languages to ensure the respondents gets clear understanding of the componenets of the questionnaire.

3.7 Pilot Test

Prior to the data collection phase, the researcher performed a pre-study to assess the validity and reliability of the instrument. A pilot study according to Anupama, Chaudhary and Lakshmi (2023) enhances data collecting by eliminating any potential issues that participants might encounter when filling out the questionnaire. Malmqvist et al. (2019) stated that an appropriate size for piloting ought to be between 5% and 10% of the sample size. The study thus adopted 8% of the sample population which comprised of 8 questionnaires. One firm from each category was selected and involved in piloting. The selected firms were exempted from the main study.

3.7.1 Reliability of Research Instruments

Reliability refers to the degree to which a research instrument yields consistent results after repeated trials under similar conditions (Taherdoost, 2016). To assess the reliability of the research instruments in this study, the internal consistency approach using Cronbach's alpha coefficient was employed. Cronbach's alpha is widely regarded as a robust and appropriate measure for determining the internal consistency of multi-item scales in social science research (Tavakol & Dennick, 2011). This method was selected because it provides an estimate of the average correlation among all items measuring the same construct, thereby indicating how closely related the items are as a group. This study employed this technique to determine reliability, and a cutoff value of 0.7 was utilized; any values below this threshold suggested that the data collection tool is

unreliable and should be re-edited. Consistently high Cronbach's alpha values across different constructs provided assurance that the instrument captured the intended measures reliably.

3.7.2 Validity of Research Instruments

The extent to which a tool measures what it is supposed to assess is known as validity, as explained by Mohamad et al. (2015). In the study, content validity was assessed. To ensure content validity, the subject matter experts, including the supervisor, reviewed the instrument for relevance and comprehensiveness. The feedback was used by the researcher to improve the questionnaire's quality. In addition, the questionnaire items were aligned with the study objectives to ensure that every construct was adequately represented. This process enhanced the precision of the data collection tool and minimized the risk of measurement errors.

3.8 Data Analysis and Presentation

Data analysis, according to Alem (2020), is the process that starts as soon as data collection is complete and lasts until the data has been processed and analyzed. A thorough review of the questionnaires' completeness and accuracy was conducted. Following coding and classification based on similarity, the data was tallied. The study utilized both descriptive and inferential statistics to analyze the data. The statistics were generated through SPSS. Tables and figures were used to display the results of the analysis. To assess the nature of relationship between the independent and dependent variables, the study adopted a multivariate model outlined below:

$$\mathbf{Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\varepsilon}$$

Where;

Y = Financial Inclusion

$\boldsymbol{\beta_0}$= Regression constant or intercept

β_1, β_2, β_3 and β_4 are the independent variables unknown coefficients

X_1 = Online Banking Services

X_2= Digital Lending Platforms

X_3= Agency Banking Platforms

X_4 = Mobile Money Services

ε = Error term

3.9 Diagnostic Tests

To model the interaction between the independent and dependent variables, this study used the Multivariate Regression Model. The study data was examined for inference purposes to see if it meets the model's assumptions of heteroscedasticity, normality, and multicollinearity. This is crucial because, at best, scientific insights produced by a regression model that violates these assumptions may be ineffective; at worst, they may be gravely skewed or deceptive (Glasser, 2008).

3.9.1 Heteroscedasticity Test

When the variability of the error terms in regression analysis is not consistent across all levels of the independent variables, this is referred to as heteroscedasticity. The Breusch-Pagan test was used in this study to determine whether heteroscedasticity was present. A p-value of less than 0.05 indicated the presence of heteroscedasticity.

3.9.2 Normality Test

One of the statistical methods most frequently used to evaluate the assumption of normalcy in research data is the Shapiro-Wilk test. It assesses whether the scores for the independent and dependent variables are distributed according to a normal curve, which is a crucial need for many

parametric statistical procedures, including analysis of variance, regression, and correlation. The data in this test is normally distributed, according to the null hypothesis, and it deviates from normality, according to the alternative hypothesis. The p-value serves as the basis for the decision rule; if it exceeds the traditional significance level of 0.05, the null hypothesis is not disproved, suggesting that there is no discernible departure from normalcy in the data. Consequently, the data for the constructs are roughly normally distributed and appropriate for additional parametric testing without the need for transformation or non-parametric alternatives when all of the variables under investigation yield p-values over 0.05 (Rani, 2016).

3.9.3 Multicollinearity Test

To find out if there were significant intercorrelations between the independent variables, multicollinearity was examined. The Variance Inflation Factor (VIF) was employed in the investigation, with a severe multicollinearity threshold of 10. Multicollinearity was indicated by a VIF value larger than 10 or a tolerance value less than 0.1, which prompted corrective measures including variable removal or combination (Hair et al. 2020).

3.10 Ethical Consideration

Ethics in research guarantees that no one or any party is harmed or suffers as a result of the research activities (Hammersley and Traianou, 2012). The following ethical concerns were noted by the researcher while the study was being conducted:

The study obtained an informed consent from the respondents. The informed consent was in a written format where the respondent was expected to read, understand and sign. The importance of informed consent is to provide the respondents with sufficient and detailed information in regards to the study in order to allow them make voluntary and informed decision to participate in the study. The researcher informed the respondents on the purpose of the study, timeframe, procedures,

information on withdrawal rights, possible consequences, possible benefits of the research, and incentives such as rewards and benefits, if any. This information enabled the respondents in making willful decisions to participate.

The researcher endeavored to maintain the privacy of respondents. The respondents were assured that any information that they gave won't be released to any party and was strictly used for the purposes of the study. Additionally, the respondents were assured that there was no identification information that was revealed either verbally or in written form.

The respondents' identities were maintained by the researcher in the entire course of the research. Consequently, any information pertaining to the respondent shall not be revealed or exposed to any party. During data collection, the researcher incorporated a structured community engagement strategy by conducting stakeholder consultations and feedback sessions with SME representatives to ensure their views and insights inform the study.

The researcher further ensured the safety of the collected data by filing the records for easier referencing. The collected data was strictly handled by the researcher while the research assistants only handled the anonymized data. Once the data has been coded into soft copy, that handcopies were retained by the researcher for a period of 6 months then destroyed. The softcopy data was password encrypted to and stored in the cloud. Only the researcher had access to the soft copy data. The results of the study will be published online through KCA repository for accessibility. Additionally, the thesis will be made available to the respondents upon request after the researcher have finalized the research process, defended and graduated.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

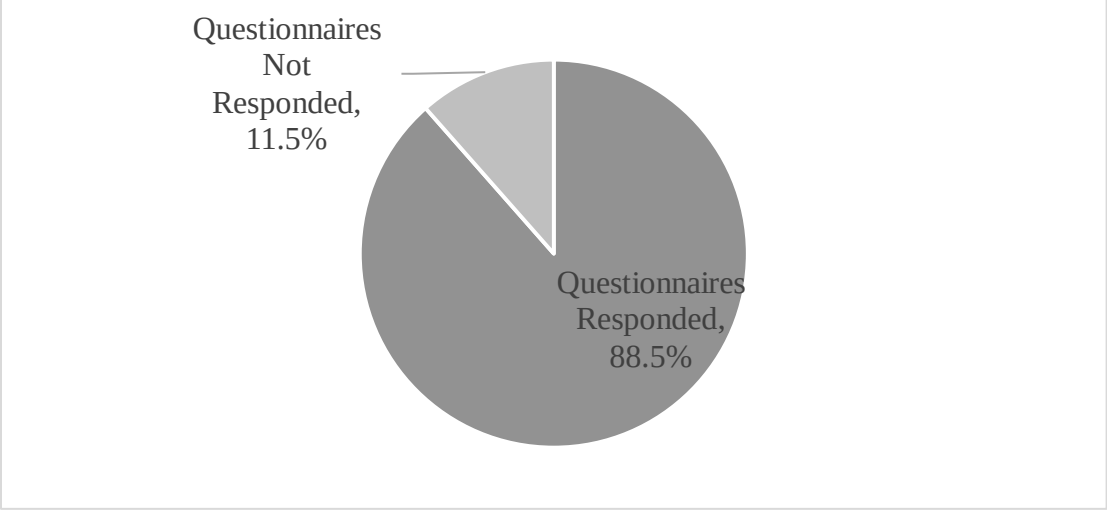
The chapter covers the results of the analysis and discussion of the same and comprises of rate of response as well as the background information of the respondents. The chapter further outlines the results on both descriptive and inferential statistics in respect to the objectives of the study.

4.2 Response Rate

Ninety-six questionnaires were sent to the study's target respondents. Of these, 85 were correctly filled out and sent back, yielding an 88.5% response rate. It was decided that the rate of response was enough for data analysis. A response rate of more than 70% is deemed appropriate for study analysis, per Creswell (2014). The utilisation of research associates in gathering data was significantly responsible for the high level of participation attained in this study. Figure 2 displays the specifics of the response rate.

FIGURE 2

Response Rate



4.3 Pilot Study Results

The study conducted a pilot study to assess the reliability and validity of the questionnaires prior the main study. This section presents the results of the pilot study.

4.3.1 Reliability Test Results

To assess the reliability of the research instruments in this study, the internal consistency approach using Cronbach's alpha coefficient was employed. A threshold of 0.7 was utilized where any values below this threshold suggested that the data collection tool is unreliable and should be re-edited. According to the results presented in table 4, 8 items assessing online banking services, 7 items assessing digital lending platforms, 7 items assessing agency banking platforms, 9 items assessing mobile money services and 9 items assessing financial inclusion had Cronbach alpha value of above 0.7. This implied that the items were reliable in assessing the respective measures.

TABLE 4

Reliability Test Results

Measure	No Of Items	Cronbach Alpha Value	Comments
Online Banking Services	8	0.796	Reliable
Digital Lending Platforms	7	0.814	Reliable
Agency Banking Platforms	7	0.823	Reliable
Mobile Money Services	9	0.819	Reliable
Financial Inclusion	9	0.901	Reliable

4.3.1 Validity Test Results

The study assessed the content validity of the questionnaires where the subject matter experts, including the supervisor, were requested to review the questionnaire for relevance and comprehensiveness. The feedback acquired from the experts was utilized by the researcher to improve the questionnaire's quality. In addition, the questionnaire items were aligned with the

study objectives to ensure that every construct was adequately represented. This process enhanced the precision of the data collection tool and minimized the risk of measurement errors.

4.4 Demographic Characteristics

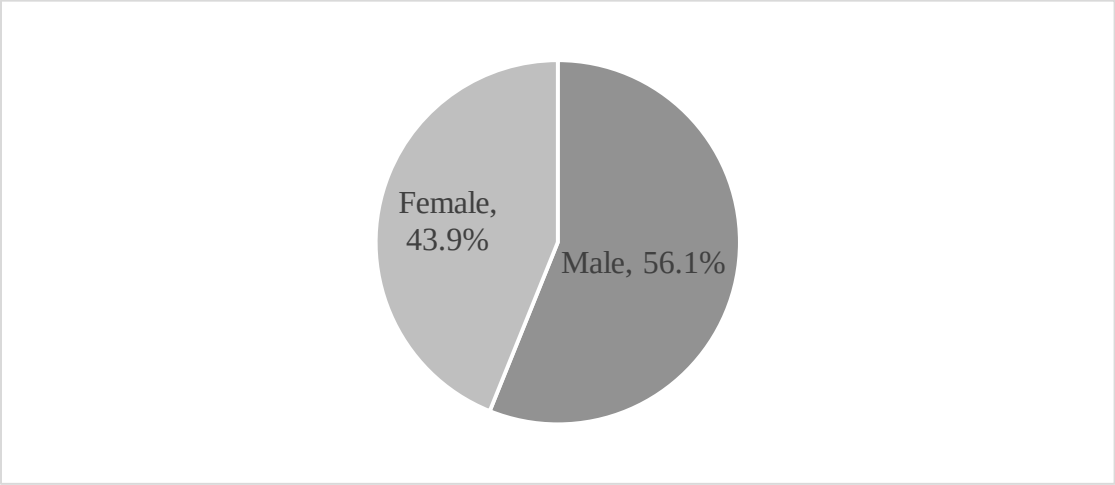
The study assessed the demographic attributes of the respondents comprising of the gender, job designation, number of years worked in the business, highest level of education, and the number of employee in the business. The following subsections presents the results.

4.3.1 Gender

Male respondents made up 56.1% of the sample, while female respondents made up 43.9%, according to the statistics on respondents' genders shown in figure 3. The findings indicate that men made up the majority of the responders.

FIGURE 3

Gender

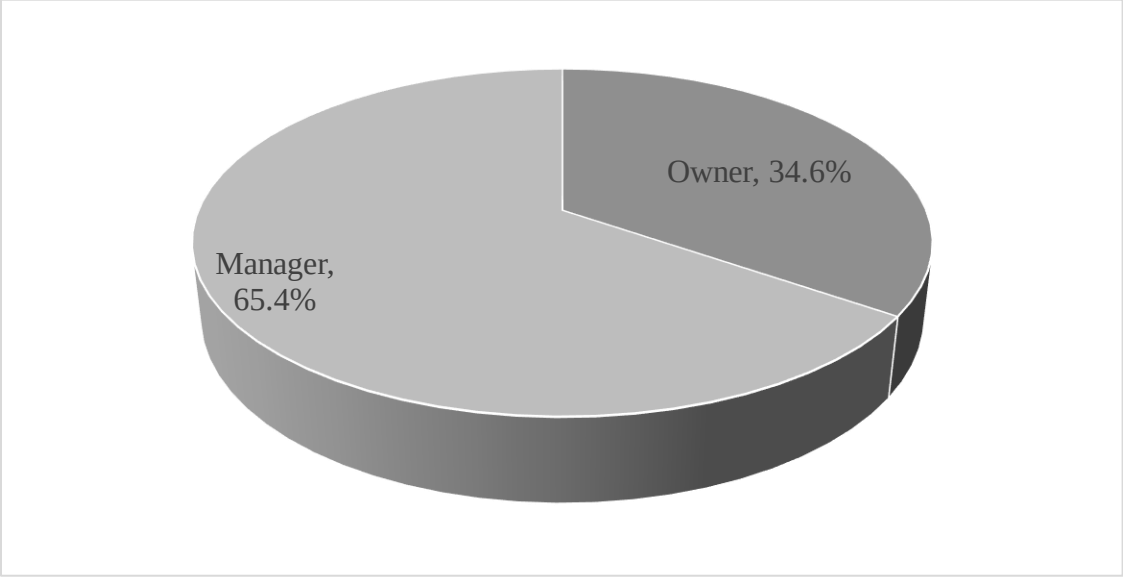


4.3.2 Job Designation

The results on the designation of the respondents presented in figure 4 shows that managers accounted for 65.4% while owners were 34.6%. The results shows that majority of the SMEs involved in the study were being run by managers.

FIGURE 4

Designation

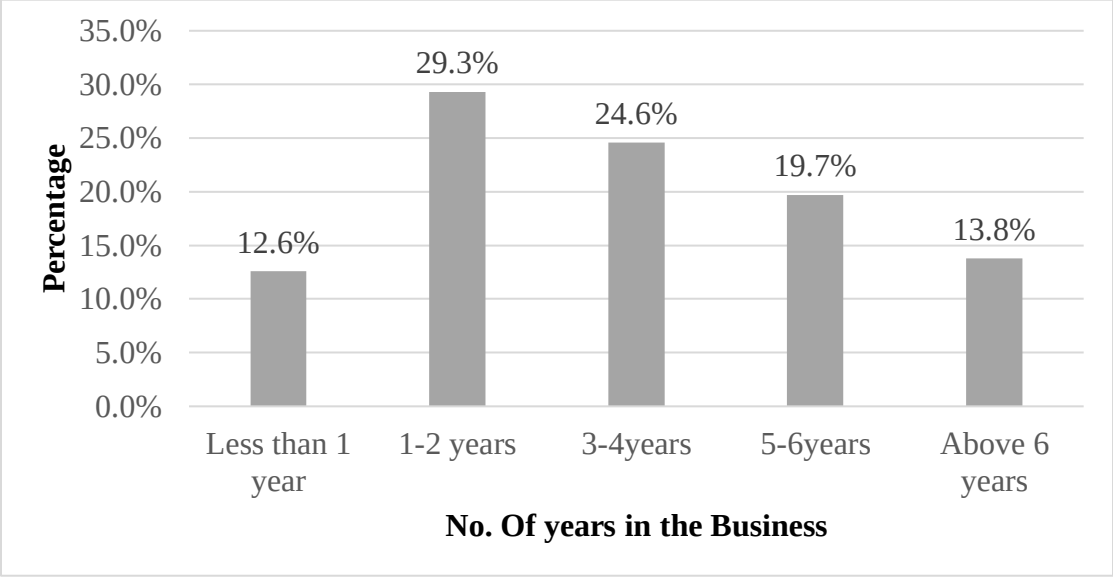


4.3.3 Number of Years Worked in the Business

Figure 5 outlines the results on the number of years the respondents had worked in the business. The data showed that 12.6% of people had been in the firm for less than a year, 29.3% had been there for one to two years, 24.6% had been there for three to four years, and 19.7% had been there for five to six years. According to the statistics, 13.8% of respondents have worked in the industry for more than six years. The majority of responders, according to the statistics, had been in the industry for more than two years.

FIGURE 5

Number of Years in Business

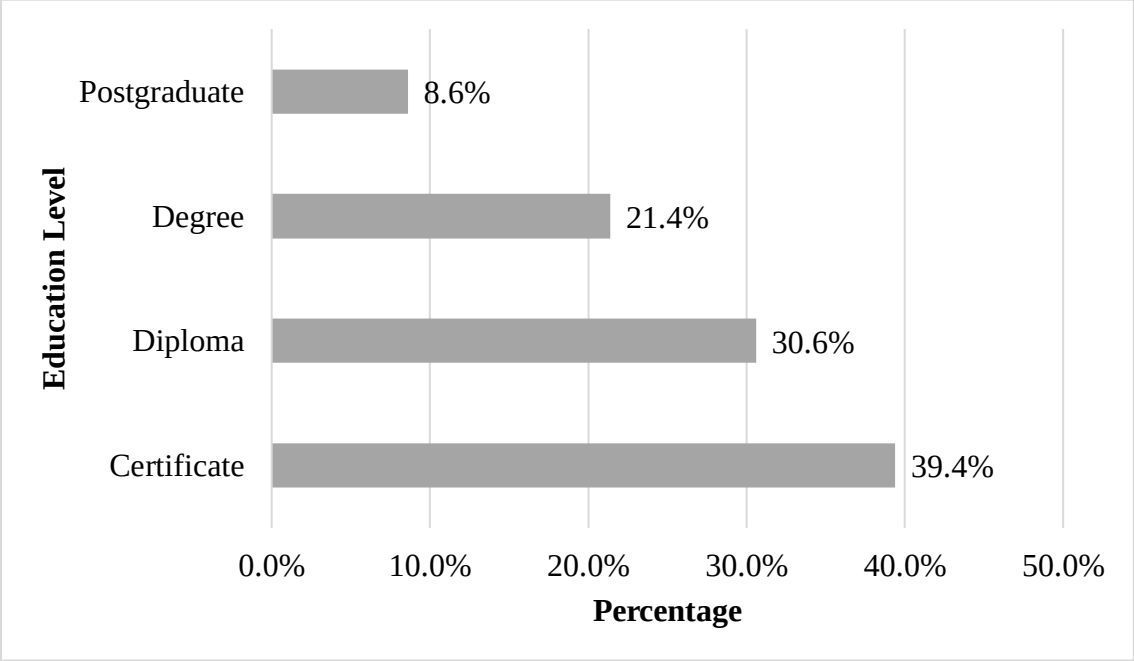


4.3.4 Highest Level of Education

The findings of the respondents' highest education attainment are shown in Figure 6. The findings showed that 39.4% of people held a certificate, 30.6% held a diploma, 21.4% held a degree, and 8.6% were postgraduate students. The majority of responders possessed a diploma or above, according to the data. The findings suggest that all of the respondents were thought to be educated, meaning they could read, comprehend, and answer the questionnaire's questions.

FIGURE 6

Education Level

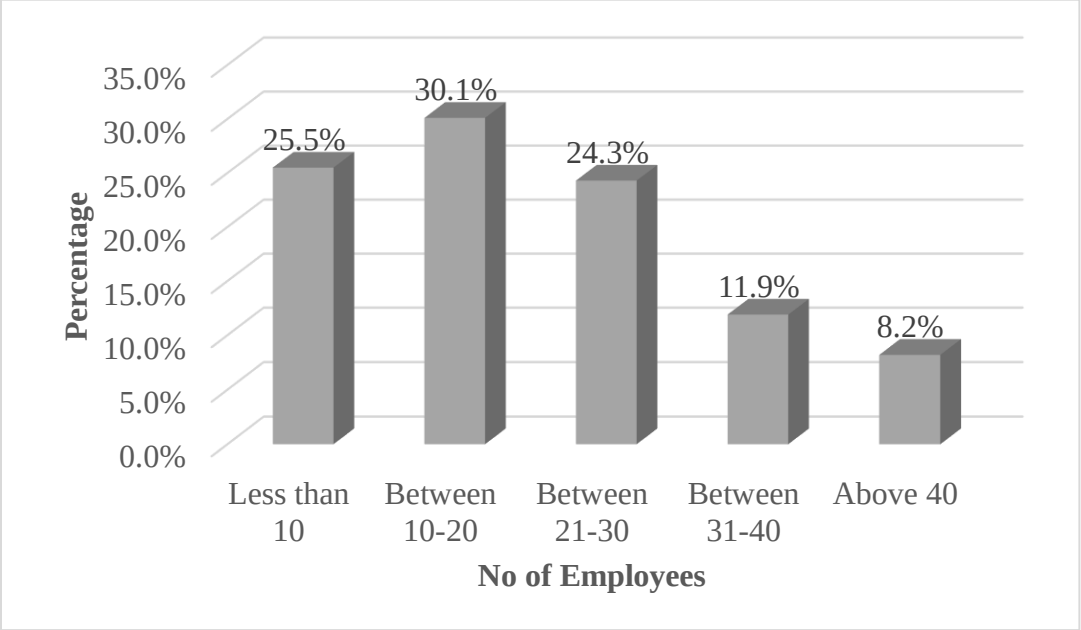


4.3.5 Number of Employee in the Business

According to the results on then number of employees presented in figure 7, 25.5% of the businesses had less than 10 employees, 30.1% had between 10 and 20 employees, 24.3% had between 21 and 30 employees while 11.9% had between 31 and 40 employees. Only 8.2% of the businesses had more than 40 employees. The results shows that majority of the businesses had more than 10 employees justifying the significant role that SMEs plays in the creation of employment.

FIGURE 7

Number of Employees



4.4 Descriptive Statistics

To compile and analyse the trends in answers pertaining to the various variables recorded in the completed questionnaires, the study used descriptive statistics. In order to collect data, a questionnaire using a five-point Likert scale was used. Participants were asked to rate how much they agreed with different statements about each variable. A scale of 1 to 5 was used, with 1 standing for "strongly disagree," 2 for "disagree," 3 for "neutral," 4 for "agree," and 5 for "strongly agree." The study used dispersion and central tendency measures, namely the mean and standard deviation, to analyse the data and provide a summary of the replies from the participants.

4.4.1 Online Banking Services

Table 5 presents the descriptive statistics on online banking services. The findings reveal a generally moderate engagement with online banking among SMEs in Nairobi County. Respondents reported average levels of agreement with statements such as frequently using online

banking services for business transactions (mean = 3.329, std. dev = 1.095), accessing their business bank account online at least once a week (mean = 3.200, std. dev = 1.213), and using online banking to manage their business finances (mean = 3.012, std. dev = 1.096). These results suggest that while SMEs recognize the potential value of online banking, its adoption remains partial, indicating that many businesses are yet to fully integrate such platforms into their routine financial operations.

Similarly, moderate responses were recorded for statements relating to the adequacy of online banking services provided by banks (mean = 3.012, std. dev = 1.096) and the use of online banking to make payments to suppliers and employees (mean = 3.259, std. dev = 1.187). This pattern implies that SMEs might still rely on traditional banking or cash-based systems for certain transactions, possibly due to concerns about transaction security, digital literacy gaps, or infrastructural limitations. The neutrality in responses regarding ease of access through mobile devices or computers (mean = 2.965, std. dev = 1.149) and platform user-friendliness (mean = 3.059, std. dev = 1.051) further reflects a cautious approach toward online financial management tools.

The overall mean score of 3.129 (std. dev = 1.089) indicates that online banking adoption among SMEs is moderate rather than widespread. This finding aligns with the Technology Acceptance Model, which posits that perceived ease of use and perceived usefulness influence technology adoption (Davis, 1989). The neutrality observed in this study may reflect SMEs' ambivalence regarding the relative advantages of online banking or a lack of confidence in the system's reliability. Furthermore, the results are consistent with Gakuru et al. (2025), who found that while online banking enhances accessibility and affordability of financial services, its uptake depends on users' trust and familiarity with digital platforms.

TABLE 5

Descriptive Statistics on Online Banking Services

Online Banking Services	N	Mean	Std.Dev
I frequently use online banking services for my business transactions.	85	3.329	1.095
I access my business bank account online at least once a week	85	3.200	1.213
Online banking helps me manage my business finances regularly	85	3.012	1.096
My bank provides all the necessary services for my business through online banking	85	3.012	1.096
I use online banking to make payments to suppliers and employees	85	3.259	1.187
It is easy for me to access online banking services using my mobile device or computer	85	2.965	1.149
I find the online banking platform user-friendly and simple to navigate	85	3.059	1.051
I rarely encounter technical issues when using online banking services	85	3.200	0.828
Overall Mean Score	85	3.129	1.089

4.4.2 Digital Lending Platforms

Table 6 presents the descriptive results on digital lending platforms. The findings reveal that respondents moderately agreed that they could easily access multiple types of business loans via online banking platforms (mean = 3.635, SD = 1.243). This suggests that while digital lending is available to many SMEs, access may still be uneven, possibly reflecting differences in technological readiness or awareness across enterprises. However, there was moderate or uncertain perception regarding the flexibility and manageability of repayment terms offered by digital lending platforms (mean = 3.118, SD = 1.257), as well as the affordability of interest rates on such loans (mean = 3.047, SD = 1.214). This uncertainty implies that although digital credit products are accessible, SMEs may perceive the associated costs and repayment structures as less favorable or inconsistent with their cash flow cycles. Such perceptions can limit full adoption and utilization of digital credit facilities.

Similarly, the respondents expressed modest confidence regarding the success rate of loan applications through digital platforms (mean = 2.906, SD = 1.109) and fairness or transparency of loan approval criteria (mean = 2.812, SD = 1.210). These findings suggest that SMEs may still distrust the algorithms or decision-making mechanisms used by digital lenders, possibly due to perceived opacity in credit scoring or limited human interaction in the loan process.

The mean scores also showed moderate agreement that loan sizes accessed through digital lending platforms meet their financial needs (mean = 3.176, SD = 1.265), and that online banking services have improved their ability to access credit facilities (mean = 2.976, SD = 0.831). These results collectively produced an overall mean score of 3.096 (SD = 1.161), indicating that SMEs had mixed or cautious attitudes toward digital lending platforms. From a theoretical perspective, these findings can be interpreted using the Technology Acceptance Model (TAM), which posits that users' behavioral intentions depend on perceived usefulness and ease of use (Davis, 1989). The neutral responses in this study imply that SMEs may not yet fully perceive digital lending platforms as significantly useful or reliable in meeting their credit needs, hence exhibiting only partial acceptance. Similarly, the Diffusion of Innovation Theory (Rogers, 2003) suggests that adoption proceeds in stages; the neutrality observed here may indicate that most SMEs are still in the early adoption or evaluation stage, testing the viability of digital lending services before committing fully.

These findings are consistent with Nkatha (2022), who found that while digital lending platforms have improved credit access for SMEs, challenges such as high interest rates, small loan limits, and lack of transparency hinder optimal utilization. Omondi and Oloko (2021) also observed that trust and perceived risk significantly influence SMEs' willingness to use fintech lending products in Kenya.

TABLE 6

Descriptive Statistics on Digital Lending Platforms

Digital Lending Platforms	N	Mean	Std.Dev
The repayment terms offered by digital lending platforms are flexible and manageable for my business.	85	3.118	1.257
The interest rates associated with repayment on digital loans are affordable.	85	3.047	1.214
My business has experienced a high success rate when applying for loans through digital platforms.	85	2.906	1.109
The criteria for loan approval on digital lending platforms are fair and transparent.	85	2.812	1.210
The loan sizes accessed through digital lending platforms meet the financial needs of my business.	85	3.176	1.265
I can easily access multiple types of business loans via online banking platforms.	85	3.635	1.243
Online banking services have improved my business's ability to access credit facilities.	85	2.976	0.831
Overall Mean Score	**85**	**3.096**	**1.161**

4.4.3 Agency Banking

The descriptive results on agency banking presented in Table 7 revealed moderate levels of agreement among respondents regarding the role of agency banking in promoting financial inclusion among SMEs in Nairobi County. Respondents moderately agreed that banking agents were located close to their business premises (mean = 3.529, SD = 1.402) and were capable of handling high volumes of transactions without delays (mean = 3.541, SD = 1.476). This implies that agency banking has enhanced convenience and accessibility to some extent by bringing financial services closer to business operators. However, the neutral ratings on statements such as the proximity of banking agents improving access to financial services (mean = 3.459, SD = 1.436) and the reliability of agents in conducting transactions (mean = 3.341, SD = 1.436) indicate that while agents are available, SMEs may still experience uncertainties regarding the quality, reliability, or consistency of services offered.

Furthermore, neutrality on whether transactions through banking agents were successful and error-free (mean = 3.306, SD = 1.480) suggests that SMEs may have encountered occasional operational inefficiencies or delays, which could reduce their confidence in fully adopting agent-based services. The relatively lower mean on the frequent use of agents for large cash transactions (mean = 3.188, SD = 1.460) further implies a cautious approach among SMEs, possibly due to perceived security risks or transaction limits. Similarly, neutrality regarding the sufficiency of services offered by banking agents (mean = 3.376, SD = 1.154) points to a perception that agency banking may not yet fully meet the diverse financial needs of SMEs.

Overall, the composite mean score of 3.392 (SD = 1.406) reflects moderate engagement with agency banking services. This suggests that although agency banking has expanded access points for financial services, its adoption among SMEs in Nairobi County remains limited or tentative. These findings are consistent with Kithinji (2017), who observed that while agency banking increases physical accessibility to banking services, full utilization depends on factors such as service reliability, transaction capacity, and trust in agents. Similarly, Mago and Chitokwindo (2014) noted that SMEs' willingness to use agency banking depends on perceptions of safety, transaction costs, and agent competence.

The findings align with the Diffusion of Innovation Theory (Rogers, 2003), which posits that innovation adoption is influenced by users' perceptions of relative advantage, compatibility, and reliability. The neutral responses suggest that SMEs may still be in the early stages of adoption, characterized by limited trial and evaluation of agency banking's benefits relative to traditional banking. The results also resonate with the Financial Intermediation Theory, which emphasizes the importance of efficient financial service channels in bridging gaps between savers and

borrowers. The neutrality observed implies that agency banking has not yet fully achieved its intermediation role among SMEs due to lingering concerns about efficiency and reliability.

TABLE 7

Descriptive Statistics on Agency Banking

Agency Banking	N	Mean	Std.Dev
There are banking agents located close to my business premises.	85	3.529	1.402
The proximity of banking agents has improved my access to financial services.	85	3.459	1.436
I can rely on banking agents to carry out financial transactions without issues.	85	3.341	1.436
Transactions done through banking agents are usually successful and error-free.	85	3.306	1.480
Banking agents are able to handle high volumes of transactions without delays.	85	3.541	1.476
My business frequently uses banking agents to carry out large cash transactions.	85	3.188	1.460
The services offered by banking agents are sufficient for my business needs.	85	3.376	1.154
Overall Mean Score	**85**	**3.392**	**1.406**

4.4.4 Mobile Money Services

The descriptive results in Table 8 indicate moderate engagement of SMEs with mobile money services. Respondents neither agreed nor disagreed with most statements, suggesting uncertainty or limited intensity in the adoption of mobile money platforms for business operations. Specifically, while the respondents reported occasional use of mobile money services (mean = 2.800, SD = 1.252) and indicated that mobile money was not yet the dominant mode of transaction in their businesses (mean = 2.506, SD = 1.098), the neutral mean scores imply that these services are used selectively rather than as a central financial tool. Similarly, the neutral response regarding increased usage over the past year (mean = 2.529, SD = 1.171) points to slow growth in adoption despite the growing national trend toward digital financial solutions.

Regarding service transparency and affordability, respondents expressed uncertainty about the clarity of transaction fees (mean = 2.459, SD = 1.287) and fairness of charges (mean = 2.118, SD = 0.762). This indicates that many SMEs may not fully understand or trust the pricing structures of mobile money providers, which could hinder their confidence in digital transactions. The slightly higher mean on the use of mobile money for savings (mean = 3.165, SD = 1.122) suggests that a portion of SMEs view mobile platforms as convenient for short-term liquidity management, although they remain less utilized for broader business financial operations such as supplier payments (mean = 2.541, SD = 0.920).

Overall, the composite mean of 2.617 (SD = 1.089) suggests moderate use and understanding of mobile money services among SMEs in Nairobi County. This finding reflects a transitional phase in financial inclusion, where awareness of mobile money exists, but full integration into business practices remains limited. These results align with Nzyoka (2020), who observed that mobile banking services enhance financial inclusion among SMEs, but their effectiveness depends on user confidence, cost transparency, and system reliability. The findings are consistent with the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use determine users' adoption of new technologies (Davis, 1989). The observed neutrality may imply that SMEs perceive mobile money as somewhat useful but still have reservations about its cost-effectiveness and reliability.

TABLE 8

Descriptive Statistics on Mobile Money Services

Mobile Money Services	N	Mean	Std.Dev
My business uses mobile money services on a daily basis.	85	2.800	1.252
Mobile money is the most frequent mode of transaction for my business.	85	2.506	1.098
The frequency of mobile money usage in my business has increased over the past year.	85	2.529	1.171
I clearly understand the transaction fees associated with using mobile money services.	85	2.459	1.287
Mobile money service providers are transparent about their charges.	85	2.847	1.358
The fees charged for mobile money transactions are fair and predictable.	85	2.118	0.762
I use mobile money services to pay suppliers and business expenses.	85	2.541	0.920
I use mobile money for saving purposes	85	3.165	1.122
Mobile money services support a wide range of financial needs for my business.	85	2.588	0.835
Overall Mean Score	**85**	**2.617**	**1.089**

4.4.5 Financial Inclusion

The descriptive results on financial inclusion presented in Table 9 revealed that most SMEs in Nairobi County had moderately high levels of financial inclusion facilitated by digital technologies. Respondents largely agreed that they could easily access financial services near their business location (mean = 4.047, std. dev = 1.090), suggesting that financial institutions have established accessible channels, possibly through agency banking and mobile-based financial service points. Respondents also agreed that they had access to digital platforms through which they could interact with financial service providers (mean = 3.824, std. dev = 1.236). This implies that digital communication tools are increasingly being utilized by SMEs to facilitate financial interactions. However, the moderate mean score indicates that some SMEs still face challenges in adopting these technologies, possibly due to digital literacy or infrastructure limitations.

The results further showed that the requirements for accessing financial services were viewed as affordable and achievable for SMEs (mean = 3.871, std. dev = 1.307). This indicates an improving inclusivity of financial systems. Respondents agreed that financial institutions offer services tailored to the needs of SMEs (mean = 3.824, std. dev = 1.390), implying that some institutions are beginning to recognize the unique credit and transaction needs of small businesses. Nevertheless, the moderate rating suggests that customization of financial products remains partial, reflecting a gap between SME needs and existing financial solutions. Similarly, the respondents agreed that their businesses regularly use digital financial services for transactions (mean = 3.906, std. dev = 1.201) and that they used digital platforms to manage their business finances (mean = 3.976, std. dev = 1.144). This reflects a growing reliance on digital tools for payments, accounting, and record management. The relatively high means underscore the increasing normalization of digital finance in day-to-day SME operations.

Moreover, respondents agreed that the financial services they use are reliable and meet their business needs effectively (mean = 3.647, std. dev = 1.334) and that the fees and charges were reasonable and transparent (mean = 3.894, std. dev = 1.102). This indicates that while most SMEs are satisfied with service reliability and cost transparency, some uncertainty persists, possibly reflecting inconsistent service quality or hidden costs. Finally, the finding that digital financial services are user-friendly and efficient (mean = 3.906, std. dev = 0.881) suggests growing confidence among SMEs in navigating digital interfaces. However, the standard deviation implies variations in user experience, likely due to differences in digital literacy or platform design across providers.

Overall, the results yielded an aggregate mean of 3.877 and a standard deviation of 1.187, indicating moderate to high financial inclusion among SMEs in Nairobi County. This aligns with

Wanof (2023), who asserts that digital technologies are transformative in bridging gaps between traditional financial systems and underserved business segments. From a theoretical perspective, these findings are consistent with the Diffusion of Innovation Theory (Rogers, 2003), which explains that adoption of financial innovations among SMEs progresses through gradual acceptance as firms perceive relative advantages, compatibility, and ease of use..

TABLE 9

Descriptive Statistics on Financial Inclusion

Financial Inclusion	N	Mean	Std.Dev
I can easily access financial services near my business location	85	4.047	1.090
I have access to digital platforms to interact with financial service providers	85	3.824	1.236
The requirements for accessing financial services are affordable and achievable for my business	85	3.871	1.307
Financial institutions offer services that are tailored to the needs of SMEs	85	3.824	1.390
My business regularly uses digital financial services for transactions	85	3.906	1.201
I use digital platforms to manage my business finances	85	3.976	1.144
The financial services I use are reliable and meet my business needs effectively	85	3.647	1.334
The fees and charges for financial services are reasonable and transparent	85	3.894	1.102
Digital financial services are user-friendly and efficient	85	3.906	0.881
Overall Mean Score	**85**	**3.877**	**1.187**

4.5 Diagnostic Tests

The study conducted diagnostic tests comprising of homoscedasticity, normality, and multicollinearity. The following subsections presents the results:

4.5.1 Heteroscedasticity Test

The study adopted Breusch-Pagan test developed by Breusch and Pagan (1979) in testing for homogeneity in a linear regression model. Homoscedasticity assumptions is arrived at when the probability value in the Breusch-Pagan test is greater that 0.05. The results indicated in Table 10 indicated an insignificant p-value which is greater than 0.05 at 5% level of significance. This shows presence of homogeneity in the error term and hence the assumption of classical linear regression on homogeneity was not violated.

TABLE 10

Breusch-Pagan Test of Homoscedasticity

Breusch-Pagan / Cook-Weisberg test for Homoscedasticity
Ho: Constant variance
chi2(3) = 0.714
Prob > chi2 = 0.598

4.5.2 Normality Test

The Kolmogorov-Smirnov (K-S) Test was used in the study to check the normality of the dependent variable. The K-S test, according to Ghasemi and Zahediasl (2012), is the most often used normality test. This may be because it has advantages over other tests and is simple to analyze using SPSS. The dependent variable had non-significant Shapiro-Wilk values and Kolmogorov-Smirnov values greater than 0.05, which suggested the variable are therefore normally distributed, according to the data in table 11. There were no breaches of the assumptions of conventional linear regression because the data set was considered normally distributed, making it appropriate to do an ordinary least square regression analysis.

Table 11

Normality Test

	Kolmogorov-Sminorv			Shapiro-Wilk		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Financial Inclusion	.319	85	.078*	.356	85	.091

*. This is a lower bound of the true significance.

. Lilliefors Significance Correction

4.5.3 Multicollinearity Test

The Variance Inflation Factor (VIF) was employed in the investigation, with a severe multicollinearity threshold of 10. Multicollinearity was indicated by a VIF value larger than 10 or a tolerance value less than 0.1, which prompted corrective measures including variable removal or combination. According to the results presented in table 12, there was no collinearity on Online Banking Services, Digital Lending Platforms, Agency Banking Platforms and Mobile Money Services since none of them had VIF greater than 10 or tolerance limits less than 0.1.

TABLE 12

Multicollinearity

	Collinearity Statistics	
	Tolerance	**VIF**
Online Banking Services	0.348	6.100
Digital Lending Platforms	0.197	5.374
Agency Banking Platforms	0.421	2.647
Mobile Money Services	0.513	3.569

4.6 Inferential Statistics

To ascertain whether there was a relationship between the study variables, inferential statistics were used. In particular, regression analysis was employed to investigate the impact of independent factors on the dependent variable, and correlation analysis was employed to evaluate the direction and strength of correlations between variables.

4.6.1 Correlation Analysis

Table 13 presents the correlation analysis results. The findings indicate a moderate and significant positive correlation between online banking services and financial inclusion among Nairobi County's SMEs, as shown by a Pearson correlation value of 0.392 and a significance level of 0.000. This means that as online banking services improve, SMEs tend to experience higher levels of financial inclusion. The results imply that better access to internet-based banking platforms enables SMEs to conveniently conduct transactions, make payments, and manage accounts remotely, which enhances their participation in the formal financial system. According to Melubo and Musau (2020), online banking provides SMEs with the ability to perform various transactions remotely via the internet, improving convenience and access.

The results further show a moderate and significant positive correlation between digital lending platforms and financial inclusion, with a Pearson correlation value of 0.377 and significance value of 0.000. This implies that improvements in digital lending platforms are associated with higher financial inclusion levels among SMEs. In practical terms, as digital lending services become more accessible and efficient, SMEs are more likely to obtain financing for their operations, growth, or investment activities. Nkatha (2022) observed that digital lending platforms have become instrumental in providing quick, unsecured loans to SMEs, enabling them to meet operational costs or invest in new opportunities.

The results also indicate a weak but significant positive correlation between agency banking and financial inclusion, with a Pearson correlation value of 0.276 and a significance value of 0.011. This means that as agency banking services improve, there is a corresponding, though less pronounced, increase in financial inclusion levels among SMEs. Practically, this suggests that when banks expand their agency networks, SMEs can access financial services more easily,

especially in areas with limited physical bank branches. Kithinji (2017) noted that agency banking enhances financial inclusion by lowering physical barriers and offering services in accessible locations and local languages.

The correlation results reveal a moderate and significant positive correlation between mobile money services and financial inclusion, indicated by a Pearson correlation value of 0.416 and a significance value of 0.000. This means that as mobile money services improve or expand, financial inclusion among SMEs also tends to increase. In practical terms, this suggests that mobile money platforms facilitate easier access to payments, transfers, and credit facilities for SMEs. According to Nyimbiri (2021), increased access to mobile money services substantially improves access to financial services, thus promoting financial inclusion.

TABLE 13

Correlation Results

		Online Banking Services	Digital Lending Platforms	Agency Banking Platforms	Mobile Money Services	Financial Inclusion
Online Banking Services	Pearson Correlation	1				
	Sig. (2-tailed)					
Digital Lending Platforms	Pearson Correlation	.121	1			
	Sig. (2-tailed)	.270				
Agency Banking Platforms	Pearson Correlation	.114	.237	1		
	Sig. (2-tailed)	.299	.029			
Mobile Money Services	Pearson Correlation	.388	.020	.179	1	
	Sig. (2-tailed)	.000	.856	.101		
Financial Inclusion	Pearson Correlation	.392	.377	.276	.416	1
	Sig. (2-tailed)	.000	.000	.011	.000	
	N	85	85	85	85	85

4.6.2 Regression Analysis

The study applied a multiple regression model to examine the relationship between the independent variables and the dependent variable. A 0.05 significance level was adopted for the analysis. The regression output included three key components: the model summary, analysis of variance (ANOVA), and model coefficients. The model summary helped determine the strength of the relationship between digital technologies (online banking services, digital lending platforms, agency banking platforms, and mobile money services) and financial inclusion among SMEs in Nairobi County. The model summary further indicated how much of the variation in the dependent variable could be explained by the independent variables. The R-value was 0.604, as indicated in Table 14, suggesting a moderate connection between digital technology and financial inclusion.

The four digital technology variables incorporated into the study were shown to account for 36.5% of the variability in financial inclusion among SMEs in Nairobi County, according to the R-squared value of 0.365.

TABLE 14

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.604[a]	.365	.333	.715

a. Predictors: (Constant),Online Banking Services,Digital Lending Platforms,Agency Banking Platforms and Mobile Money Services

The study employed Analysis of Variance (ANOVA) to determine whether the model establishing the relationship between the dependent and independent variables was statistically meaningful. The significance level attained was 0.0111, which falls below the 0.05 cutoff, as shown in Table 15. This suggests that the model was a good match for the study because it was statistically significant.

TABLE 15

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.506	4	5.877	11.490	.0111[b]
	Residual	40.915	80	.511		
	Total	64.421	84			

a. Financial Inclusion

b. Predictors:(Constant),Online Banking Services,Digital Lending Platforms,Agency Banking Platforms and Mobile Money Services

Regression coefficient results were used in the study to assess how much changes in the independent variable affect variations in the dependent variable. Online banking services have a positive and significant impact on financial inclusion among SMEs in Nairobi County,Kenya, according to the results shown in table 16. A significant value of 0.024 and a beta value of 0.285

demonstrate this. The findings suggest that the degree of financial inclusion among SMEs in Nairobi County increases by 0.285 units when features of online banking platforms are increased by one unit. The results are consistent with Gakuru et al. (2025) findings that established that by lowering the cost and increasing the accessibility of financial services, online banking promotes financial inclusion.

The results additionally shows that digital lending platforms positively and significantly affects financial inclusion amongst SMEs in Nairobi County,Kenya. A significant value of 0.001 and a beta value of 0.465 demonstrate this. The findings suggest that the degree of financial inclusion among SMEs in Nairobi County increases by 0.465 units when features of digital lending platforms are increased by one unit. The results concurs with Nkatha (2022) who established that digital lending platforms have become instrumental in offering quick, unsecured loans to SMEs thus enabling them to meet operational costs, expand, or invest in new opportunities.

The results further established existence of a positive and insignificant effects of agency banking platforms on financial inclusion amongst SMEs in Nairobi County,Kenya. This is depicted by a beta value of 0.098 and insignificant value of 0.196. The results bear the implications that increasing aspects of agency banking platforms with one unit results to 0.098 units increase in the levels of financial inclusion amongst SMEs in Nairobi County. The results tallies with the findings from Lotto (2016) which established that agency banking increases accessibility and convenience of financial services, thereby promoting financial inclusion among SMEs.

The findings also demonstrated that mobile money services have a positive and substantial impact on financial inclusion among SMEs in Nairobi County,Kenya, as shown by a significant value of 0.003 and a beta value of 0.501. Based on the findings, the degree of financial inclusion among SMEs in Nairobi County increases by 0.501 units when mobile money services are

expanded by one unit. The findings align with Nzyoka (2020) who established that mobile banking services help SMEs become more financially included.

TABLE 16
Model Coefficient

	Unstandardized Coefficients		Standardized Coefficients		
Predictors	**B**	**Std.Error**	**Beta**	**T**	**Sig.**
(Constant)	-0.095	0.594		-0.160	0.873
Online Banking Services	0.285	0.124	0.175	2.293	0.024
Digital Lending Platforms	0.465	0.136	0.213	3.408	0.001
Agency Banking Platforms	0.098	0.075	0.150	1.304	0.196
Mobile Money Services	0.501	0.163	0.181	3.075	0.003

Financial Inclusion

The initial model of the study which comprised of:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where;

Y = Financial Inclusion

β_0= Regression constant or intercept

β_1, β_2, β_3 and β_4 are the independent variables unknown coefficients

X_1 = Online Banking Services

X_2= Digital Lending Platforms

X_3= Agency Banking Platforms

X_4 = Mobile Money Services

ε = Error term

The optimal regression model translates into:

Financial Inclusion in SMEs = -0.095 + 0.501(Mobile Money Services) + 0.465 (Digital Lending Platforms) + 0.285 (Online Banking Platforms) + 0.098 (Agency Banking Platforms)

The optimal model reveals that financial inclusion amongst SMEs in Nairobi County stands at -0.095 units while holding all other factors constant. Mobile money services accounts for the highest effect on financial inclusion followed by digital lending platforms, then online banking services and finally agency banking platforms. However, all the financial technologies considered in the study bear a positive and significant effects on financial inclusion amongst SMEs in Nairobi County.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter provides an outline of the research finding's summary, conclusions, and recommendations. Areas of further studies is also captured in the chapter.

5.2 Summary

The main focus of the study was to establish the effect of digital technologies on financial inclusion amongst small and medium-sized enterprises in Nairobi County,Kenya. The specific digital technologies considered in the study comprised of online banking services, digital lending platforms, agency banking platforms and mobile money services. The study targeted SMEs operating on Nairobi County. The units of observation comprised of either the owners or managers. The tool for data collection was a structured questionnaire containing 5-point Likert scale questions. The data analysis techniques comprised of both descriptive and inferential statistics. Both tables and figures were utilized in presenting the results of the study.

5.2.1 Online Banking Services and Financial Inclusion of SMEs in Nairobi County

The findings of the study revealed that SMEs in Nairobi County generally expressed neutral perceptions regarding the use of online banking services for their business operations. Respondents neither agreed nor disagreed on aspects such as frequent use of online banking, accessibility, and ease of navigation. This indicated that while online banking is available, its adoption and usability among SMEs remain moderate. This suggests that while online banking offers potential benefits for managing business transactions, many SMEs are yet to fully embrace or experience its value. These results align with Gakuru et al. (2025), who noted that online banking holds transformative

potential by lowering costs and enhancing accessibility, thereby creating opportunities for improved financial inclusion.

Despite the neutral perceptions in usage patterns, the study further established that online banking services significantly influence financial inclusion among SMEs in Nairobi County. The findings highlighted a positive relationship, showing that as online banking features and accessibility improve, SMEs' financial inclusion also increases. This implies that enhancing the functionality and user-friendliness of online banking platforms can directly contribute to strengthening SMEs' access to financial services. These findings are supported by Melubo and Musau (2020), who emphasized that online banking allows SMEs to perform various transactions remotely, ultimately fostering greater integration into the formal financial system.

5.2.2 Digital Lending Platforms and Financial Inclusion of SMEs in Nairobi County

The study findings revealed that small and medium-sized enterprises in Nairobi County generally recognized the role of digital lending platforms in providing access to credit, particularly in terms of the ease of obtaining different types of loans online. However, respondents expressed neutrality regarding the affordability of interest rates, flexibility of repayment terms, transparency of approval processes, and adequacy of loan sizes. This indicates that while digital lending platforms have opened up avenues for accessing credit, challenges remain concerning loan conditions and their overall suitability for SMEs' financial needs. These results align with Nkatha (2022), who observed that digital lending platforms are instrumental in enabling SMEs to meet operational costs and pursue growth opportunities.

Further, the results showed that digital lending platforms have a positive and significant influence on financial inclusion among SMEs. The findings suggest that improvements in digital lending services such as fairer terms, affordable rates, and accessible credit facilities can directly

enhance the financial inclusion of SMEs by increasing their ability to access and utilize financial resources for growth. This confirms the role of digital lending as a critical enabler of SME participation in formal financial systems. Similarly, Nkatha (2022) emphasized that the availability of quick and unsecured digital loans supports SMEs in expanding and investing in new opportunities, thereby boosting their financial inclusion.

5.2.3 Agency Banking Platforms and Financial Inclusion of SMEs in Nairobi County

The study findings revealed that respondents generally held neutral perceptions regarding the role of agency banking in enhancing financial inclusion for SMEs in Nairobi County. While they acknowledged the presence of banking agents close to their business premises and the ability of agents to handle large transaction volumes without delays, there was uncertainty about whether agency banking truly improved access to financial services, reliability of transactions, or sufficiency of services for business needs. This suggests that although agency banking has made financial services more accessible geographically, SMEs still have mixed views on its effectiveness in meeting their broader financial needs. These findings are in line with Kithinji (2017), who noted that agency banking helps reduce physical barriers and expand access to financial services, particularly in underserved areas.

Further, the analysis indicated that agency banking has a positive but modest influence on financial inclusion among SMEs. Although it was found to be significantly associated with increased access to financial services, the strength of its effect on improving financial inclusion was not substantial. This implies that while agency banking contributes to accessibility and convenience, other financial technologies or institutional factors may be playing a larger role in driving financial inclusion for SMEs. This observation is consistent with Lotto (2016), who

established that agency banking enhances the availability and convenience of financial services, which in turn supports the broader goal of financial inclusion among small enterprises.

5.2.4 Mobile Money Services and Financial Inclusion of SMEs in Nairobi County

The study findings revealed that SMEs in Nairobi County had mixed perceptions of mobile money services, with most respondents expressing neutral views on their daily use, frequency of transactions, and overall role in supporting business operations. While mobile money was acknowledged as useful for payments, savings, and meeting diverse financial needs, concerns arose around a lack of clarity on transaction fees and the fairness of charges. The results suggest that although mobile money is accessible and somewhat integrated into SME activities, its full potential is limited by cost-related uncertainties and limited awareness, consistent with Nzyoka (2020), who observed that mobile banking services generally enhance financial inclusion despite such challenges.

Further analysis showed that mobile money services have a significant and positive effect on financial inclusion among SMEs in Nairobi County. Enhancing mobile money services was found to strengthen access to financial services, thereby promoting inclusion and supporting the growth of SMEs. This reinforces the view that improving affordability, transparency, and reliability of mobile money platforms could expand financial opportunities for enterprises. These results align with Nyimbiri (2021), who emphasizes that access to mobile money services plays a crucial role in increasing financial participation and inclusion for businesses.

5.3 Conclusion

5.3.1 Online Banking Services and Financial Inclusion of SMEs in Nairobi County

The study concluded that online banking services play an important role in enhancing financial inclusion among SMEs in Nairobi County, despite the fact that their adoption and usability remain

moderate. Although many SMEs expressed neutral perceptions regarding their frequent use, accessibility, and ease of navigation of online banking platforms, the findings established that improvements in functionality and user-friendliness significantly enhance access to financial services, thereby fostering inclusion.

5.3.2 Digital Lending Platforms and Financial Inclusion of SMEs in Nairobi County

The study also concluded that digital lending platforms are instrumental in improving SMEs' financial inclusion by providing access to credit. This is despite to challenges regarding the affordability of interest rates, flexibility of repayment terms, transparency, and adequacy of loan sizes. Nonetheless, the positive and significant influence observed indicates that enhancing the fairness and accessibility of digital lending terms can directly increase SMEs' ability to access and utilize financial resources for growth.

5.3.3 Agency Banking Platforms and Financial Inclusion of SMEs in Nairobi County

In relation to agency banking, the study concluded that while the presence of banking agents has improved geographical access to financial services, SMEs remain uncertain about its effectiveness in meeting their broader financial needs. The results showed that agency banking positively influences financial inclusion, but its impact is relatively modest, implying that while it enhances accessibility and convenience, other digital financial technologies play a stronger role in driving inclusion.

5.3.4 Mobile Money Services and Financial Inclusion of SMEs in Nairobi County

The study concluded that mobile money services significantly contribute to financial inclusion among SMEs in Nairobi County, even though perceptions of their daily use and transaction costs were mixed. While SMEs recognize the usefulness of mobile money in facilitating payments, savings, and business operations, concerns about unclear and sometimes high transaction charges

hinder full adoption. Nonetheless, strengthening the affordability, transparency, and reliability of mobile money services can expand opportunities for SMEs by improving access to essential financial services.

5.4 Recommendations

Based on the findings, it is recommended that commercial banks and financial service providers enhance the usability and functionality of online banking platforms to make them more accessible, user-friendly, and SME-oriented. This could involve simplifying navigation features, integrating customer support systems, and offering training sessions for SMEs to build confidence and promote more frequent use, which would strengthen their financial inclusion.

Based on the findings, digital lending platforms should focus on improving the affordability and transparency of their loan products by offering flexible repayment terms, reducing interest rates where possible, and ensuring clear communication of all lending conditions. Such measures would not only enhance trust among SMEs but also expand their access to credit facilities that support sustainable business growth and financial inclusion.

Based on the findings, banking institutions should strengthen agency banking by expanding agent networks, equipping them with broader financial services beyond basic transactions, and ensuring agents are adequately trained to meet SMEs' diverse needs. This would improve SMEs' confidence in agency banking as a viable channel and enhance its contribution to financial inclusion, particularly in areas where traditional banking infrastructure is limited.

Based on the findings, mobile money service providers should review and standardize their transaction costs while increasing transparency on charges to encourage broader adoption among SMEs. In addition, efforts to strengthen the reliability and security of mobile money platforms

would promote their wider use in facilitating payments, savings, and other financial activities, thereby significantly advancing SMEs' access to essential financial services and deepening financial inclusion.

5.5 Research Areas for Further Studies

The main focus of the study was on digital technologies and financial inclusion amongst SMEs in Nairobi County. The study thus recommends another study in economic sectors where financial inclusion is limited. Additionally, the digital technologies considered in the study comprising of online banking services, digital lending platforms, agency banking platforms and mobile money services accounts for 36.5% of the variation in financial inclusion among SMEs in Nairobi County. There is also a need for another study to factor in other indicators of financial technologies not captured in the study and accounting for 63.5%.

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APPENDICES

Appendix 1 Introduction Letter

Dear Respondents,

REF: DATA COLLECTION

I'm a KCA University master's student working on a Master's Degree in Commerce (Finance and Economics). As part of my academic requirements, I am required to do a project. My research topic is on ***"DIGITAL TECHNOLOGIES AND FINANCIAL INCLUSION AMONGST SMALL AND MEDIUM-SIZED ENTERPRISES IN NAIROBI COUNTY,KENYA".*** A questionnaire that aims to gather responses to questions formulated on the subject of the study is attached. To the best of your knowledge, please fill the questionnaire by responding to the formulated statements. Your provided information will be handled with the highest secrecy and used exclusively for academic purposes. You were provided with a copy of the research findings upon request.

Thank you for your cooperation in advance.

Yours Sincerely,

Olutatwa Martha Katibi

Student

Appendix 2 Informed Consent

I am Olutatwa Martha Katibi, pursuing a Masters Degree of Science in Commerce (Finance and Economics) At KCA University. I am conducting a study on Digital Technologies And Financial Inclusion Amongst Small And Medium-Sized Enterprises In Nairobi County,Kenya. I take this opportunity to invite you to take part in my study. The attached questionnaire requires you to provide responses to various aspects of digital technologies on how they affect the level of financial inclusion amongst SMEs. It will take you less than 20 minutes to respond to the formulated questions in the questionnaire. Kindly remember that you are not supposed to indicated your name or that of your business in any part of the questionnaire. All the information that you provide will be confidentially kept by myself and will not be revealed to any other party. Filling of the questionnaire is on a free and voluntary basis and the study has no connection to licensing or regulatory compliance, and will not influence any business decisions or services. Kindly remember that you can withdraw any time in the course of the study and there will be no penalties.

Participant

"All of my questions and concerns about this study have been addressed. I choose, voluntarily, to participate in this research project. I certify that I am at least 18 years of age.

....

Signature of participant Date

.....

Print name of investigator

.....

.....

Signature of investigator Date

Appendix 3 Questionnaire

Section A: Basic Information

1. Kindly indicate your gender
   i. Male [ ]
   ii. Female [ ]

2. Kindly your job designation
   i. Owner [ ]
   ii. Manager [ ]

3. Number of years worked in the business
   i. Less than 1 year [ ]
   ii. 1-2 years [ ]
   iii. 3-4years [ ]
   iv. 5-6years [ ]
   v. Above 6 years [ ]

4. Kindly indicate your highest level of education

   i Certificate [ ]
   ii Diploma [ ]
   iii Degree [ ]
   iv Postgraduate [ ]

5. Number of employee in the business

   i Less than 10 [ ]
   ii Between 10-20 [ ]
   iii Between 21-30 [ ]
   iv Between 31-40 [ ]
   v Above 40 [ ]

Section B: Online Banking Services

The following statements relates to Online Banking Services. Kindly rate how much you agree or disagree with the statements on a scale of 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree.

Online Banking Services	**1**	**2**	**3**	**4**	**5**
I frequently use online banking services for my business transactions.					
I access my business bank account online at least once a week					
Online banking helps me manage my business finances regularly					
My bank provides all the necessary services for my business through online banking					
I use online banking to make payments to suppliers and employees					
It is easy for me to access online banking services using my mobile device or computer					
I find the online banking platform user-friendly and simple to navigate					
I rarely encounter technical issues when using online banking services					

Section C: Digital Lending Platforms

The following statements relates to Digital Lending Platforms. Kindly rate how much you agree or disagree with the statements on a scale of 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree.

Digital Lending Platforms	**1**	**2**	**3**	**4**	**5**
The repayment terms offered by digital lending platforms are flexible and manageable for my business.					
The interest rates associated with repayment on digital loans are affordable.					
My business has experienced a high success rate when applying for loans through digital platforms.					
The criteria for loan approval on digital lending platforms are fair and transparent.					

The loan sizes accessed through digital lending platforms meet the financial needs of my business.					
I can easily access multiple types of business loans via online banking platforms.					
Online banking services have improved my business's ability to access credit facilities.					

Section D: Agency Banking

The following statements relates to Agency Banking. Kindly rate how much you agree or disagree with the statements on a scale of 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree

Agency Banking	**1**	**2**	**3**	**4**	**5**
There are banking agents located close to my business premises.					
The proximity of banking agents has improved my access to financial services.					
I can rely on banking agents to carry out financial transactions without issues.					
Transactions done through banking agents are usually successful and error-free.					
Banking agents are able to handle high volumes of transactions without delays.					
My business frequently uses banking agents to carry out large cash transactions.					
The services offered by banking agents are sufficient for my business needs.					

Section E: Mobile Money Services

The following statements relates to Mobile Money Services. Kindly rate how much you agree or disagree with the statements on a scale of 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree

Mobile Money Services	**1**	**2**	**3**	**4**	**5**
My business uses mobile money services on a daily basis.					
Mobile money is the most frequent mode of transaction for my business.					

The frequency of mobile money usage in my business has increased over the past year.					
I clearly understand the transaction fees associated with using mobile money services.					
Mobile money service providers are transparent about their charges.					
The fees charged for mobile money transactions are fair and predictable.					
I use mobile money services to pay suppliers and business expenses.					
I use mobile money for saving purposes					
Mobile money services support a wide range of financial needs for my business.					

Section F: Financial Inclusion

The following statements relates to Financial Inclusion. Kindly rate how much you agree or disagree with the statements on a scale of 1 to 5, where 1 means strongly disagree, 2 means disagree, 3 means neutral, 4 means agree, and 5 means strongly agree

Financial Inclusion	**1**	**2**	**3**	**4**	**5**
I can easily access financial services near my business location					
I have access to digital platforms to interact with financial service providers					
The requirements for accessing financial services are affordable and achievable for my business					
Financial institutions offer services that are tailored to the needs of SMEs					
My business regularly uses digital financial services for transactions					
I use digital platforms to manage my business finances					
The financial services I use are reliable and meet my business needs effectively					
The fees and charges for financial services are reasonable and transparent					
Digital financial services are user-friendly and efficient					

Thank you

Appendix 4 Ethical Clearance Certificate

Thika Road, Ruaraka
P.O. Box 56808-00200 Nairobi Kenya
Pilot Line: +254 20 8070408/9

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

KCA UNIVERSITY SCIENTIFIC & ETHICS REVIEW COMMITTEE

REF: KCAU/SERC/SOB0163 Date: 13th JUNE 2025

TO: MARTHA KATIBI OLUTATWA (23/03049)

Dear Sir/Madam,

RE: DIGITAL TECHNOLOGIES AND FINANCIAL INCLUSION AMONGST SMALL AND MEDIUM-SIZED ENTERPRISES IN NAIROBI COUNTY, KENYA

This is to inform you that KCA University Scientific Ethics Review Committee (KCAUSERC) has reviewed and approved your above research proposal. Your application approval number is *KCAUSERC/SOB0163*. The approval period is *16th June 2025 – 16th June, 2026.*
This approval is subject to compliance with the following requirements;

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

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

Yours sincerely,

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

Advancing Knowledge, Driving Change

Appendix 5 NACOSTI Certificate

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 345988

Date of Issue: 30/June/2025

RESEARCH LICENSE



This is to Certify that Miss.. Martha Katibi Olutatwa of KCA University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: DIGITAL TECHNOLOGIES AND FINANCIAL INCLUSION AMONGST SMALL AND MEDIUM-SIZED ENTERPRISES IN NAIROBI COUNTY, KENYA for the period ending : 30/June/2026.

License No: NACOSTI/P/25/4175928

345988

Applicant Identification Number

Deputy Director
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix 6 List of SMEs

1 Nairobi Metal Works
2 Delta Fabricators Ltd
3 Urban Soap Co.
4 City Plastics
5 Apex Tools Ltd
6 QuickTech Assemblers
7 Bright Minds Academy
8 CBD Wellness Clinic
9 Nairobi Arts Theatre
10 Elite Dental Care
11 Midtown Hotel
12 Mama's Kitchen
13 Safari Inn
14 Urban Bites Café
15 CBD BnB Suites
16 Café Aroma
17 Royal Treat Restaurant
18 Downtown Grill
19 Mavazi Stores
20 CBD Electronics
21 Alpha Traders
22 Nairobi General Supplies
23 SuperMart CBD
24 CompuCity Ltd
25 Urban Wear Kenya
26 Mega Households Centre
27 QuickBuy Traders
28 Shoppers Hub
29 Daily Needs Store
30 Capital Bazaar
31 House of Shoes
32 Fashion Forward
33 Uptown Textiles
34 Nairobi Phones & Accessories
35 E-Market Electronics
36 City Cosmetics Centre
37 Trendy Boutique
38 Brightlight Lighting Centre
39 Corner Tech Dealers
40 Urban Baby Shop
41 CBD Value Mart
42 Smart Deals Centre
43 Nairobi Hardware Traders
44 Royal Bookshop

45 Zawadi Gift Shop
46 QuickFix Mobile Spares
47 Elite Optical Supplies
48 Prime Stationers
49 Classic Jewelry Centre
50 Apex Mobile Hub
51 CompuMart Nairobi
52 The Shoe House
53 Electra Wholesale Centre
54 Kingz Phone World
55 Trendy Bags and Accessories
56 Elegant Living Interiors
57 Viva Superstore
58 StarTech Gadgets
59 Jambo Kitchenware
60 Fashionista's Point
61 Grand Electronics
62 Downtown Home Décor
63 Smart Choice Traders
64 The Dress Code Boutique
65 Prestige Book Centre
66 Max Value Store
67 The Craft Basket
68 Sunny Beauty Supplies
69 Best Option Traders
70 Jirani Grocers
71 CBD Couriers
72 Express Logistics Ltd
73 City Trans Services
74 FastLane Storage
75 Link Communications
76 Elite Consult Ltd
77 Vision Tech Solutions
78 City Architects
79 LegalEdge Associates
80 BrightAccounts
81 SwiftWeb Designers
82 Urban Surveyors Ltd
83 Prime HR Solutions
84 Nairobi Tech Lab
85 Insight Research Group
86 Apex Engineering Services
87 CBD Creatives Hub
88 Compliance Experts Ltd
89 ProScan Diagnostics
90 StratLaw Consultants

91 CBD Agro Supplies
92 Urban Farm Tools
93 Fresh Harvest Distributors
94 GreenTech Forestry Ltd
95 Nairobi Organics
96 Umoja Metal Artworks

Source: Nairobi City County Directorate of Trade Licensing (2024)