THE INFLUENCE OF FINANCIAL INNOVATIONS ON FINANCIAL INCLUSION: EVIDENCE FROM REGULATED NON-WITHDRAWABLE DEPOSIT-TAKING SACCOS IN NAIROBI COUNTY, KENYA.

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DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this university or any other university. To the best of my knowledge and belief, this thesis contains no material previously published or written by another person except where due reference has been made in the thesis itself.

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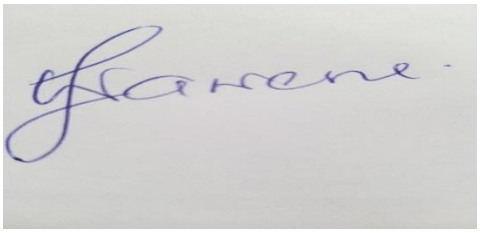
Signature …  Date …20/5/2025…….

ABSTRACT

Financial inclusion remains a critical issue in Kenya, with part of the population lacking access to formal financial services, particularly in rural areas and among marginalized groups. Regulated non-WDT SACCOs play a crucial role in bridging this gap by extending financial services to the underserved segments. However, these SACCOs operate in an increasingly competitive financial landscape, facing pressure from banks, microfinance institutions, and fintech providers. To remain relevant, expand their market share, and effectively contribute to the financial inclusion agenda, they must adopt innovative financial solutions and strategies. This study investigated the influence of financial innovations specifically product, process, technological, and marketing innovations on financial inclusion within these SACCOs in Nairobi County in the year 2024. Additionally, it explored the moderating effect of financial regulatory frameworks. Using a positivist research philosophy and a cross-sectional descriptive and correlational research design, data were collected from 112 respondents across regulated non-WDT SACCOs in Nairobi County through structured questionnaires. The findings indicated a strong positive relationship between financial inclusion and both product and marketing innovations, while technological and process innovations showed comparatively weaker associations. Regarding the moderating variable, although regulatory frameworks are generally perceived as supportive, they did not significantly influence the relationship between innovations and financial inclusion within the context of this study. These findings give valuable insights for policymakers, regulators, and SACCO managers, emphasizing the need to balance financial innovations with regulatory requirements. Strengthening financial innovations while ensuring regulatory compliance can enhance financial inclusion, promote economic empowerment, and support sustainable development in Nairobi County and beyond.

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DEDICATION

To God Almighty, for His abundant grace and favor throughout this journey, and for giving me the strength to give nothing less than my best.To my dear parents, Mr. Nebert Mwika Lumire and Mrs. Susy Makonjo Mmasava, whose pride and joy in my accomplishments I feel deeply. Your unwavering love and support have meant the world to me. To my beloved sisters; Brenda Nebert's, Sandra Lumire, and Tracey Mideva, and nephew Archie Jakari, I hope I've set a benchmark that inspires you to reach even greater heights. May my journey encourage you to pursue your dreams fearlessly. Thank you all for being my pillars of strength, and for your prayers, patience, and understanding. To my Strathmore colleagues, those with whom I have shared this path, thank you for the camaraderie and encouragement that carried us through. And to the entire Strathmore fraternity, thank you for shaping me into the person I am today.

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LIST OF ABBREVIATIONS

ATM - Automatic Teller Machines

CBK – Central Bank of Kenya

CEO – Chief Executive Officer

DT - Deposit Taking SACCOs

FinTech - Finance and Technology

MFI - Micro Finance Institutions

Non-WDT SACCOs – Non-Withdrawable deposit taking SACCOs**.**

SACCO - Savings and Credit Cooperative Organizations

SASRA - SACCO Societies Regulatory Authority

USSD - Unstructured Supplementary Service Data

CHAPTER ONE: INTRODUCTION.

1.1 Background of the Study

Policymakers, academics, and international organizations such as the World Bank and the United Nations have recently shown great interest in financial inclusion. To underscore its importance, the United Nations has designated financial inclusion as a contributor to seven (7) out of the seventeen (17) Sustainable Development Goals (World Bank, 2018). Ozili (2020) notes that the main reasons behind the recent attention to financial inclusion are, One, it is regarded as a major strategy to be used to achieve the United Nations Sustainable Development Goals; secondly, it has been shown to enhance the levels of social inclusion in many societies, third, it has the potential to lower poverty levels to a desired minimum and finally, financial inclusion offers additional socio-economic benefits to given societies.

Despite the emphasis on fostering financial inclusion and recognizing its significance in society, the issue of financial exclusion continues to persist. The worldwide population is believed to be 76% banked, while 24% or 1.4 billion individuals are considered unbanked (Demirgüç-Kunt et al., 2022). According to this study, most of those excluded from the formal financial sector are women, poor adults, and less educated adults. The unbanked population cited a lack of funds, travel time to the closest financial institution, and inadequate documentation as the main reasons they do not have an account (Demirgüç-Kunt et al., 2022).

In developing economies, only 71% of the population is financially included. In Sub-Saharan Africa, the lack of a mobile phone was cited as the main reason 35% of unbanked adults do not have a mobile money account. According to a report by EY, the factors contributing to financial exclusion in society include insufficient education, the absence of valid identification, geographical obstacles, costly financial products, and the absence of a credit history (Ernst & Young, 2022). To ensure financial inclusion, the report suggests innovative strategies such as customization of offerings, use of innovative channel strategies, and employing creative risk mitigation and credit profiling techniques.

Kenya is not an exception regarding financial exclusion; financial access gaps exist, although gradually narrowing from 74% exclusion rates in 2006 to 17.4% in 2016. According to the Financial Sector Deepening (FSD) study, in 2022, 11.6% of Kenya's population lacked access to any official or informal financial services, particularly in rural areas. Nairobi (95%), Nyeri (93.8%), Murang'a (92.8%), Kirinyaga (92.2%), and Kiambu (91.8%) are financially included, while Garissa (60.7%), Turkana (60.3%) and West Pokot (57.7%) are the least financially included areas (FinAccess, 2022). This is an area of concern that should draw the attention of industry players. SACCOs have significant potential to confront this challenge by playing key roles in mobilizing additional savings and extending credit, particularly to segments that do not utilize banking services and low-income groups.

Given the significant potential inherent in SACCO to address financial inequality gaps, it confronts challenges emanating from commercial banks and other financial institutions. According to Ncurai et al. (2022), these challenges are primarily posed by members of a new wave of digital disruptors who leverage technological advancements, customer behavior changes, and the accessibility and availability of data facilitating the creation of innovative and user-friendly services alternative to those provided by the incumbents. D'Emidio (2015) asserts that SACCOS must embrace innovation or risk being left behind. To harness these opportunities, SACCOs must learn to tap into the innovation potential afforded by four evolving trends: heightened customer expectations, the proliferation of the mobile internet and big data utilization and advanced analytics, and the emergence of the Internet of Things (IoT).

Kenya's SACCO sector has embraced innovation by adopting various innovations like service delivered through USSD code mobile connectivity, internet/app-based connectivity, use of ATMs, Pesalink integration, and SACCO agencies (SASRA 2022). This can be evidenced by a study by Moki et al. (2019), who noted that financial innovation strategies are significant in increasing the financial performance of SACCOs, hence the need to invest in financial innovation strategies to reduce costs and increase efficiency in the sector. On the contrary, according to Mutua (2018) and Doh (2020), agency banking is

a tactic that financial institutions employ to maximize profits because of its low setup and operating costs in rural areas. As such, it does not promote financial inclusion.

1.1.1 Financial Innovation

Merton (1992) defines financial innovation as the introduction of new financial instruments and services, new organizational forms, and more advanced and extensive financial markets. It also includes technological advancements that improve the existing trading, payment methods and users' access to information. Building on this definition, Ho (2006) further alludes that an exemplary financial innovation is one in which financial services and products, new organizational models, or new processes either reduce costs and risks or fulfill participants' requirements in the financial systems. Financial innovations empower businesses to enhance their proficiency in risk management, bolster their competitive advantage, meet customer needs, and align with market requirements. This perspective is corroborated by Mosongo et al. (2013), who observes that financial innovation lowers the transaction costs incurred in transferring funds from lower-yielding investments to those with higher yields, which is a strategic move by market participants to minimize risk while maximizing returns.

Financial innovation plays a major role in a firm's financial performance Kwamboka (2018), firms attaining a sustainable competitive advantage, Achieng (2021), poverty alleviation, Avais (2014), global economic development Mollaahmetoğlu & Akçalı, 2019), and financial deepening (Misati et al.., 2022). Achieving economic growth is also largely dependent on financial innovations. Nyaga (2015) demonstrates that innovative ideas stimulate economic growth by opening new markets and raising productivity levels, increasing the effectiveness of financial intermediation, which helps investors get a higher risk-adjusted rate of return and gives borrowers access to more cash at a reduced cost.

Financial innovation manifests in diverse forms and categories. According to Nuryakin (2018), innovation can be classified into three primary categories: product, technological, and process. Gamal (2011) observes that service, product, business model, and process innovation are all components of corporate innovation. While Davenport (2013) breaks

down corporate innovation into incremental, disruptive, and radical innovations, the OEDC Oslo manual (2015) recognizes and categorizes innovation into four types: organizational, process, product, and marketing innovations.

This study examines financial innovation in terms of product innovation, defined by Gault (2018, p. 619) as introducing a new or significantly altered product to its characteristics or intended uses. It also explores process innovation, as described by Khan (2018), involving changes in production and service delivery systems to enhance efficiency, resulting in reduced production costs and increased output. Technological innovations as defined by OECD (2013) as the introduction of new products or processes or significant technological changes to existing ones, and lastly, marketing innovations, defined by Khan (2018) as the use of new or improved promotional efforts to connect with customers, aiming to drive demand through awareness, product distinctiveness, and brand recognition.

Schindler (2017) identifies the drivers of financial innovation as a blend of technology, regulation, innovation spirals, changes in the macroeconomic landscape, and supply factors made up of regulation and demographics. Similarly, Páramo & Manuel (2017) note that the disruption shift in banking is characterized by radical changes in the consumption and savings patterns of the new generations, while the supply side is characterized by greater competition and technological changes affecting the quality, quantity, and price of the financial services. The SACCO sector innovates to enhance accessibility to its financial services, counter competition from numerous credit institutions, and integrate with the national payment systems infrastructure (SASRA 2022).

The SACCO sector in Kenya has embraced innovation by collaborating with commercial banks, payment service providers, and third-party FinTechs to implement alternative channels for financial services. As highlighted by Peter Njoroge, CEO of SASRA, various innovations adopted by SACCOs in 2022 include financial services delivered through USSD code mobile connectivity (utilized by 209 regulated SACCOs) and internet/app-based connectivity (utilized by 103 regulated SACCOs). Additionally, the use of ATMs has been employed by 34% of DT-SACCOs, Pesalink integration by 13.64% of regulated SACCOs, and SACCO agencies by 36 DT-SACCOs (SASRA, 2022).

In identifying the relationship between financial innovation and financial inclusion, Misati et al. (2022) note that independent of the financial indicator employed, there is a unidirectional link between financial innovation indicators and financial depth as well as between financial depth and economic growth. These findings contradict Doh (2020) and Mutua (2018), who note that agency banking does not lead to financial inclusion. This leads to the conclusion that financial institutions have adopted the agency banking model to lower operating costs by offering banking services to locations that would have been difficult to access because of low or non-existent infrastructure or expensive branch establishment expenses. This raises the question of whether financial innovations are aimed at increasing financial inclusion or maximizing profits. What is the driving force behind the decision to innovate?

1.1.2 Financial Inclusion

According to the World Bank Financial Inclusion Overview (2022), financial inclusion is a state where individuals and businesses have access to valuable and reasonably priced financial products and services that meet their transactional requirements. These products and services include insurance, credit, savings, and payment processing, and they are all provided in a friendly and sustainable manner. Financial inclusion is recognized as a key catalyst for economic development since it promotes fair access to finances, opening doors to chances of employment and business growth.

Allen (2016) observes that financial inclusion aims to guarantee that everyone, especially the underprivileged population, has access to formal basic financial services provided by a formal financial sector. Mas (2009) concurs with this perspective, emphasizing that financial institutions should strive to be all-inclusive by structuring markets that offer clear incentives, benefit all stakeholders, and encourage their active participation in financial services and products. For financial inclusion to be achieved, financial institutions need to be aware of the factors influencing the adoption of new products. This will enable them to create an environment wherein technological advancements deliver tangible value to customers (Kolodinsky, 2009).

Conversely, financial exclusion leads to income disparities and sluggish economic growth. This phenomenon occurs because, without inclusive financial systems, individuals with limited financial means must rely on their meager savings for investments in education or entrepreneurship. Similarly, small enterprises find themselves constrained by their limited earnings when pursuing promising avenues for growth (Demirgüç-Kunt & Klapper, 2012). Evaluating the degree of financial inclusion realization is essential to getting a thorough understanding of financial inclusion and its importance. As per the 2021 World Bank Global Findex, 76% of adults had an account at a bank or a regulated institution such as a credit union, Microfinance institution, or mobile money service provider. This represents a 50% increase between 2011 and 2021, from 50% to 76%. But according to the United Nations Secretary General's Special Advocate report, financial exclusion still exists, most pronounced among historically marginalized groups such as the impoverished, women, smallholder farmers, and Small and Medium enterprises (MSMEs) (United Nations Secretary General's Special Advocate, UNSGSA, 2022).

The availability of financial services has significantly improved in African countries. Across Africa and the entire COMESA region, mobile money and agent banking are primary catalysts for financial inclusion, extending their reach to millions of previously unbanked individuals and businesses. These innovations offer affordable, instant, and dependable services encompassing payments, savings, credit, insurance, and more (Njoroge, 2021). Mobile money has empowered individuals who might otherwise have remained unbanked, enabling secure, cost-effective, and dependable ways of transacting bill payments and money transfers. The adoption and utilization of mobile money varies by region, with 16% in Sub-Saharan Africa, 20% in Eastern and Central Africa, and 3% in North Africa, while East Africa has the highest rates with 35% (Demirgüç-Kunt & Klapper, 2012).

In Kenya, the trajectory of financial inclusion is steadily upward, expanding to 83.7 percent in 2021 from 82.9 percent in 2019, largely propelled by technological advancements. However, it is worth noting that financial exclusion among adults slightly increased to 11.6 percent from 11.0 percent in 2019. An interesting trend is the decline in using and adopting informal sources for accessing financial services, dropping from 6.1% to 4.7% (FinAccess,

2021). This points to an increased formality in the financial sector, which implies that there has been an improvement in safety and regulation in the sector. The report, however, remains unclear on whether the increase in financial inclusion is primarily attributed to improved access to credit, insurance, savings, or payment services. It is also not clear as to which financial institution is the most contributor to financial inclusion in Kenya.

Financial inclusion indicators serve as valuable tools for policymakers, aiding them in assessing the state of financial inclusion, establishing inclusion targets, pinpointing obstacles to financial access, formulating policies, and gauging the effectiveness of these policies. As the World Bank (2015) outlined, the four main indices of financial inclusion are Impact, Quality, Usage, and Access.

1.1.3 Financial Innovation and Financial Inclusion in Kenya.

Financial inclusion is crucial to achieve an all-inclusive political, social, and economic development in a nation (Mutua, 2016). Kenya has taken substantial measures to raise its degree of financial inclusion. Aligned with the goals outlined in Vision 2030, Kenya aims to create a robust and globally competitive financial sector capable of creating employment opportunities and facilitating substantial savings to support the country's overall investment requirements. Under its vision, the Kenyan government aims to reduce the proportion of its population lacking access to financial services from 85% to below 70%. Furthermore, savings rates are anticipated to increase from 12% to 30%, while bank deposits will grow from 44% to 80% of total GDP (Government of Kenya, 2007).

To meet the financial inclusion targets in Vision 2030, the Financial Inclusion Fund, alias the Hustler Fund, was established in 2022 by the Kenyan government. Its main objective is to reduce and buffer financial shocks to the informal sector, which employs 80% of the labor force and generates more than 33% of the country’s GDP. The key tenets of the fund include affordable credit, competitive savings and pension plans, access to affordable housing solutions, all-inclusive insurance options, market connections, and financial literacy (The Financial Inclusion Fund, 2022).

Acknowledging the Kenyan financial sector's pivotal function in enhancing financial inclusion and achieving Vision 2030 is imperative. Consequently, financial institutions continually innovate to facilitate the accessibility and usage of their products and services. Merton (1992) states that financial innovations within the financial sector are the main driving forces toward greater economic efficiency. These innovations strengthen the efficiency of monetary policy transmission mechanisms, facilitate growth in the credit market, and simplify the administration of monetary policies. Thus, it becomes evident that innovation is of paramount importance in the evolution of financial systems.

Kenya's financial system has witnessed a significant surge in financial innovation, leading to heightened levels of financial inclusion. Wambui (2010) notes that the primary drivers of innovation include globalization, increased accessibility to electronic delivery channels, and enhanced ICT platforms. Notable financial innovations in the banking sector include mobile banking, agency banking, debit card payments, credit card payments, internet banking, and automatic teller machines (Mutua, 2018). The proliferation of mobile phones has paved the way for the introduction of mobile money, which facilitates access to financial products/ services. This is by using mobile money transfer services and mobile banking. Agency banking, used by banks unable to set up physical branches in certain areas, has empowered financially underserved populations by granting them access to financial services and products.

Moki et al. (2019) state that DT SACCOs have competitively positioned themselves in the market by adopting technology to provide services such as cash deposits, withdrawable cash, and account opening for unbanked individuals. Additionally, they have directed more resources to Internet and mobile banking than Automatic Teller Machines (ATMs), enabling swift access to information and services for their members. Financially viable SACCOs are more inclined to adopt financial innovations (Njenga et al., 2015). This has led to DT-SACCOs incorporating innovative products like credit cards, feature codes, M-pesa, and debit cards and creating a platform for e-commerce. Consequently, this has improved service delivery, enhanced efficiency, and reduced operational costs (Sum & Memba, 2016). DT-SACCOs strategically employ financial innovation to seek higher returns while minimizing risks. This is exemplified by DT-SACCO's in Kenya

transitioning from a common bond to an open bond structure to attract deposits from a larger client or member base, as observed by (Nekesa & Olweny, 2018).

The advent of financial innovation presents challenges for both users and the institutions introducing these products. As highlighted by Wambui (2010), the principal challenges associated with adopting innovation include customers' poor response towards financially innovated products/ services and the emergence of similar products by fellow competitors in the market. Additional obstacles encompass the high costs associated with launching new products, governmental restrictions, bureaucratic processes that often necessitate numerous approvals before innovation can proceed, employee resistance, capital shortages, and ineffective marketing strategies. These challenges collectively pose barriers to achieving financial inclusion within an economy.

1.1.4 The SACCO Industry in Kenya.

Savings and Credit Co-operative Societies (SACCOs) in Kenya serve the primary goal of pooling savings and providing credit or loans to its members, backed by their Savings and guarantors (SASRA, 2021). According to Njenga and Jagongo (2019), SACCOs have evolved to address the basic human necessity of saving and borrowing without exposing oneself to undue risks or relinquishing excessive control to a lender. The SACCO subsector in Kenya, among other classifications, is classified into deposit-taking SACCOs (DT-SACCOs) and non-withdrawable deposit-taking SACCOs (non-WDT SACCOs), both overseen by the Sacco Societies Regulatory Authority (SASRA).

DT- SACCCOs function like commercial banks, providing front office services activities (FOSA) for members to deposit and withdraw cash. In contrast, non-WDT SACCOs focus on using member savings as collateral for credit, with deposits refundable upon leaving the SACCO; their services are referred to as Back-office service activities (BOSA) (SASRA, 2021). According to Wanyama (2009), the SACCO Societies Act of 2008 was introduced to allow the SACCO Societies Regulatory Authority (SASRA) to regulate and develop DT SACCOs by licensing, regulating, and supervising. Previously, non-WDT SACCOs fell under the Cooperative Act Cap 490 and were supervised by the Department of Cooperatives under the Ministry of Industrialization and Enterprise Development.

However, in 2020, SASRA's jurisdiction expanded to include the oversight of specific non-deposit-taking businesses referred to as Non-withdrawable Deposit-taking SACCOS. The specified non-DT businesses are defined by Regulations 2020 as follows: non-deposit businesses where the total amount of non-withdrawable deposits from members equals or surpasses one hundred million shillings; non-DT businesses where the SACCO used digital or other electronic payment platforms to mobilize membership and subscription to its share capital; and non- DT businesses where the SACCO mobilizes membership and subscription to its share capital from individuals who are otherwise resident outside of the nation (SASRA 2022).

SASRA does not regulate non-specified non-deposit-taking SACCO businesses (deposits below Kshs 100 million), Transport Cooperatives (popularly but erroneously referred to as Matatu SACCOs), Housing Cooperatives, Investment Cooperatives, Consumer Cooperatives, and Marketing/Production Cooperatives. SASRA's responsibility entails licensing, overseeing, and regulating SACCO management operations within Kenya. Its regulatory framework encompasses the Kenyan constitution, the SACCO Societies Act No. of 2008, the SACCO Societies (Deposit-taking business) Regulations of 2010 and 2020, and the Proceeds of Crime and Anti-Money Laundering Act of 2009 (Republic of Kenya, 2008).

In line with its mandate, in 2022, the authority oversaw 359 regulated SACCOs, of which 183 were non-WDT SACCOs, with 132 operating in Nairobi and 176 being DT SACCOs (SASRA 2022). The total asset portfolio of the regulated SACCOs for 2022 was 890.30 billion, with the DT SACCOs accounting for 85.76% (763.50 billion) and the non-WDT the remaining 14.37% (SASRA 2022). This gap can be attributed to the fact that DT-SACCOs have long been regulated, enabling them to improve the mobilization of membership driven by confidence created by regulation. DT- SACCOs have also diversified their product and service offerings, attracting more members. The total assets and deposits for the non-WDT-SACCOs grew by 8.90% and 9.20%, respectively, while the gross loans and net advances for the non-WDT-SACCOs grew by 7.74% and 6.37%, respectively, in 2021. The exceeded growth rate in deposits compared to the growth rate in

loan advancement indicates higher savings mobilization than the demand for loans, which may indicate high liquidity in the non-WDT SACCOs.

1.1.5 SASRA's Regulatory Framework for Non-WDT SACCOs

The licensing process for specified non-WDT SACCOs under the 2020 regulations requires the submission of a comprehensive application. Licenses are subject to annual renewal, and SASRA holds the authority to deny or revoke a license if a SACCO fails to comply with the set standards or engages in prohibited activities. A key element of compliance is the maintenance of adequate capital, which includes meeting core capital thresholds based on a percentage of total assets and maintaining institutional capital to support long-term sustainability. SACCOs are expected to proactively manage their capital levels and address any deficiencies immediately to remain compliant with regulatory requirements (SASRA Regulations, 2020).

SASRA Regulations (2020) also place a strong emphasis on governance and risk management. SACCOs are required to have a structured board of directors with clearly defined roles and qualified members who meet fit and proper criteria. The formation of specialized board committees such as those for audit, credit, education, and risk management is mandated to enhance oversight. SACCOs must also implement robust risk management frameworks covering internal controls, audits, financial and IT-related risks, and business continuity. On the operational side, they must adhere to strict standards in lending, investment, and financial reporting. This includes preparing IFRS-compliant financial statements, filing quarterly returns, and communicating transparently with members.

The SASRA Regulations (2020), include important provisions that support financial innovation and promote financial inclusion within Kenya's cooperative sector. Recognizing the growing role of technology in financial services, the regulations specifically address how SACCOs can adopt digital tools and platforms while maintaining regulatory compliance and protecting member interests.

One of the most notable aspects of the regulations is the inclusion of SACCOs that offer digital financial services. This includes SACCOs that provide loans, savings, or related services through mobile applications, USSD platforms, websites, or other digital channels. By bringing these SACCOs under regulatory oversight, the regulations create a framework that supports innovation while ensuring that digitally delivered financial services are safe, transparent, and trustworthy. This approach encourages SACCOs to expand their reach through technology without compromising the standards of good governance and financial prudence (SASRA Regulations, 2020).

The licensing requirements introduced by the regulations also support innovation. SACCOs that engage in digital or virtual credit facilities are required to apply for licenses, which validates their operations and gives them a formal status within the financial ecosystem. This process promotes confidence among members and investors, allowing SACCOs to grow and attract support while maintaining a commitment to regulatory obligations. At the same time, the licensing process ensures that new and emerging players in the SACCO space are evaluated for their capacity to deliver secure and sustainable services, even when operating through unconventional or tech-based models (SASRA Regulations, 2020).

Outsourcing is another area where the regulations foster innovation. SACCOs are permitted to outsource key services, such as IT infrastructure, core banking systems, mobile money integration, and cloud-based platforms, provided they maintain adequate oversight and implement risk management practices. This allows SACCOs especially smaller or newly formed ones to access modern technology and professional services without needing to build such capacity in-house. By enabling collaboration with fintech companies and service providers, the regulations facilitate the adoption of advanced tools that improve efficiency, service delivery, and scalability (SASRA Regulations, 2020).

In addition to enabling innovation, the regulations take significant steps to protect consumers and promote financial literacy. SACCOs are required to treat members fairly, provide clear information about their services, and establish mechanisms for resolving complaints. These rules are especially important in the digital space, where members may

engage with SACCOs through mobile devices or online platforms and where they may be more vulnerable to misinformation or poor customer service. The emphasis on consumer protection helps build trust in SACCOs and makes it safer for people to engage with digital financial tools, particularly those who are new to the formal financial sector (SASRA Regulations, 2020)..

The regulations also require SACCOs to establish comprehensive risk management frameworks that address the unique challenges of digital financial services. This includes policies on cybersecurity, data privacy, digital fraud prevention, and IT governance. By mandating that SACCOs manage these risks proactively, the regulations help to ensure that financial innovations are introduced responsibly and do not expose members to unnecessary harm or loss.

Ultimately, the 2020 regulations help to position SACCOs as active contributors to Kenya's national goals of financial inclusion. Through the adoption of mobile-based services and the ability to operate virtually, SACCOs can reach members in rural, remote, or underserved communities who may not have access to traditional financial institutions. These regulations create a structure that enables SACCOs to leverage technology to serve a wider population while maintaining the cooperative principles of member ownership, democratic governance, and mutual benefit. In doing so, they offer a pathway for SACCOs to modernize their services, promote economic empowerment, and contribute meaningfully to Kenya's inclusive financial development agenda.

1.2 Problem Statement

Despite ongoing efforts to improve access to financial services, financial exclusion remains a pressing challenge in Kenya, with approximately 10% of the population still lacking access to any form of formal financial services. This exclusion is predominantly felt across gender, geographic, and socio-economic lines, with rural populations (80.2%) significantly trailing their urban counterparts (91.3%) in financial access. Moreover, only 18.3% of Kenyan adults are considered financially resilient, highlighting the fragility of financial well-being across the country. While regulated non-WDT SACCOs have the potential to

close these gaps by reaching underserved communities, their impact is limited by increasing competition and the slow pace of innovation. The urgent question remains: how effectively are financial innovations being leveraged by non-WDT SACCOs to advance financial inclusion in Kenya's most vulnerable populations?

This research explores how financial innovations enhance financial inclusion, specifically within regulated non-WDT SACCOs. These organizations are vital yet underutilized in the country's broader financial inclusion agenda. Researchers have delved into analyzing the intersectionality between financial innovations and financial inclusion, yielding valuable insights. Garcia (2021) emphasized the role played by technological innovations in enabling Peruvians to access innovative financial services. Kabir (2022) highlighted innovations as a major driver of progress in South Asia. Akileng (2018) identified financial innovations as pivotal for financial inclusion in Uganda, while Mutua (2018) emphasized its significant contribution to increased financial inclusion in Kenya. Similarly, Misati et al. (2022) and Mutinda et al. (2018) underscored how innovations aid the development and deepening of the Kenyan financial systems.

Previous research conducted in countries such as Peru, Uganda, and regions of South Asia may not fully reflect the Kenyan context, given the distinct differences in economic structures, regulatory frameworks, and operational models of financial institutions. Within Kenya, most studies have focused on the role of financial innovation in enhancing inclusion within the banking sector. Where the SACCO sector has been considered, the emphasis has largely been on the impact of innovation on the financial performance of DT SACCOs. Minimal attention has been given to regulated non-WDT SACCOs, entities that differ significantly from both commercial banks and DT SACCOs in terms of their business models, operations, and regulatory landscape. These SACCOs were only recently brought under the oversight of SASRA, highlighting the need for this focused investigation within this emerging and underexplored segment of the financial sector.

1.3 Study Objectives

1.3.1 General Objectives

To analyze the influence of financial innovations on financial inclusion and the moderating role of regulation among regulated non-WDT SACCOs in Nairobi County, Kenya.

1.3.2 Specific Objectives

1. To investigate the effect of product innovations on financial inclusion among non-WDT SACCOs in Nairobi County.
2. To evaluate the effect of process innovations on financial inclusion among non-WDT SACCOs in Nairobi County.
3. To investigate the effect of technological innovations on financial inclusion among non-WDT SACCOs in Nairobi County.
4. To assess the effect of marketing innovations on financial inclusion among non-WDT SACCOs in Nairobi County.
5. To investigate the moderating role of regulation on the relationship between financial innovation and financial inclusion among non-WDT SACCOs in Nairobi County.

1.3.3 Research Questions

1. What is the effect of product innovations on financial inclusion among non-WDT SACCOs in Nairobi County?
2. How do process innovations influence financial inclusion among non-WDT SACCOs in Nairobi County?
3. What is the impact of technological innovations on financial inclusion among non-WDT SACCOs in Nairobi County?
4. To what extent do marketing innovations affect financial inclusion among non-WDT SACCOs in Nairobi County?
5. How does regulation moderate the relationship between financial innovation and financial inclusion among non-WDT SACCOs in Nairobi County?

1.4 Scope of the Study

This study aimed to investigate the role played by financial innovation in advancing financial inclusion in Kenya, considering regulation as a moderating variable. The primary focus is on Regulated non-WDT SACCOs in Nairobi County, chosen for their distinct regulatory characteristics and operational approaches in delivering financial products and services, providing a valuable contrast to the extensively studied DT SACCOs. The research was conducted within Regulated non-WDT SACCOs based in Nairobi County, most of which have headquarters in the region, ensuring easy access to relevant information.

The study assesses if and how financial innovation within non-WDT SACCOs has contributed to the deepening of financial inclusion in Kenya. The primary data for this study was gathered via questionnaires administered to key personnel in non-WDT SACCOs and filled by either the operations manager, finance manager, or Chief Executive Officers. These individuals were deliberately chosen due to their pivotal role in shaping the decision-making process regarding adopting innovations within their respective SACCOs.

1.5 Significance of the study

This study is valuable to several parties, such as policymakers and regulators, financial service providers, scholars, and other academic researchers.

1.5.1 Policy Makers and Regulators

Policymakers and regulators like the national government, the Central Bank of Kenya, and the SACCO societies' regulatory authorities will find value in this study's conclusions. Policymakers and regulators can derive insights from this study on how best to formulate and implement policies that deepen financial inclusion by harnessing and fostering product, technological, marketing, and process innovations.

1.5.2 Management of Financial Intermediaries

The management and practitioners of financial intermediaries such as non-WDT SACCOs will find the results of this study very useful since it will deepen their understanding of the positive or negative relationship between financial innovation and financial inclusion. This will help them adopt effective intermediation practices that will promote financial inclusion.

1.5.3 Researchers and academics

Other scholars and researchers who aim to comprehend the relationship between financial innovation and financial inclusion will find this study significant as it adds to the current body of knowledge and the theory of innovation. This research serves as a foundation for future investigations on the role of financial innovation by paving recommendations for additional studies.

1.6 Chapter Summary

This chapter discussed and explained the study's overall background by discussing and explaining the concept factors, problem statement, research objectives, research questions, scope of the study, and significance of the study. The next chapter reviews relevant literature to discuss the theoretical framework for this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter's main objective is to assess the theoretical and empirical research on financial innovations and financial inclusion. While the empirical review examines the earlier research on the relationship between the two variables, the theoretical analysis addresses the theories pertinent to both. The objective of this chapter is to pinpoint the current gaps in the existing theoretical and empirical studies.

2.2 Theoretical Review

This study is anchored on three theories that are relevant to understanding the relationship between financial innovations and financial inclusion: the Diffusion of Innovation Theory, the Financial Innovation Theory, and the Financial Intermediation Theory. These theories were chosen because they provide valuable insights into the rationale behind the development of financial innovations, the processes through which they are adopted and integrated into financial systems, and their impact on access to financial services. Together, they offer a strong foundation for analyzing the ways through which financial innovations can or cannot enhance financial inclusion.

2.2.1 The financial intermediation theory

Developed by Gurley and Shaw (1960), this theory provides a foundational lens for examining the role of financial institutions in mobilizing savings and allocating credit within an economy. The theory posits that financial intermediaries, such as banks, credit unions, and SACCOs, arise to mitigate market imperfections, particularly those related to information asymmetry, high transaction costs, and risk exposure. These institutions serve as vital conduits between borrowers and savers thereby promoting more efficient resource allocation and contributing to economic development. A subsequent contribution by Goldsmith (1969) emphasized financial development and the role of intermediaries in promoting economic growth. Later, economists such as Diamond (1984) and Dybvig

(1983) extended the theory by analyzing the role of intermediaries in reducing transaction costs and providing liquidity and risk transformation.

The central tenant of this theory is that financial intermediaries exist to overcome market frictions of information asymmetry, transaction costs, and risks (Diamond, 1984; Gurley & Shaw, 1960). This makes it particularly relevant in contexts where access to formal financial services remains limited hence financial exclusion. Regulated non-WDT SACCOs are well-positioned to serve as intermediaries capable of extending financial services to these underserved populations, often through tailored and innovative products (Goldsmith, 1969).

The financial intermediation theory was selected because of its ability to explain the importance of financial intermediaries in enhancing financial inclusion, by highlighting the mechanisms through which financial institutions can promote savings mobilization, provide credit, and facilitate financial literacy (Levine, 1997). One drawback is that the theory generally assumes rational behavior and the existence of efficient markets, conditions that may not reflect the realities of informal economies or marginalized populations (Allen & Gale, 2000). The theory does not also fully account for the rise of financial technologies and digital platforms, which are increasingly enabling transactions and reducing reliance on traditional intermediaries (Beck, Chen, Lin, & Song, 2016).

Literature from different scholars supports the financial intermediation theory; for instance, Onodugo et al. (2013) through study emphasize the positive role played by private investments in boosting economic growth, bringing benefits such as human capital formation, job creation, enterprise development enhancements, technological spillovers, and the diversification in export trade. The theory is also critiqued by Allen and Santomero (1997), who state that the theory is heavily focused on the financial institution's functions, which are no longer fundamental and applicable in a mature financial economy. Among their proposal, the functions of financial institutions in reducing information asymmetries and reducing transaction costs should be emphasized. They also note that the theory does not consider the risk reduction roles of lenders in the banking sectors.

A further investigation into the theory by Sinha in 2001 lists three major drawbacks of Goldsmith's Study. He notes that financial intermediation is actively propelled by governments and households and not firms, as earlier indicated. This theory does not then comprehensively cover the parties pertinent to financial intermediation. The question of causality also comes into play in the theory of whether financial development caused economic development or vice versa. According to Sinha, this does not come out clearly in Goldsmith's study, which had doubts about whether this question could be addressed. Lastly, Sinha notes that this study is incomplete because it goes against the basic economic theory that tells us that the economic growth in a particular economy is contributed by various factors such as enhanced human capital, population growth rates, the propensity to save, fiscal and monetary policies, and rule of laws (Sinha, n.d. 2001).

The Financial Intermediation Theory supports the analysis of financial inclusion as the primary dependent variable. It explains how regulated non-WDT SACCOs, by functioning as intermediaries, can influence access to financial services through various innovations. The theory underscores the significance of institutional mechanisms in bridging financial gaps, thereby offering a solid foundation for understanding how financial innovations can be leveraged to advance inclusion in Nairobi County and beyond. The theory is suitable in this study for viewing financial institutions, such as regulated non-WDT SACCOs as the providers of external funding, enhancing financial inclusion. Through product, process, marketing, and technological innovations, non-WDT SACCOs can accelerate the financial inclusion rate.

2.2.2 The Diffusion of Innovation Theory

Developed by Rogers in 1962, the diffusion of innovation theory explains the influential framework for understanding how new ideas, technologies, or practices spread within a social system over time. Rogers is widely recognized as the leading proponent of the theory, which has since become one of the most influential frameworks for understanding how new ideas, technologies, or practices spread within a social system over time (Rogers, 2003). The central tenant of this theory is that adopting innovation in a social system is not spontaneous instead, it is a gradual process. Members of a population adopt innovation

differently, with some adopting them earlier than others hence the categorization into five exclusive categories: innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003).

According to Rodgers (2003), innovation diffusion unfolds through five stages: knowledge, persuasion, decision, implementation, and confirmation. In the initial stage of knowledge, individuals are introduced to the innovation for the first time. During the persuasion phase, people develop favorable or unfavorable attitudes towards innovation. The third stage revolves around decision-making, where individuals decide whether to adopt or reject the innovation. Subsequently, in the implementation stage, those who have chosen to adopt the innovation begin its practical application. The fifth and final stage, confirmation, involves users evaluating the innovation and deciding to persist with its usage or discontinue it altogether.

Uncertainty is perceived as the major obstacle to the diffusion of innovation (Rogers, 2003). People who are unsure about a service or product are less likely to adopt it in their day-to-day activities. Five key attributes shape the decision to embrace an innovation. Relative advantage pertains to the extent to which an innovation is perceived superior to the idea it replaces. The assessment of the degree to which an innovation is seen as aligning with the adopters' past experiences and past experiences is referred to as compatibility. Complexity measures the perceived difficulty in comprehending and using an innovation. This attribute is deemed as a barrier to the adoption of innovation. The degree to which users can experiment with innovation before fully integrating it is triabiliy. Lastly, observability reflects the visibility of the innovation results to others, serving as a motivational factor in adopting the innovation (Sahin, 2006).

One of the key strengths of the Diffusion of Innovation Theory is its flexibility and broad applicability across disciplines such as health, education, agriculture, and finance (Chile, 2017). It offers a clear structure for understanding how innovations penetrate a market and influence user behavior (Dearing & Cox, 2018). Additionally, its emphasis on adopter categories and innovation attributes such as relative advantage, compatibility, complexity,

trialability, and observability provides a useful lens for predicting the rate and extent of adoption.

The theory of diffusion of innovation faces critics due to some constraints. The theory ignores the resources available to an individual or the societal support they receive when implementing an innovation. Innovation of cultural norms on accepting an innovation is occasionally overlooked by the theory (Deligiannaki & Ali, 2011). Network presence or absence is typically not emphasized in the spread of innovation. Innovation dissemination may be hampered by the poor introduction of that innovation to society. Furthermore, it assumes a relatively linear and rational adoption process, which may not reflect the complexities involved in decision-making among financially marginalized populations (Lyytinen & Damsgaard, 2001).

Despite these limitations, the theory remains highly valuable for analyzing the dissemination of financial innovations and understanding how such innovations can be scaled to promote financial inclusion. It informs the evaluation of how SACCOs implement new financial solutions, and how these solutions are received by different user groups within the financial system. The theory is relevant to this study since it explains how regulated non-WDT SACCOs can successfully introduce new financial innovations into the market to enhance financial inclusion.

2.2.3 Financial Innovation Theory

In 1975, William L Silber aimed to address the innovation of financial instruments or practices to alleviate firms' financial constraints. His research revealed that firms seek to maximize utility within various internal and external constraints. External constraints encompass government regulations and market dynamics, such as demand and supply parameters. On the other hand, internal constraints are those imposed by the firm itself. For example, a firm may establish targets for asset growth or self-impose liquidity constraints (Silber & Moshe, 1977).

One proponent of this theory Merton Miller, argued that financial innovation is a response to changes in the environment especially regulatory, technological, and macroeconomic

shifts, and is essential for improving financial system efficiency (Miller, 1986). Another major contributor is Tufano (2003), who conceptualized financial innovations as the act of creating and popularizing new financial instruments, technologies, institutions, and markets to meet emerging needs.

The central tenet of Financial Innovation Theory is that innovation arises to reduce transaction costs, manage risk, improve capital allocation, and respond to regulatory constraints (Lerner & Tufano, 2011). One of the main strengths of Financial Innovation Theory is its adaptability to a range of financial environments. It provides a flexible framework for examining how financial institutions adapt to external pressures and customer needs. It also supports policy analysis by linking regulatory evolution to the development of new financial services.

However, critics argue that it sometimes overemphasizes the benefits of innovations while underestimating risks, such as increased complexity, fraud, and financial instability as was evident in the 2008 global financial crisis (Frame & White, 2014). Moreover, the theory tends to presume rational behavior and may not fully account for behavioral or cultural barriers to innovation adoption in low-income or rural contexts. Additionally, it may underplay the role of financial literacy, assuming that all users can understand and benefit from innovations equally.

This theory is supported by Sylla (1982). The main argument put up by Sylla is that when the government was obliged to restructure the payment systems due to the monetary crisis, new monetary standards fiat currency, and national bank notes were implemented. Sylla also links the creation of new monetary systems to the growing expense of upholding current regulations, which affects both people and businesses at the same time. Given the inherent challenges in private and public collective action, it is not unexpected that various interested groups need to experience crises to be persuaded to collaborate on developing a product or service.

Furthermore, Ayalew & Xianzhi (2019) discovered that the firms' decision to participate in innovative activities and the possibility of both process and product innovation are negatively impacted by financial restrictions. They studied how financial limitations affect

creativity in emerging nations, emphasizing eleven (11) African countries. The findings highlight that different industries, company sizes, and age groups experience different degrees of the negative impact of financial limitations on innovation. Additional factors contributing to a firm's innovation include its scale, collaboration alliance, research and development, government funding, and exports. In conclusion, the likelihood of facing financial limitations may be alluded to by looking at the ex-ante financing structure collateral value, accounting and auditing procedures, and group membership of the companies.

Contrary to Ayalew and Xianzhi's (2019) study, Zhang and Jin (2021), who are of the opposite perspective, are attempting to address the question: Does financial restriction play an enabling role? He built a model, examined the connection between Research and Development costs and green patents, looked at how financial limitations affected the production of green innovation, and came to the following conclusions: First, R&D spending is important and fuels green innovation as seen by the number of green patents. Second, financial limitations trifle with green innovation, in contrast to the favorable correlation between R&D spending and green patents. Third, financial limitations increase the efficiency of R&D investment, which amplifies the beneficial impact of R&D on green innovation.

Financial Innovation Theory remains a valuable lens for examining how financial institutions, such as SACCOs, adopt new tools and strategies to reach financially excluded populations and maintain relevance in an increasingly competitive and digital financial landscape.

2.3 Empirical Studies

This segment reviews the empirical research conducted by different scholars regarding the correlation between financial innovations and financial inclusion and the moderating factor of regulatory frameworks. The objective was to scrutinize prior studies and pinpoint any existing gaps, followed by a discussion on how the current research aims to address these gaps.

2.3.1 Product Innovation and Financial Inclusion

A product that is made available to potential users that is new or significantly changed to its characteristics of intended uses is what is meant by product innovation. (Gault, 2018, p. 619). According to Edwards-Schachter (2018), product innovation is one of the most common types of innovation among businesses. It is most suitable for businesses just entering a market, according to Olalla (2015), who also points out that an innovative product is necessary to make money, gain market share, and have a favorable effect. To suit the changing wants of current clientele and draw in new ones, businesses strive for product innovations (Soi, 2016).

In research on how innovation strategies, both institutional and product affect financial performance in Kenya's banking sector, Muigai and Gitau (2018) note that the implementation of product innovations like new products and services, improvement of existing products, and the provision of a broad selection of competitive products and services lead to enhanced financial performance. The study recommends the adoption of an E-customer information database, electronic share trading platform, computerized loan document preparation, automated cheque reconciliation, a centralized loan application system, and automated voice response to increase the banks' competitive advantage.

Achieving financial inclusion requires having access to reliable financial services and products (Tuesta et al., 2015). Agaba & Mpirirwe (2023) contribute to this through their study on financial innovations and financial inclusion among Uganda commercial banks, noting that improved access and use of banking financial services can be attributed to new product development, high-quality products, product differentiation, electronic bill payment, and the opening of new deposit accounts. Product innovation is crucial for banks because it shields them from competitors and market dangers. Placing them strategically in the market enhances performance and results in competitive advantage, better performance, and a larger market share.

Qamruzzaman & Wei (2019) considered financial development and remittance inflows for six South Asian nations as they investigated the link between financial inclusion and financial innovations. The results demonstrate a favorable, reciprocal association between

financial inclusion and financial innovations over the long and short terms. Additionally, it was noted that financial inclusion is positively correlated with positive and negative shocks in the context of financial innovation. Similarly, an examination of 22 Arab countries highlights that innovativeness in the financial systems creates abundant opportunities for diversification in products and service offerings, easing the unbanked population into the formal banking network (Qamruzzaman, 2023).

When Kim et al. (2018) looked at how well banks performed regarding product innovations, they discovered that factors like efficacy and efficiency regarding new, enhanced, and high-quality products had a significant and beneficial effect on performance. The dynamics of financial innovations and financial performance of Banking firms: Evidence from branchless Banking models was the topic of the study conducted by Chipeta & Muthinja 2018). The branchless banking models of ATMs, internet banking, agency banking, and mobile banking were examined. By applying the Koyck dynamic distributed lag model, researchers discovered that these innovations enhance banks' performance.

According to Nzioka (2017), there is a substantial correlation between agency banking and financial inclusion. From the study, the researcher asserts that bank agent training might encourage more unbanked people to create accounts. This would assist in economic development, efficient resource allocation, and accomplishing Vision 2030 goals. The present findings contrast with those of Doh (2020) and Agufa (2016), who observed a negative correlation between agency banking and financial inclusion and contested that a rise in bank agents reduces financial inclusion. Agufa (2016) concludes that banks use digital finance mainly to reduce the costs of opening and operating physical branches. This is done not to promote financial inclusion but to boost profitability and financial performance.

2.3.2 Process Innovation and Financial Inclusion

Process innovation is the introduction of new and considerably enhanced corporate procedures (He and Wong 2004). According to Khan and Naeem (2018), it includes adjusting organizational procedures, service delivery systems, and production systems to

achieve efficiency, as demonstrated by lower production costs and higher output. Conversely, Polder et al. (2010) categorize process innovations as implementing novel production techniques or significantly enhancing pre-existing techniques, encompassing auxiliary functions such as purchasing, upkeep, and accounting. It includes new equipment, materials, and process re-engineering.

Agaba and Mpirirwe (2023) observe that process innovations, such as providing quality services and transforming bank operations, facilitated financial inclusion among Uganda's rural families. Process Innovations in banking involve providing excellent services and changing procedures to increase efficiency, flexibility, and speed while lowering costs. The report concluded that better access to and use of financial services along with processes like internet banking, e-banking, secure mobile banking platforms, simplicity, and ease of use have all contributed to financial inclusion.

The findings of Kasekende (2016) note a positive significant relationship between process innovations and financial inclusion when covering mobile banking systems for financial inclusion in Tanzania, Kenya, and Uganda. Similarly, Mutua (2018) finds that Kenya's financial inclusion has been much improved by the country's continuous adoption of mobile money services. He points out that most Kenyans may not access financial services via mobile phones without mobile money platforms. Omanga and Dreyer (2020) state that MPESA services in Kenya need to be viewed as a disruptive innovation that encourages financial inclusion and wealth generation, adding to the discussion of the role played by mobile money platforms in Kenya to enhance financial inclusion.

Nekesa and Olweny (2018) evaluated how financial innovations affected the financial performance of DT SACCOs in Kenya. According to the study, organizational, product, and process innovations are significant financial innovations that influence the current performance of financial institutions in Kenya. Process innovations included RTGS, office automation, and loan tracking systems, and the study recommends that SACCOs embrace automation in their service delivery. Notably, Ncurai et al. (2022) suggest that SACCOs should increase their R&D spending to promote innovation, noting that process innovation has a small but favorable impact on organizational performance.

The DT SACCOs' process innovations made them competitive, according to the study of Momanyi et al. (2023) on financial innovations and financial performance of DT SACCOs in Nairobi County. Despite the conclusion that process innovation has a long-term effect on the financial performance of these SACCOs, most of the respondents in the study had no opinion that SACCOs had continuously automated the delivery of their financial processes.

Moki et al. (2019) conclude that financial innovation as a financial inclusion strategy has a positive and significant influence on the performance of DT SACCOs in Nairobi and that firms that have not effectively implemented financial innovations may collapse or be absorbed by well-managed SACCOs. Mobile banking not only plays a significant role in ensuring financial inclusion but also helps decrease avoidable costs, increase efficiency, and improve service delivery to customers.

2.3.3 Technological Innovation and Financial Inclusion.

Technological innovation is defined by the OECD (2013) as the introduction of new goods and processes or the modification of current products and processes via technological advancements. To achieve financial inclusion, technological innovations are essential. Wanjiku (2020), who examined the technological advancements in banking, financial inclusion, and the moderating effect of mobile phones, corroborates this. The results showed that electronic banking outlets, mobile banking, agency banking, and Internet banking are predictors of financial inclusion; Internet banking was considered unimportant. According to Abdi et al. (2022), mobile banking and Automated Teller Machines impact Somalia's financial inclusion rate, with mobile banking being a more important predictor of financial inclusion.

Salampasis and Mention (2018) examined innovation's role in advancing financial inclusion and highlighted FinTech's rise to prominence as a powerful instrument for combating financial exclusion. Frost et al. (2021) report, 'From Financial Innovation to Inclusion, ' points out that the internet and mobile phones, which serve as connecting devices and can store and process vast amounts of digital data, are among the technological

advancements that make digital technology possible. Other advancements include cloud computing, machine learning, distributed ledger technology, and biometric technologies. Wambui (2018) states that process, marketing, product, and information technology innovations are all included in the analysis of technological advancements. It is noted that SMEs that embraced these advancements were able to showcase their performance and obtain a competitive advantage. Thus, SMEs should be careful to determine which innovations are best suited for their business models, as an invention that proved successful in one company may not be successful in another.

In their seminal study, Yu et al. (2017) underscore the pivotal role of knowledge creation in fostering technological advancement, thereby facilitating the development of goods and procedures that confer a sustainable competitive advantage over the long term. The authors elucidate how knowledge creation catalyzes innovation, enabling organizations to enhance their technological capabilities and stay ahead in today's dynamic business landscape. They emphasize that organizations engaged in proactive knowledge creation initiatives are better positioned to leverage emerging technologies and pioneer novel solutions that resonate with evolving market demands.

According to Kavulya et al. (2018), the SACCO sector may reap several benefits by implementing and adopting technologies. These benefits include attracting and maintaining members, creating new income streams by selling associated products and services and lowering member support expenses. The ability to innovate, followed by process computerization and internet resources, best explains the performance of SACCOs. Gichuki (2021) emphasizes the significance of integrating ICT into SACCO operations to boost the sector's capacity for innovation, as 71% of SACCOs rely on ICT to actualize these ideas and innovations that improve financial performance.

Achieng (2021) notes that Digital Transformation among DT SACCOs in Nairobi County has strategically integrated incremental, disruptive, and radical innovations to bolster their sustainable competitive advantage. Incremental innovation emerged as the most prevalent, encompassing initiatives such as big data analysis, digital marketing strategies, digital identity verification systems, and SMS notification services. These innovations have

enhanced operational efficiency and enabled DT SACCOs to meet the evolving needs of their members better while staying ahead of the competition. These SACCOs have streamlined their processes and improved member engagement by harnessing the power of data analytics and leveraging digital channels for marketing and communication. Adopting digital identity verification systems has bolstered security measures, ensuring the integrity of transactions and safeguarding member data. SMS notification services have enhanced transparency and facilitated real-time communication with members regarding their accounts and transactions.

As per Mmari (2023), SACCOs in Tanzania have embraced digital delivery channels, including internet banking, POS systems, ATMs, mobile banking, and wallets/apps. These technological innovations have significantly improved the operational performance of SACCOs, leading to enhanced efficiency and service delivery. By integrating Internet banking services, SACCOs have facilitated convenient access to financial services for members, thereby promoting financial inclusion. Implementing POS systems and ATMs has streamlined transactions, reducing processing times and enhancing convenience for members. Mobile banking solutions and wallet/apps have empowered members to conduct banking activities on the go, promoting flexibility and accessibility.

2.3.4 Marketing Innovation and Financial Inclusion

According to Kahn (2018), marketing innovation connects businesses with consumers through innovative or enhanced forms of promotion to increase demand by raising awareness, highlighting the product's distinctiveness, and building brand recognition. On the other hand, Polder et al (2010) define marketing innovation as the application of new techniques that lead to a notable improvement in the design, product promotion, placement, packaging, and pricing strategy. According to Rust et al. (2004), marketing innovation is a type of technological innovation that centers on product strategy, promotion strategy, and pricing strategy as tactical measures that result in a modification to product design, packaging, distribution, and promotion.

Purchase and Volery (2020) list distribution, pricing, design, promotion, and brand as components of marketing innovation. Digital and mobile marketing offers new methods to reach, engage, inform, sell to, learn about, and serve clients (Lamberton & Stephen, 2016). Technology is recognized as the primary driver of marketing innovation (Medrano & Olarte-Pascual, 2016).

According to Alubakah & Obuba (2022), regulated DT-SACCOs in Kisumu County have used mobile marketing techniques, thus improving their organizational performance. These SACCOs have accepted marketing innovations in their operations, utilizing push alerts, SMS, and MMS marketing techniques, which have expanded their market share and made it possible to attract and keep customers. The potential benefits of mobile marketing include higher sales volume, offering a platform for interactive customer experience, higher returns on equity, better marketing and business strategy, operating costs reduction, acting as a middleman between SACCO and customers, and helping cultivate new business relationship building.

Matiku & Magali (2021) examined customer views on the impact of marketing techniques on the profitability of SACCOs in Dodoma. It was believed that price, product, and service delivery methods negatively and substantially impacted Dodoma Sacco's profitability. As a result, it is suggested that SACCO management keep enhancing marketing tactics and resources to ensure its long-term profitability. Through a combination of descriptive and qualitative analysis, Murugi (2017) evaluated the impact of marketing techniques on the expansion of MFIs in Kenya. The study involved thirteen (13) respondents. The analysis showed that the 4Ps (Product, pricing, promotion, and place) and service (process, people, and tangible proof) marketing strategies helped to spearhead the expansion of MFIs in Kenya. Nonetheless, the study did not include customer service marketing methods, posing a limitation on the findings and conclusions.

Although there is a positive correlation between the performance of dairy cooperatives in Meru County and the marketing strategies used, Kariuki (2020) notes that, given the dynamic and ever-changing environment, more marketing strategies, such as relationship and digital marketing, are required. These findings are consistent with those of Ncurai et

al. (2022), who observed that marketing has a noteworthy and favorable impact on DT SACCOs in Kenya. On the contrary, Shejero (2016) observes that marketing innovation hurts SACCO turnover and advises SACCOs to reevaluate their present tactics and replace them with ones that won't negatively impact their performance.

2.3.5 The Moderating Role of Regulation on Financial Innovation and Financial Inclusion.

Regulatory measures imposed on financial institutions can encourage or discourage financial innovation. According to Silber (1975), financial innovation is a by-product of regulation. Most financial institutions try to circumvent regulatory constraints imposed on them by developing products and services that avoid these regulations or reduce their burden. To illustrate the importance of regulations, Muithya et al. (2022) imply that a regulatory framework is essential as it moderates the links between strategic innovation orientation and the performance of MFIs in Kenya. This means that the financial performance of MFIs will increase if advantageous legislation and policies are implemented.

Kodongo (2018) points out that financial regulation has the potential to both promote and/or impede financial inclusion. Examining the relationship between financial regulation and financial inclusion, Kodongo finds that while know-your-customer policies and capital and liquidity macroprudential regulations may be detrimental to financial inclusion, agency banking regulation and financial literacy may increase formal access to financial products and services.

Analyzing the correlation between financial inclusion and financial regulation within Kenya's FinTech sector, Murgor (2021) uncovers a favorable association. The research reveals a direct link, indicating that heightened utilization of digital financial services has promoted intensified regulation. This suggests that implemented policy measures guarantee consumer protection and foster an accommodating atmosphere for enhancing both the quality and accessibility of financial services. These results contrast with those of Bernier & Plouffe (2019), who observe that macroprudential policy alone does not propel

financial innovation or its association with indicators of economic growth. They note that ill-conceived regulations have the potential to impede growth. This challenges policymakers to discern genuinely advantageous innovations from those masquerading as such.

According to Mutunga (2015), the implementation of SASRA regulations has positively impacted the operations and productivity of SACCOs, as evidenced by the growth of membership and deposits. Likewise, Jumba (2021) observes that compliance with SASRA regulations exhibits improved financial performance compared to performance before regulation. Conversely, Ithuku (2019) does not believe in the efficiency of regulatory frameworks in Kenya and highlights that Kenya could gain valuable insights from frameworks in the USA and UK. This is due to the inefficiencies in Kenya's legal frameworks, which fail to adequately address relevant legal issues resulting from the devolution of cooperative functions, inconsistent jurisprudence arising from SASRA's enforcement approaches, ineffective penalties, and sanctions for failing to comply with statutory reporting requirements, among others.

SASRA regulations have enhanced the quality of financial services that regulated SACCOs provide through effective supervision and disclosures by SASRA authorities and publications. Customer confidence is boosted. As a result, Ndegwa (2020) concludes that the SASRA regulation significantly influences financial inclusion.

2.4 Research Gaps

The research gap analysis evaluates the existing body of knowledge, guiding researchers towards unexplored opportunities for future investigations and analysis in their chosen field. Within the existing body of knowledge, gaps exist in terms of concept, context, and methodology, as illustrated below:

Table 1: Summary of Research Gaps

Author	Title	Findings	Research Gaps	Current Study
Qamruzzaman (2023)	Financial Innovation and Financial Inclusion Nexus in South Asian Counties	Long-term and short-term positive correlation between financial innovation and financial inclusion	A contextual research gap has been identified. The study was conducted in South Asia.	This study was conducted in Kenya and focused on regulated non-withdrawable deposit-taking SACCOs in Nairobi County.
Avom et al., (2021)	Measuring Financial Inclusion in African Countries	The financial inclusion index is primarily constructed using dimensions of availability and usage, penetration, and barriers to make up the least amount of the index.	Research Methodology gap identified. Financial inclusion is measured in four dimensions: Access, penetration, usage, and barriers.	The current focus is on supply-side measures of financial inclusion: Access, Usage, and Impact.
Mutua (2018)	The effect of financial innovation on financial inclusion in Kenya	Financial innovation has a significant effect on financial inclusion	Contextual research gap identified. The researcher had a major focus on the banking and micro-finance organization by using secondary data from the Central Bank of Kenya to draw his conclusion	The current study focused on regulated non-withdrawable deposit-taking SACCOs in Nairobi County. Data was collected through questionnaires.
Murgor (2021)	The influence of Financial Regulation on Financial Inclusion: A case study of the Fintech Industry in Kenya	Findings show a positive relationship between financial inclusion and regulation. Greater financial inclusion leads to greater financial regulation, which positively impacts financial stability in the country.	Research Methodology gap identified. The researcher surveyed from 2018 to 2019, a short time to analyze data and draw conclusions. Causality problems arise from the study: does financial inclusion lead to financial regulation or vice versa?	The current study focused on non-withdrawable deposits that take SACCOs. Data over 6 years will be collected and analyzed. The current study solved the causality problem using financial regulation as a moderating variable.
Achieng, (2021)	Role of innovation in	Innovation and sustained competitive	Conceptual research gap identified.	The current study used product/service, technology,

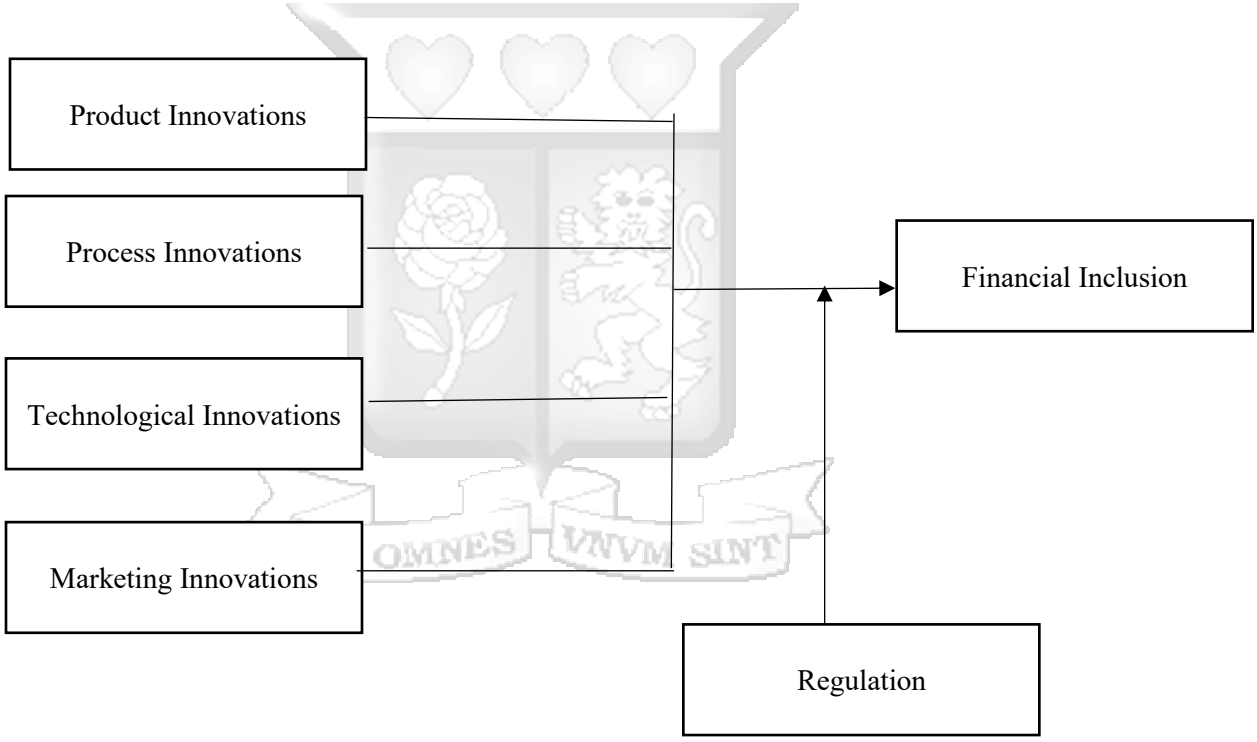
	attaining sustainable competitive advantage among Deposit-taking SACCOs in Nairobi County. Kenya.	advantage are positively correlated with incremental innovation, accounting for the largest portion of this relationship.	The researcher used disruptive, incremental, and radical innovation as proxies for innovation.	marketing, and process innovation as proxies for financial innovation. They focused on Regulated non-withdrawable deposit-taking SACCOs analyzing the effect of financial innovation and inclusion.

Source: Researcher (2024)

2.5 Conceptual Framework

The diagrammatic depiction of the link between the independent and dependent variables is reflected in and referred to as a conceptual framework. Financial inclusion is the dependent variable of this study, whereas financial innovation is the independent variable. The study specifically examined four types of innovation: technology, marketing, process, and product. Financial regulation acts as a moderating variable. It is theoretically expected that advances in marketing techniques, technology, processes, and products will have a noteworthy and beneficial impact on financial inclusion. The conceptual model is as below

Figure 2.1 : Conceptual Framework



Source: Researcher (2024)

2.6 Operationalization of Variables

Table 2.2: Operationalization of Variables

Variables	Indicators	Data Collection Tool	Measurement	Data Analysis	Supporting Literature
Financial inclusion	• Access to Sacco products /services • Frequency of Usage of Sacco products/services • Quality of the Sacco products/services • Impact of the Sacco products/services on users' welfare	Questionnaire	Likert scale	Descriptive statistics Correlation analysis Regression analysis	(Demirgüç-Kunt et al., 2022).
Financial Innovations	• Product Innovations • Process Innovations • Technological Innovations • Marketing Innovations	Questionnaire	Likert scale	Descriptive statistics Correlation analysis Regression analysis	(Agaba & Mpirirwe, 2023) (Yu et al., 2017) (Alubakah & Obuba, 2022) (Khan & Naeem, 2018)
Regulatory Frameworks	• Supporting role of Regulatory Frameworks • Impeding role of regulatory	Questionnaire	Nominal Scale	Descriptive statistics Correlation & Regression analysis	(Muithya et al., 2022)

Source: Researcher (2024)

2.7 Chapter Summary

This chapter presented a comprehensive review of the literature relevant to the study topic. It provided an in-depth discussion of the theoretical frameworks underpinning the research, followed by an analysis of empirical studies aligned with the study objectives. A summary table was included to highlight key findings from previous studies, identify existing research gaps, and demonstrate how the current study aims to address those gaps. Additionally, a conceptual framework was developed to illustrate the relationships between variables, and a table outlining the operationalization of variables was provided to offer clarity on how the study objectives will be achieved.

CHAPTER 3: RESEARCH METHODOLOGY.

3.1 Introduction

This chapter examined the research design, demographic and sampling, data collection, data analysis tools and techniques, and research philosophy. It explains the approaches taken to measure and evaluate the impact of financial innovations on financial inclusion in non-WDT SACCOs in Nairobi County.

3.2 Research Philosophy

A study's underlying assumptions and core beliefs are embedded in the research philosophy. As articulated by Sekaran and Bougie (2016), it represents a perspective on how data related to a specific phenomenon should be collected, analyzed, and interpreted. Positivism views reality as objective and independent, favoring quantitative methods to uncover generalizable truths (Saunders et al., 2019; Creswell, 2014). In contrast, interpretivism sees reality as socially constructed and subjective, emphasizing understanding through qualitative approaches like interviews and case studies (Bryman, 2016; Creswell & Poth, 2018). Critical realism bridges these views, asserting that while reality exists independently, our understanding is shaped by social and cultural structures; it often employs mixed methods to uncover underlying mechanisms (Bhaskar, 2008).

Pragmatism rejects rigid philosophical boundaries, focusing instead on what works in addressing research problems, typically combining both qualitative and quantitative methods (Morgan, 2007). Lastly, postmodernism challenges the existence of universal truths, highlighting the influence of language, power, and discourse in constructing knowledge, often through methods like discourse analysis and critical inquiry (Foucault, 1972). Each philosophy brings distinct assumptions about reality and knowledge, shaping the researcher's approach to inquiry and interpretation.

The current study was grounded on positivism, which involves conducting investigations objectively to identify influencing factors on outcomes. Positivists advocate for research

that relies on quantitative data, hypotheses, and theoretical frameworks, viewing them as essential for producing valuable insights (Cooper & Schindler, 2014).

Adopting the positivism approach facilitated a comprehensive exploration and understanding of the relationship between financial innovations and financial inclusion, elucidating the methodologies and establishing the assumptions within the study. Burns and Burns (2008) claim that the positivism method stresses the study's factual components above subjective perceptions, keeping the researcher and participants apart and ensuring that the research is rigorous, linear, and inflexible with a foundation in hypothesis testing. This method was suitable for this study as it guaranteed the independence of data collection, thus improving the validity and dependence of the findings that may be extrapolated to a wider population.

3.2 Research Design

According to Dul and Hak (2008), research design is the setting up of parameters for data gathering and analysis to balance relevance and the study objectives. Sekaran and Bougie (2016) define research methodology as the blueprint or strategy created for gathering, assessing, and interpreting data to answer research questions. Saunders et al. (2016) summarize this concept as a comprehensive strategy for answering research questions. This study used a descriptive cross-sectional as well as a correlational research design to answer the research questions.

A descriptive survey refers to gathering data using interviews or questionnaires from a representative sample to ascertain respondents' opinions, attitudes, habits, or other social issues (Orodho & Kombo, 2002). This study design permitted methodical thinking and additional investigation and research (Sekaran & Bougie, 2011). The design was considered appropriate for this study as it aided in defining the relationship between financial innovations and financial inclusion among regulated non-WDT SACCOs in Nairobi County, hence addressing the research's what, when, where, and even the how questions. The design was also helpful since samples can serve as representatives of a large population, making the results statistically significant even when several variables

are analyzed (Orodho & Kombo, 2002). The cross-sectional study cut across all 132 regulated non-WDT SACCOs in Nairobi County (SASRA, 2024).

The study also adopted a correlational research design to analyze the relationship between financial innovations and financial inclusion, by studying its existence, the direction of existence, and the strength of association (Creswell & Creswell, 2018). This approach was appropriate for the study as it allowed for the examination of the variables without manipulating them, thereby providing insights into how advancements in financial innovations relate to financial innovation within different organizations. By identifying significant correlations, the study aimed to reveal patterns that could inform policy decisions and strategic initiatives aimed at enhancing financial inclusion through innovation.

3.3 Population and Sampling

3.3.1 Target Population

Kothari (2004) defines the target population as the "total number of respondents in the environment significant to the researcher". Conversely, Mugenda and Mugenda (2013) define the target population as a homogeneous grouping to whom the researcher must extrapolate the study's findings. The entire number of people the researcher wants to summarize the study's findings is also referred to as the population. This study's population comprised professionals from the 132 regulated non-WDT SACCOs in Nairobi County (SASRA, 2024).

The study adopted the use of census in data collection, where all the 132 regulated non-WDT SACCOs were exhaustively examined, and data was collected from every element within a specific population. A census endeavors to encompass every member of the population under scrutiny. This methodology afforded a holistic depiction of the population's attributes, behaviors, and characteristics, obviating the need to infer findings from a sample to the broader populace (Groves et al., 2011). Its utility spans various disciplines, such as demography, sociology, economics, and public health, where an

exhaustive comprehension of the entire population is indispensable for effective planning, policy formulation, and resource allocation (UNESCO, 2020).

3.4 Data Collection

The researcher first requested NACOSTI's approval to perform the research. Permission and approvals were also sought from Strathmore University and the management of Nairobi's regulated non-WDT SACCOs. Primary data collection utilized a hybrid approach, incorporating traditional physical questionnaires and online surveys via platforms like Google and Microsoft Forms. The questionnaires were distributed using the "drop-and-pick-later method" (Allred & Ross-Davis, 2011) Sacco's top managers of each of the 132 regulated non-WDT SACCOs. After three working days, the questionnaires were collected for analysis. This strategy ensured that respondents had enough time to respond to the questions.

The questionnaires were additionally formatted using Google Forms, and a link was distributed to respondents via email. This enabled respondents to conveniently answer questions from any location using their phones or computers, facilitating prompt feedback sharing. The questionnaire allowed for standardized data collection from respondents. The study targeted one of the top managers of regulated non-WDT SACCOs in Nairobi County, including the finance manager, operations manager, or Chief Executive Officer.

3.5 Data Analysis

A structured data analysis procedure was followed using STATA software version 18 to address the research objectives. The raw data was initially extracted from completed survey questionnaires and compiled into CSV format using Excel. The dataset underwent a cleaning process, including validation, coding, and serialization. Missing values and outliers were handled appropriately to ensure the integrity of the analysis.

Descriptive statistics (means, standard deviations, frequencies, and percentages) were used to summarize the characteristics of the data and to present patterns in the adoption of financial innovations and their relationship with financial inclusion. These statistics helped

highlight the degree to which product, process, technological, and marketing innovations had been implemented across SACCOs and were presented in tables and graphs for clarity.

Composite scores were generated for each of the four independent variables (product innovations, process innovations, technological innovations, and marketing innovations) based on Likert scale survey items. These composite variables were treated as continuous predictors in the regression analysis. The dependent variable, financial inclusion, was also derived as a composite index encompassing four dimensions: access, usage, quality, and impact. To evaluate the influence of financial innovations on financial inclusion, a multiple regression model was estimated. Furthermore, to test for moderation, interaction terms were created between the financial regulatory framework (FRF) and each of the innovation variables. These interaction terms were added to the regression model to assess whether the regulatory environment strengthens or weakens the relationship between innovation and inclusion.

The general form of the base regression model was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_t$$

Where:

Y – Financial Inclusion

X_1- Product Innovations

X_2- Process Innovations

X_3- Technological Innovations

X_4- Marketing Innovations

β_0 - Intercept

β_1- β_4– Coefficients for each innovation type

ε_t – Error term

Regression diagnostics were performed to test for normality, homoscedasticity, and multicollinearity using the Jarque-Bera test, Breusch-Pagan test, and Variance Inflation

Factor (VIF) respectively. All findings were reported in tables and graphs generated in STATA version 18, with additional formatting and visualization support using EViews for presentation clarity. This analytic approach ensured that each research question was addressed systematically, and findings were both valid and reproducible.

3.6 Moderation Analysis Framework

To investigate the moderating effect of the financial regulatory framework on the relationship between financial innovations and financial inclusion, a moderation analysis was conducted using an extended regression model. This model assessed whether the regulatory framework modifies the strength or direction of the relationship between each type of financial innovations (product, process, technological, and marketing) and financial inclusion. Moderation was tested by creating interaction terms between the financial regulatory framework (FRF) and each of the four innovation variables. All variables involved in the interaction terms were mean-centered prior to analysis to minimize multicollinearity and ensure accurate estimation of moderation effects. The structure of the moderated regression model was:

$$Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 FRF + \beta_6 (X_1 \times FRF) + \beta_7 (X_2 \times FRF) + \beta_8 (X_3 \times FRF) + \beta_9 (X_4 \times FRF) + \varepsilon$$

Where:

Y= Financial Inclusion (dependent variable)

X_1=Product Innovation

X_2=Process Innovations

X_3=Technological Innovations

X_4=Marketing Innovations

FRF=Financial Regulatory Framework (moderator)

$X_1 \times FRF$ to $X_4 \times FRF$ = Interaction terms (moderation effects)

β_0=Intercept

β_1- β_9=Coefficients

ε=Error term

Each interaction term tested whether the regulatory framework strengthened or weakened the effect of a particular type of innovation on financial inclusion. The significance and direction of these interaction terms formed the basis for interpreting the presence and nature of moderation.

3.7 Research Quality

3.7.1 Piloting

A pilot study was conducted on the questionnaire to identify the unclear areas of the questions and ensure that it is free from ambiguity. The data collected was meaningfully examined in connection with the proposed research objectives. Piloting was done on 10 respondents who qualified to be respondents but were not considered during the actual administration of the questionnaires. Piloting aided in reducing ambiguities that result in incorrect interpretations, which may cause research bias, by improving the grammar and wording of the questionnaire.

3.7.2 Validity of the Instrument

The term validity is used to describe how accurate, meaningful, and technically sound the research questionnaire is. It indicates the extent to which a test procedure accurately measures what it is intended to assess (Mugenda & Mugenda, 2003). The study used content validity to evaluate the questionnaire for clarity and suitability. This involved the evaluation of how well a question corresponded to the objectives being measured (Gakuu et al., 2016).

3.7.3 Reliability of the Instrument

The research questionnaire's internal consistency was maintained in part by the reliability instrument. A test-retest method was used to assess the long-term stability of the research questionnaire. The reliability of the questionnaire used in this study was tested using Cronbach's Alpha, where a co-efficient greater than 0.7 was considered satisfactory (Adeniran, 2019).

Table 3.1: Cronbach Reliability Coefficient

Coefficient Range	Description
>0.9	Excellent
>0.8	Good
>0.7	Acceptable
>0.6	Questionable
>0.5	Poor
<0.5	Unacceptable

Source: Kotter (2012)

3.8 Diagnostic Tests

Diagnostic tests were carried out to ensure that there were no assumptions in the regression model that could lead to a biased or ineffective parameter estimate. The diagnostic tests carried out included autocorrelation, Homoscedasticity, multicollinearity, and normality tests.

3.8.1 Normality Tests

The Jarque-Bera test diagnostic tool was used to assess the normality assumption in regression analysis. Originating from Jarque and Bera (1980), this test evaluates the skewness and kurtosis of the residuals to determine if they follow a normal distribution. A significant Jarque-Bera test statistic indicates non-normality in the data, suggesting

potential violations of the regression model's assumptions. By considering both skewness and kurtosis, the Jarque-Bera test offered a robust method for assessing normality, thereby ensuring the reliability of regression analysis results.

3.8.2 Homoscedasticity tests

Homoscedasticity tests play a crucial role in regression analysis by assessing the assumption of constant variance of errors across different levels of the independent variables. Gujarati and Porter (2009) noted that homoscedasticity was essential for the reliability of regression estimates, as violations of this assumption can lead to biased and inefficient parameter estimates. This study used the Breusch-Pagan or White tests to evaluate heteroscedasticity's presence. These tests provided valuable insights into the adequacy of the regression model, facilitating informed decisions regarding model specification and interpretation. In ensuring the validity of regression results, homoscedasticity tests served as indispensable tools for researchers in various fields (Gujarati & Porter, 2009).

3.8.3 Multicollinearity tests

Multicollinearity occurs when independent variables in a model are highly correlated, potentially leading to issues such as inflated standard errors and difficulty in interpreting regression coefficients (Hair et al., 2019). Grewal et al. (2004) state that low explained variables, limited sample sizes, and a poor measure of reliability in the independent variables are the primary causes of multicollinearity. The Variance Inflation Factor (VIF), which gauges how much multicollinearity increases the variance of the estimated regression coefficients, was used in this study to determine whether multicollinearity is present and how severe it is.

3.9 Ethical Considerations

A fundamental aspect of any research project is ethical issues. Therefore, researchers must follow ethical guidelines when conducting a study (Mugenda & Mugenda, 2007). The

researcher got a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI) at the initial stages of this research. Further, the respondents were issued with a consent statement that introduced the researcher, stating that the study's objectives assured them of the confidentiality of personal and general information. Permission and approvals were also sought from Strathmore University. The participants participated voluntarily and could leave at will.

4.0 Chapter Summary

This chapter gave a detailed explanation of the foundation guiding the study, specifically the adoption of the positivist approach, along with a justification for its selection. The chosen research designs were descriptive cross-sectional and correlational research designs, which are appropriate for capturing data at a specific point in time and for understanding the relationship between variables. Primary data was collected from the 132 regulated non-WDT SACCOs using a structured questionnaire, and analysis was conducted using STATA version 18. The chapter also outlined the procedures for data analysis, including validation methods and diagnostic tests to ensure the reliability and robustness of the findings. In addition, key ethical considerations relevant to the study were keenly addressed.

CHAPTER 4: PRESENTATION OF RESULTS/FINDINGS

44.1 Introduction

The findings of data analysis conducted to address the research objectives and answer research questions of the study are reported in this chapter. The chapter is divided into several corresponding sections to provide a comprehensive and constructively structured view of the findings. The first is the response rate, which shows respondents who completed and returned responses. The second is reliability testing, which involves Cronbach's alpha of several items, including dependent, independent, and control variables. This is succeeded by descriptive statistics per each objective. Diagnostic tests are reported next, checking for normality, homoscedasticity, and multicollinearity to assess the suitability of the research variables for linear regression. The chapter then turns to multiple linear regression analyses that were performed to address the research objectives and research questions. Lastly, the chapter summarizes the key findings per the research objectives.

4.1.1 Response Rate

Out of the 132 questionnaires distributed, 112 were successfully completed and returned, yielding a response rate of 84.8%**.** According to Mugenda and Mugenda (2003), a response rate of 50% is adequate, 60% is good, and above 70% is excellent. Therefore, this response rate was considered excellent for analysis.

4.2 Reliability Tests

The questionnaires were distributed to respondents through email and in-person office drop-offs to ensure wider reach and accommodate varying levels of digital access and preferences among participants. The data collection process spanned approximately three months, allowing sufficient time for follow-ups, and reminders, and for respondents to complete the questionnaires at their convenience, especially considering their busy work schedules.

Reliability tests were conducted for the items of the dependent variables, and items for the independent variables. The results of this first stage are shown in Table 4.1

Table 4:1: Cronbach's Alpha after the first stage of reliability testing

Item Type	*No. of items*	*Cronbach's Alpha*
Items for independent variables	12	0.935
Items for the dependent variable	7	0.961

The results indicated that all variables met the expected minimum Cronbach's alpha of 0.7 and were considered to have met the expected internal consistency (Adeniran, 2019). The next step in the analysis process was performing descriptive statistics separately for background information variables and research variables.

4.3 Frequency Analysis for Background Information

Frequency statistics of background information were used to summarize the categorical variables as reported in the frequency analysis table (See Appendix D) whereas the mean, median, standard deviation, minimum, maximum, skewness, and kurtosis statistics were generated to summarize the numeric (scale) variables as reported in the net subsection under Descriptive statistics.

The study participants were drawn from various roles within SACCOs, with the majority comprising 49.11% of the participants working in finance. This was followed by 23.21% of those in leadership positions such as CEO, MD, or GM.

Other roles included credit officers and secretaries, each comprising 6.25% of the participants, operations officers at 7.14%, marketing officers at 3.57%, customer service officers at 2.68%, and relationship managers at 1.79%. In terms of educational background, most participants held a degree, accounting for 59.82% of the total, while 38.39% had master's degrees. A small minority, comprising 1.79% of the participants, had achieved a PhD. Regarding tenure, the majority of participants, 58.93%, had 15 years or more of

experience in their roles. Those with less than five years of experience comprised 22.32%, while 18.75% had between 10 and 15 years of tenure.

The SACCOs represented in the study varied in their years of operation. Over half (53.57%) had been operational for 15 years or more, while 26.79% had operated for 10 to 15 years. SACCOs with 5 to 9 years of operation accounted for 17.86%, and only 1.79% had existed for less than five years. Similarly, the year of SACCO regulation showed a concentration in recent years, with 47.32% regulated in 2021 and 33.93% in 2020. Fewer SACCOs were regulated in 2022 and 2023, accounting for 16.07% and 2.68%, respectively.

4.4 Descriptive Statistics

4.4.1. Product Innovations on Financial Inclusion.

Table 4.2 below presents descriptive statistics for product innovation. This assessed respondents' perceptions of product/service improvement, differentiation, and the diversification of savings products within SACCOs.

Table 4.2 Descriptive Statistics for Product Innovation Items

Item	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Product/Service Innovations (Composite Score)	3.76	0.88	1.33	5.00	-1.26	1.16

***Note**:* This is a composite measure derived from three Likert-scale questions.

The average score for product innovation was 3.76, indicating that most respondents moderately agreed that their SACCOs actively pursue product or service innovation. The negative skewness (-1.26) suggests that the majority of responses were skewed toward higher agreement (ratings of 4 or 5), while a positive kurtosis (1.16) indicates a somewhat peaked distribution, with scores clustering around the mean. These results suggest that product innovations were relatively well integrated into SACCO operations, particularly in terms of improving and differentiating financial products. However, the moderate standard

deviation (0.88) revealed some variation in innovative practices across SACCOs, implying room for further harmonization or scaling.

4.4.2 Process Innovations on Financial Inclusion

The mean score for process innovations was 3.82 (Table 4.3), indicating that respondents generally agreed that their SACCOs have adopted improved operational processes. The standard deviation of 1.03 suggests a fair degree of variation across SACCOs in the implementation of such innovations.

Table 4.3 Descriptive Statistics for Process Innovation Items

Item	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Process Innovations (Composite Score)	3.82	1.03	1.00	5.00	-1.17	1.24

***Note**:* The composite score is based on three Likert-scale items covering cost-effective operations, digital onboarding, and online loan processing.

The negative skewness (-1.17) reflected a tendency toward agreement (scores of 4 or 5), while the kurtosis value (1.24) showed a slight concentration of responses around the mean. This pattern suggests that process innovations were perceived positively, particularly in the adoption of cost-saving and digitized systems, although the level of implementation may vary depending on each SACCO's infrastructure and strategic focus.

4.4.3 Technological Innovations on Financial Inclusion

Technological innovations were assessed using items related to the SACCO's use of internet/mobile banking, virtual services, and adoption of emerging digital platforms (e.g., super apps).

Table 4.4 Descriptive Statistics for Technological Innovations Items

Item	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Technological Innovations (Composite Score)	3.82	0.94	1.00	5.00	-1.39	1.85

***Note**:* This score combined three Likert-scale items measuring internet/mobile banking, virtual service delivery, and super platform adoption.

With a mean score of 3.82 (Table 4.4), technological innovations were generally rated positively by respondents. The negative skewness of -1.39 indicated a strong tendency toward agreement, with most SACCOs reporting high engagement in digital technologies. The kurtosis value of 1.85 points to a peaked distribution, meaning responses were tightly clustered around the mean. These results reflected a strong uptake of Internet and mobile banking systems across SACCOs. However, while general digital services were well adopted, some innovation gaps may remain, especially regarding newer or more complex technologies such as super platforms. The consistency in responses also implied that digital innovation may now be a standard expectation in SACCO service delivery.

4.4.4 Marketing Innovations on Financial Inclusion

Marketing innovations were measured by evaluating SACCO's use of promotional strategies, digital messaging platforms (SMS, WhatsApp, email), and regular engagement in digital marketing campaigns.

Table 4.5 Descriptive Statistics for Marketing Innovation Items

Item	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Marketing Innovations (Composite Score)	3.85	0.95	1.00	5.00	-1.30	1.80

***Note**:* This composite score reflects responses to three Likert-scale items on marketing strategy innovations.

The mean score of 3.85 suggests that respondents largely agreed that SACCOs actively employ marketing innovations. A negative skew of -1.30 confirms that responses skew toward high agreement (scores of 4 or 5). The kurtosis of 1.80 implies a somewhat concentrated response pattern, indicating limited variation in the perception of marketing innovations across SACCOs. These results highlight the growing role of digital engagement and targeted communication in enhancing SACCO visibility and outreach. Particularly, the use of mobile messaging platforms and social media appears to be a standardized part of innovative efforts. However, some SACCOs may still lag in terms of advanced or creative promotional strategies, pointing to a potential area for capacity-building.

4.4.5 Moderating Role of Regulations on Financial Inclusion.

This section explores how SACCOs perceived the role of financial regulations, both in terms of supporting and potentially hindering innovations. Two variables were assessed: Regulation support, which reflected whether SACCOs view SASRA regulations as enabling innovation, and regulation barrier which reflected perceptions of regulatory constraints that may hinder innovation.

Table 4.6 Descriptive Statistics for Regulatory Framework Variables

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis
Regulation Support	0.88	0.33	0.00	1.00	-2.30	3.34

***Note**:* The variable was binary-coded (1 = Yes, 0 = No), and then aggregated for analysis.

The mean of 0.88 (Table 4.6) for regulation support indicated a strong consensus that the regulatory environment, especially as guided by SASRA, enabled innovation in SACCOs. The strongly negative skewness (-2.30) and high kurtosis (3.34) further reinforced this, showing that most respondents selected “Yes” with very few dissenting views. These findings suggest that while regulations are largely viewed as supportive, there were notable concerns about compliance burden or rigidity.

4.5 Correlation Analysis for the Dependent, Independent, and Moderating Variables

The correlation analysis revealed that financial inclusion exhibited the strongest positive relationship with product innovations (r = 0.282) and marketing innovations (r = 0.263) (Table 4.7). These results suggest that SACCOs that engaged more in these two types of innovation tended to report higher levels of financial inclusion, indicating a moderate association. In contrast, process innovations (r = 0.108) and technological innovations (r = 0.137) showed weaker positive correlations with financial inclusion, implying that while they may contribute, their direct impact is less pronounced.

Table 4.7 Correlation Matrix

	FI	PI	PR	TI	MI
Financial Inclusion (FI)	1.000	0.282	0.108	0.137	0.263
Product Innovation (PI)	0.282	1.000	0.669	0.566	0.743
Process Innovations (PR)	0.108	0.669	1.000	0.758	0.816
Tech Innovations (TI)	0.137	0.565	0.758	1.000	0.817
Marketing Innovations (MI)	0.263	0.744	0.816	0.817	1.000

It is also important to note the presence of high intercorrelations among innovation types, particularly between marketing and technological innovation (r = 0.817). This suggested potential multicollinearity in regression models, which was further examined and addressed using Variance Inflation Factor (VIF) diagnostics in the subsequent sections.

4.6 Diagnostic Tests

To validate the reliability and accuracy of the regression results presented in Section 4.5, diagnostic tests were conducted to assess the three core assumptions of Ordinary Least Squares (OLS) regression: normality of residuals**,** homoscedasticity, and multicollinearity.

The Jarque-Bera test was used to assess whether the residuals of the moderation model followed a normal distribution. The test results are presented below:

Table 4.8 Jarque-Bera Test Results

Test	Statistic	p-value	Conclusion
Jarque-Bera	3.47	0.176	Residuals are normal

The test yielded a p-value of 0.176, which is above the 0.05 threshold. Therefore, the residuals were not significantly different from a normal distribution. This finding was supported by the histogram in Figure 4.1, which shows a symmetric distribution.

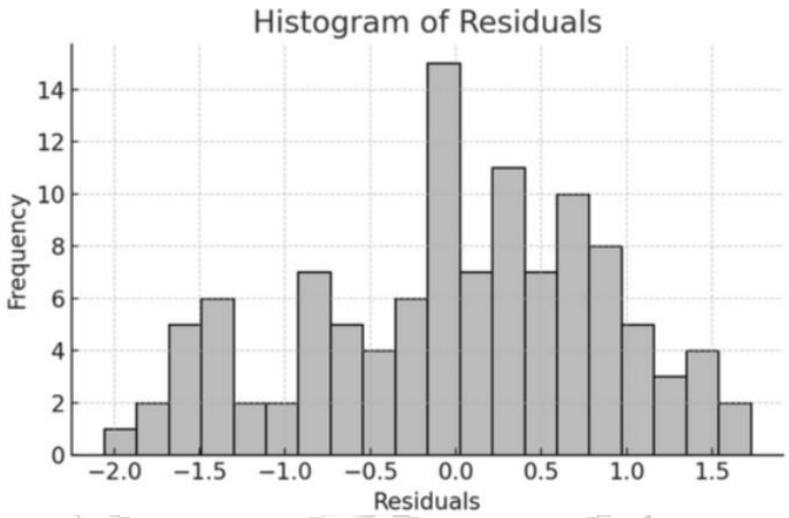


Figure 1 Histogram of Residuals

The Breusch-Pagan test was applied to assess whether the variance of the residuals remained constant across all levels of the independent variables (i.e., no heteroscedasticity). With a p-value of 0.169**,** the test fails to reject the null hypothesis of constant variance, indicating that the assumption of homoscedasticity is satisfied**.**

Table 4.9 Breusch-Pagan Test Results

Test	Statistic	p-value	Conclusion
Breusch-Pagan	1.89	0.169	Homoscedasticity present

Multicollinearity was assessed using VIF. The results for the base model are summarized below:

Table 4.10 The Results for the Base Model

Variable	**VIF**
Product Innovation	2.36
Process Innovation	3.37
Tech Innovation	3.34
Marketing Innovation	5.31
Constant	23.58

All VIF values for the predictors are well below the commonly accepted threshold of 10**,** indicating that multicollinearity is not a major concern. The slightly elevated VIF for marketing innovation (5.31) is acceptable and expected given the conceptual overlap between innovation dimensions.

4.7 Regression Results

This section presents the results of a multiple regression analysis that examined the effect of product innovation alongside process, technological, and marketing innovations on financial inclusion. The findings were drawn from the base model, which included only the four innovation variables as predictors.

4.7.1 Product Innovations on Financial Inclusion

A regression analysis was conducted using product innovation as the independent variable and financial inclusion as the dependent variable. The model produced an R-squared value of 0.098**,** indicating that product innovation explains approximately 9.8% of the variance in financial inclusion among the sampled SACCOs (Table 4.11). The model was statistically significant (F (1,110) = 11.97, p = 0.001), confirming that product innovation contributes meaningfully to predicting levels of financial inclusion.

Table 4.1 Model Summary Statistics for Objective 1

Metric	Value
Number of Observations	112
R-squared	0.098
Adjusted R-squared	0.090
F-statistic	11.97
Prob > F	0.001

The regression coefficient for product innovation was β = 0.364, and this relationship was statistically significant at the 1% level (p = 0.001) (Table 4.12). The 95% confidence interval for the coefficient ranged from 0.155 to 0.572, which does not include zero, further confirming the robustness of the positive effect.

Table 4.2 Regression Coefficients

Variable	Coefficient (β)	95% Confidence Interval	*p*-value
Intercept	1.643	CI: 0.839 to 2.447	< 0.001
Product Innovation	0.364	CI: 155 to 0.572	0.001

The interpretation of this coefficient implies that for every one-unit increase in the level of product innovation (measured by improvements, differentiation, and diversification of financial products) a 0.364-unit increase in financial inclusion is expected, all else being equal. This result suggested that SACCOs that develop tailored, flexible, and member-centered financial products are more likely to achieve higher levels of financial inclusion. Practically, this may include the introduction of customized savings accounts, youth- or women-specific loan packages, or flexible repayment schemes designed to meet the needs of underserved populations. These innovations can remove traditional access barriers and encourage broader participation in SACCO services. The results affirmed the critical role that product innovation plays in advancing financial inclusion. By aligning product design with member needs, SACCOs not only improve service uptake but also contribute to the broader goal of inclusive financial development.

4.7.2 Process Innovations on Financial Inclusion

A regression analysis was conducted with process innovations as the independent variable and financial inclusion as the dependent variable. The R-squared value of 0.021 indicated that process innovations explain only 2.1% of the variance in financial inclusion across the SACCOs (Table 4.13). Although this represents a positive relationship, the explanatory power of the model was relatively weak. The model produced an F-statistic of 2.37, with a corresponding p-value of 0.127, indicating that the model as a whole was not statistically significant at the 5% level. This suggested that the effect of process innovations on financial inclusion was not strong enough to be considered statistically reliable.

Table 4.13 Model Summary Statistics – Objective 2

Metric	Value
Number of Observations	112
R-squared	0.021
Adjusted R-squared	0.012
F-statistic	2.37
Prob > F	0.127

The coefficient for process innovations was β = 0.143, with a 95% confidence interval of -0.041 to 0.327 (Table 4.14). The p-value associated with this coefficient was 0.127, confirming that the relationship was not statistically significant.

Table 4.14 Regression Coefficients – Objective 2

Variable	Coefficient (β)	95% Confidence Interval	*p*-value
Intercept	2.463	CI: 1.733 to 3.193	< 0.001
Process Innovations	0.143	CI: -0.041 to 0.327	0.127

While the positive coefficient suggested that an increase in process innovation could be associated with improved financial inclusion, the lack of statistical significance implied that this effect may be due to chance. In practical terms, this means that operational enhancements such as streamlined client onboarding, cost-efficient processes, and digitized loan application systems, while intuitively important, did not have a measurable standalone impact on financial inclusion in this study. Several factors could explain this result. It is possible that the benefits of process innovations were indirect and might not be immediately visible to SACCO members. Additionally, if such innovations are implemented without corresponding improvements in service awareness or member trust, their effectiveness in expanding inclusion may be muted. Although process innovations was conceptually linked to improved service efficiency, this study did not find statistically significant evidence to support a direct effect on financial inclusion among non-WDT SACCOs in Nairobi County.

4.7.3 Technological Innovations on Financial Inclusion

A linear regression model was applied using technological innovations as the predictor and Financial Inclusion as the outcome variable. The model yielded an R-squared value of 0.027, indicating that technological innovation accounts for 2.7% of the variance in financial inclusion among the SACCOs studied (Table 4.15). While this is a modest level of explanatory power, it indicates a small association between the two variables. The regression model had an F-statistic of 3.02 and a p-value of 0.085, suggesting marginal significance at the 10% level but not at the conventional 5% threshold. Thus, the effect of technological innovation on financial inclusion was statistically weak and should be interpreted with caution.

Table 4.15 Model Summary Statistics for Objective 3

Metric	Value
Number of Observations	112
R-squared	0.027
Adjusted R-squared	0.018

F-statistic	3.02
Prob > F	0.085

The regression coefficient for technological innovations was β = 0.178, with a 95% confidence interval of -0.025 to 0.381 (Table 4.16)**.** The associated *p*-value of 0.085 indicates that the coefficient was not statistically significant at the 5% level, though marginally significant at the 10% level.

Table 4.16 Regression Coefficients for Technological Innovations

Variable	**Coefficient (β)**	**95% Confidence Interval**	***p*-value**
Intercept	2.331	CI: 1.533 to 3.129	< 0.001
Technological Innovation	0.178	CI: -0.025 to 0.381	0.085

The positive sign of the coefficient suggests that increased technological innovation is associated with improved financial inclusion. This implied that SACCOs adopting technologies such as Internet banking, mobile money integration, and virtual services might contribute to greater accessibility and usage of financial services. However, the lack of statistical significance indicated that the observed relationship was weak and may not be reliable when generalized beyond this sample. One possible explanation for this finding is that technology infrastructure alone may not directly influence inclusion unless accompanied by adequate member training, awareness, or usability improvements. For example, having mobile banking functionality does not guarantee uptake if members are not confident in using it or lack smartphones and connectivity.

4.7.4 Marketing Innovations on Financial Inclusion

A linear regression analysis was conducted with marketing innovations as the independent variable and financial inclusion as the dependent variable. The model produced an R-squared value of 0.096**,** indicating that marketing innovations explain 9.6% of the variation in financial inclusion across the sampled SACCOs (Table 4.17). This represents a moderate explanatory power in the context of behavioral and organizational studies. The model was

statistically significant with an F-statistic of 11.73 and a p-value of 0.001**,** showing that marketing innovation has a meaningful and reliable relationship with financial inclusion.

Table 4.17 Regression Coefficients for Technological Innovations

Metric	Value
Number of Observations	112
R-squared	0.096
Adjusted R-squared	0.088
F-statistic	11.73
Prob > F	0.001

The regression coefficient for marketing innovations was β = 0.334**,** with a 95% confidence interval ranging from 0.141 to 0.527 (Table 4.18)**.** The associated *p*-value of 0.001 confirms that the effect is statistically significant at the 1% level.

Table 4.18 Regression Coefficients for Marketing Innovations

Variable	Coefficient (β)	95% Confidence Interval	*p*-value
Intercept	1.724	CI: 0.958 to 2.490	< 0.001
Marketing Innovation	0.334	CI: 0.141 to 0.527	0.001

The positive and statistically significant coefficient implied that SACCOs that engage in marketing innovations, such as digital promotions, personalized messaging, and multi-channel outreach tend to have higher levels of financial inclusion. Specifically, for every one-unit increase in marketing innovation, there was a predicted 0.334-unit increase in financial inclusion, holding all else constant. This result supported the argument that effective communication and client engagement strategies were essential in promoting awareness, trust, and uptake of financial services, particularly among marginalized or underserved populations. Tools like SMS notifications, WhatsApp engagement, targeted email campaigns, and community outreach events can all play a crucial role in improving financial literacy and encouraging the usage of SACCO services.

4.7.5 Moderating Role of Regulations on Financial Inclusion

This section presents the findings related to the fifth and final research objective, which was to examine the moderating effect of financial regulatory frameworks on the relationship between financial innovation and financial inclusion among non-WDT SACCOs in Nairobi County**.** To test this objective, a multiple regression model was estimated, incorporating all four types of financial innovation **(**product**,** process**,** technological**,** and marketing innovations) along with the financial regulatory framework as a moderator. Interaction terms between each innovation type and the regulatory framework were created to assess moderation. All variables were mean-centered before creating interaction terms to reduce multicollinearity. The model's overall R-squared was 0.321 (Table 4.19)**,** indicating that approximately 32.1% of the variation in financial inclusion was explained by the predictors and their interactions. The adjusted R-squared was 0.262, suggesting a solid model fit. The F-statistic was 5.37 with **a** p-value < 0.001, indicating the model was statistically significant (Table 4.19).

Table 4.19 Model Summary Statistics for Objective 5

Metric	Value
Number of Observations	112
R-squared	0.321
Adjusted R-squared	0.262
F-statistic	5.37
Prob > F	< 0.001

The results for the individual coefficients are summarized below:

Table 4.20 Regression Coefficients – Moderation Model

Variable	Coefficient (β)	95% Confidence Interval	*p*-value
Intercept	—	—	—
Product Innovation	-0.377	-0.871 to 0.118	> 0.05
Process Innovations	-0.664	-1.645 to 0.316	> 0.05
Technological Innovations	-0.545	-1.239 to 0.148	> 0.05
Marketing Innovations	1.133	-0.301 to 2.566	> 0.05
Financial Regulatory Framework	0.077	-0.799 to 0.953	> 0.05
Product × FRF Interaction	2.488	-0.615 to 5.590	> 0.05
Process × FRF Interaction	4.669	-2.866 to 12.205	> 0.05
Tech × FRF Interaction	0.928	-4.069 to 5.925	> 0.05
Marketing × FRF Interaction	-2.134	-13.207 to 8.939	> 0.05

The regression model demonstrated that the financial regulatory framework did not significantly moderate the relationship between any of the four innovation types and financial inclusion. Although some interaction terms such as product × regulation (β = 2.488) and process × regulation (β = 4.669) were positive, their wide confidence intervals and non-significant p-values indicate that these effects are not statistically reliable (Table 4. 20. Moreover, the main effects of product, process, and technological innovations were not significant in this moderated model, suggesting that when considered alongside regulatory interaction, their direct effects on financial inclusion become muted. Marketing innovations retained a marginally positive effect (β = 1.133), but their interaction with regulation was negative and also not significant.

These findings imply that while regulation might provide an enabling environment, it did not significantly enhance or hinder the influence of innovation strategies on financial inclusion. The regulatory framework might act as a baseline compliance condition rather than a dynamic lever that shapes the impact of innovation across SACCOs. In practical

terms, this suggests that SACCOs should not rely solely on regulatory support to boost innovation effectiveness. Instead, they must complement compliance with internal innovation capabilities, staff training, customer engagement, and technology integration to drive inclusive outcomes.

4.5 Conclusion

This chapter presented the findings from the analysis of data collected to assess the effect of financial innovations on financial inclusion among non-WDT SACCOs in Nairobi County. The chapter systematically addressed each of the five research objectives through descriptive statistics, correlation analysis, diagnostic tests, and regression models.

The study achieved an excellent response rate of 84.8%, with high internal reliability reported across all measurement constructs. Descriptive statistics revealed a generally high level of agreement among SACCO respondents regarding their engagement in various forms of innovations (product, process, technological, and marketing). Respondents also strongly perceived regulatory frameworks as supportive of innovation, though some concerns regarding regulatory burdens were evident.

Correlation analysis indicated that financial inclusion was most positively associated with product and marketing innovations. Technological and process innovations demonstrated weaker positive correlations. Importantly, strong intercorrelations were observed among innovation types, particularly between marketing and technological innovations, suggesting conceptual overlap.

Regression analysis for objective 1 found that product innovations had a statistically significant positive effect on financial inclusion, reinforcing its role in driving the accessibility and relevance of services. For objective 2, process innovations showed a positive but statistically insignificant effect, indicating a limited direct influence on inclusion outcomes. Objective 3 results revealed a marginally significant and weak effect of technological innovations, suggesting that digital platforms alone may not sufficiently advance financial inclusion without supporting strategies. Objective 4 established a

statistically significant and positive relationship between marketing innovations and financial inclusion, highlighting the importance of outreach and communication.

For Objective 5, a moderation model incorporating the financial regulatory framework showed that while the overall model was statistically significant, none of the individual interaction terms were significant. This indicated that the regulatory framework did not meaningfully moderate the relationship between innovation and financial inclusion. The chapter confirmed the critical influence of product and marketing innovations while pointing to the need for a more integrated approach to process and technological innovation. The regulatory framework, though largely viewed as enabling, does not significantly alter the impact of innovations on financial inclusion outcomes.

CHAPTER FIVE: DISCUSSION AND CONCLUSIONS

5.1 Introduction

This chapter presents a comprehensive discussion of the research findings in relation to the study's objectives, the theoretical framework, and existing empirical literature. The aim is to interpret the results meaningfully, highlight patterns and deviations, and assess the implications of the findings for financial inclusion practices among regulated non-WDT SACCOs in Nairobi County. The discussion adopts a thematic structure aligned with the five research objectives and integrates insights from both theoretical perspectives and prior studies.

The study set out to investigate how financial innovations, namely product, process, technological, and marketing innovations, contribute to financial inclusion in regulated non-WDT SACCOs, and whether financial regulatory frameworks moderate these relationships. These objectives were grounded in three core theories: the Financial Intermediation Theory, the Diffusion of Innovation Theory, and the Financial Innovation Theory. These theories provided the conceptual basis for understanding how SACCOs implement innovations, how members adopt new services, and how regulations influence these dynamics. Each objective is discussed in its section. The findings are first interpreted in the specific context of SACCO operations, followed by a detailed comparison with existing empirical studies. This approach enables a holistic understanding of how innovative practices are perceived and operationalized in the SACCO sector, and how these practices translate into inclusive financial outcomes.

5.2 Summary of Findings

The study's findings revealed a strong positive association between financial inclusion and both product innovations and marketing innovations. In contrast, weaker correlations were observed with technological and process innovations. Regarding the moderating variable, although regulatory frameworks are generally perceived as supportive, they did not significantly influence the relationship between innovations and financial inclusion within

the context of this study. While regulation remains conceptually important, its role appears to function more as an enabling environment rather than a direct determinant of outcomes.

5.3 Discussion of Findings

This section presents a detailed discussion of the study's findings above in relation to each research objective: the influence of product innovations, process innovations, technological innovations, and marketing innovations on financial inclusion. The moderating variable of regulation is also discussed. Each objective is examined separately, with the current results compared to those of prior studies and interpreted within the theoretical frameworks outlined earlier.

5.3.1 Product Innovations on Financial Inclusion

The study found that product innovations play a crucial role in enhancing financial inclusion within regulated non-WDT SACCOs. SACCOs that engaged in continuous improvement and diversification of their financial products, such as introducing flexible loan structures, goal-specific savings products, and customized financial solutions reported higher inclusion outcomes. Respondents generally agreed that their institutions had made deliberate efforts to adapt products to meet member needs, which in turn contributed to improved access and usage of financial services.

These findings suggest that product innovations enhance not only the availability of services but also their relevance to previously underserved groups. Tailored products appear to lower psychological and structural barriers, making SACCOs more attractive and accessible to low-income and informal sector members. When savings products are designed around life goals (education, emergencies, retirement), they become more relatable and easier to adopt. Similarly, innovations in loan structuring such as flexible collateral terms or grace periods help bridge access gaps, especially for first-time borrowers.

The results also suggest that product innovations support deeper engagement with existing members by improving satisfaction and financial literacy. When members find value in the

uniqueness or utility of a financial product, they are more likely to use it consistently and recommend it to others, creating a positive cycle of outreach and retention. Overall, the findings affirm that product innovations are not merely a competitive strategy, but a practical driver of inclusion. By embedding responsiveness into product design, SACCOs are better positioned to meet the evolving needs of diverse member profiles, thus advancing the broader agenda of inclusive finance. The success of these innovations, however, also depends on how well they are communicated and complemented by other dimensions such as marketing, technology, and enabling regulations.

The finding that product innovations significantly enhance financial inclusion within non-WDT SACCOs aligns strongly with several theoretical and empirical perspectives discussed in the literature review. Product innovations, as highlighted in this study, involve introducing or improving financial products to suit the evolving needs of SACCO members. This aligns with financial innovations theory (Silber, 1975), which argues that financial institutions innovate in response to constraints in their operating environment, such as regulatory limitations, changing consumer needs, or competitive pressures. In the SACCO context, product innovations serve as a strategic response to the demand for accessible and adaptable financial services among underserved populations.

Empirical studies have supported this theoretical position. For instance, Kipkoech and Mokeira (2017) found that financial product innovations significantly influenced financial inclusion in SACCOs by enhancing accessibility and convenience for members. SACCOs that introduced diversified loan products and flexible savings schemes were better positioned to attract and retain low-income clients, thus extending financial services to traditionally excluded groups. Similarly, Ayieko and Tirimba (2019) concluded that SACCOs that developed specialized savings products, such as child education plans and retirement schemes, experienced increased membership growth and product uptake.

The results of the present study are also consistent with the Diffusion of Innovation Theory (Rogers, 1995), which explains how innovations spread through a population based on their perceived advantage, compatibility, complexity, and observability. SACCO members are more likely to adopt new or improved financial products when they perceive them as

useful, understandable, and aligned with their values or needs. For example, goal-oriented savings accounts and group-based lending structures are innovations that resonate with the financial realities of many SACCO members, particularly those in informal employment. As such, product innovation enhances not just access but also usage and satisfaction.

Furthermore, Nyaanga and Kiprono (2020) emphasized that when SACCOs invest in product customization based on customer feedback, they experience higher levels of trust and engagement, which in turn drive inclusive outcomes. Their study in Kisii County revealed that members were more likely to use SACCO services consistently when products reflected their socio-economic needs and financial literacy levels. This reinforces the finding from the current study that SACCOs with stronger product innovation frameworks are more effective in reaching marginalized or financially inexperienced populations.

The study's findings also resonate with Financial Intermediation Theory (Goldsmith, 1969), which posits that financial intermediaries improve economic efficiency by mobilizing savings, allocating capital, and facilitating risk management. In SACCOs, product innovations enhance the intermediation role by introducing savings and credit products that better match the cash flows and risk profiles of their members. This not only boosts uptake but also promotes responsible usage and repayment, thereby supporting the broader goals of sustainable financial inclusion.

International evidence also supports the finding. Hassan et al. (2021) in Uganda reported that SACCOs that introduced low-threshold saving products, mobile-linked accounts, and microloan options were more successful in onboarding excluded rural populations. They noted that success was highest when these products were culturally relevant, simple to understand, and required minimal documentation. This mirrors the findings in Nairobi County, where member-centric product design was identified as a critical success factor.

However, some studies offer a different view. Mugo and Kihoro (2017) argued that product innovation, while important, may be insufficient on its own if not supported by adequate member awareness and staff training. They observed that even well-designed products can

fail to gain traction if front-line SACCO employees do not effectively communicate their benefits. This underscores the need for integrating product innovation with supportive marketing and capacity-building efforts as highlighted in the discussion on Marketing Innovations and Financial inclusion.

In summary, the study's findings on product innovation are well-supported by both theory and empirical research. Financial Innovation Theory and Diffusion of Innovation Theory provide the conceptual grounding for understanding how product relevance and adaptability drive adoption. Empirical studies confirm that product innovation improves financial access, promotes sustained usage, and strengthens member loyalty key outcomes that define inclusive financial ecosystems. The results also reinforce that SACCOs must not only innovate in product design but must also ensure those innovations are meaningful, well-targeted, and supported by broader organizational capacity.

5.3.2 Process Innovations on Financial Inclusion

The study found that process innovations had a relatively mixed and marginally negative effect on financial inclusion among non-WDT SACCOs. While SACCOs have embraced certain operational improvements such as digital client onboarding, online loan processing, and cost-saving workflows. these efforts have not consistently translated into improved financial inclusion outcomes. In many cases, the implementation of process innovations has faced institutional limitations, including inconsistent digital adoption, staff resistance to change, and inadequate system integration.

This finding suggests that while process innovations are conceptually aligned with the goals of enhancing service efficiency and access, it may not yield direct or immediate inclusion benefits unless paired with strong execution, staff training, and user-centered design. Improvements in processes often occur behind the scenes and may not be perceived directly by members, especially when communication and user experience are not prioritized. As such, process innovation in isolation may improve internal operations but fall short of deepening financial outreach or usage.

Moreover, the marginally negative association observed in the study could point to disruptions or inefficiencies introduced during the transition to new systems or procedures. For example, the shift to digital onboarding or paperless loan processing may have been implemented without adequate member sensitization, resulting in confusion or disengagement, particularly among older or less tech-savvy clients.

In some SACCOs, rigid policies or inadequate IT infrastructure may have also limited the scale or effectiveness of process innovations. This indicates that process improvement must go beyond automation to include redesigning workflows, reducing bureaucratic steps, and simplifying service delivery in ways that resonate with member expectations and capacities. Overall, the findings point to a need for SACCOs to approach process innovation more holistically, ensuring that operational changes are aligned with inclusion goals and supported by both technological readiness and organizational culture.

The findings on process innovation suggest that, unlike product and marketing innovations, operational improvements alone may not consistently or directly enhance financial inclusion among non-WDT SACCOs. From a theoretical standpoint, Diffusion of Innovation Theory (Rogers, 1995) emphasizes that the successful adoption of an innovation depends not only on its inherent advantages but also on how well it fits into existing user practices. In the case of SACCOs, process innovations such as digital client onboarding, online loan applications, and automated internal workflows may offer clear operational efficiencies, but if these changes are not intuitive or inclusive, their benefits may bypass certain member groups particularly the less digitally literate or older populations. This reflects the complexity and compatibility dimensions of the diffusion model, which may not have been fully addressed during implementation.

Empirical studies reinforce this interpretation. Oruo (2018) found that many SACCOs in Kenya that had adopted automated loan processing and member registration platforms did not experience proportional increases in financial outreach. The study attributed this to poor system usability and low member awareness of the new processes. Similarly, Mugo and Kihoro (2017) noted that while automation reduced staff workload, it often failed to improve client experience when not paired with proper training and user interface

enhancements. Their findings mirror the present study's result, where the shift in internal operations did not translate into increased inclusion.

The findings can also be interpreted through the lens of Financial Intermediation Theory (Goldsmith, 1969), which posits that institutions facilitate financial inclusion by efficiently allocating resources and minimizing transaction costs. While process innovation is expected to support this function, the theory also assumes that intermediaries must be responsive and transparent in their operations. In practice, the SACCOs in this study may not have fully operationalized these expectations especially in terms of simplifying processes from the member's perspective. As a result, despite investing in technological upgrades or workflow re-engineering, the failure to make the changes member-friendly or widely understood could explain the limited impact on inclusion outcomes.

Interestingly, Hassan et al. (2021) in their study on Ugandan SACCOs found that process innovations contributed positively to financial inclusion only when paired with ongoing member education and customer support. They highlighted that members were often hesitant to use digital platforms for loan applications or account updates due to fears of errors or misunderstanding the system. In these cases, SACCOs that maintained hybrid models, both digital and face-to-face support achieved higher satisfaction and usage rates. The lack of similar complementary measures in some Kenyan SACCOs might explain why the process improvements did not yield strong inclusion benefits in the current study.

On a more optimistic note, Ayieko and Tirimba (2019) reported that when process innovations were user-driven they resulted in improved turnaround time, reduced queuing, and better accessibility for rural clients. This suggests that process innovation can indeed foster inclusion, but only under conditions where user experience is prioritized during design and implementation. The present study's findings diverge from these more positive outcomes, potentially due to variability in how process innovation is interpreted and operationalized across SACCOs in Nairobi County.

The marginally negative relationship observed may be a reflection of implementation gaps or transitional friction. Process innovation often requires substantial organizational change,

staff retraining, and a cultural shift toward efficiency and adaptability. Where these elements are lacking or resisted, innovations can create confusion or service delays, at least in the short term. As Kipkoech and Mokeira (2017) suggest, process innovation in SACCOs often fails when it is introduced as a top-down technical solution rather than as a strategic, member-focused transformation.

The present study's findings add to a growing body of evidence suggesting that process innovation must go beyond automation and internal streamlining to focus on the quality, accessibility, and responsiveness of services. Theories of innovation and intermediation support this view by highlighting the need for compatibility, simplicity, and value-addition in any operational change. The results call for a more holistic and inclusive approach to process innovation one that combines technology, human-centered design, and continuous member engagement.

5.3.3 Technological Innovation on Financial Inclusion

The study revealed that technological innovations had a weak and statistically insignificant influence on financial inclusion among non-WDT SACCOs. This finding suggests that, while SACCOs have adopted various digital platforms such as Internet banking, mobile banking applications, and virtual service interfaces, these technological tools have not, on their own, been sufficient to significantly improve financial access, usage, or quality of services for members.

Several possible explanations account for this limited impact. First, technological innovations may have been adopted more as a compliance or modernization strategy than as a carefully planned inclusion tool. SACCOs might have introduced digital systems without aligning them to the specific needs or capacities of their member base. For example, mobile banking may be available, but if members lack smartphones, digital literacy, or trust in digital channels, usage will remain low. This gap between technological availability and actual adoption limits the effect of innovation on inclusion.

Second, technology may be functioning more as a support structure rather than a driver of innovation. Tools like mobile apps or online portals may facilitate back-end efficiency and

data storage but do not necessarily translate into meaningful financial engagement unless members are motivated, trained, and aware of the benefits. Additionally, SACCOs may have underinvested in member education and support systems needed to build confidence in these digital solutions.

Lastly, disparities in infrastructure, internet access, and device availability especially in low-income or rural areas, may hinder effective utilization. Therefore, while technological innovations offer immense potential, their influence on financial inclusion appears contingent on other enabling conditions such as product design, member engagement, and trust-building measures. These findings point to the need for complementary strategies to bridge the gap between technology deployment and inclusive financial impact.

Theoretically, Financial Intermediation Theory (Goldsmith, 1969) acknowledges the role of technology in reducing transaction costs and enhancing service delivery efficiency. However, it also emphasizes that intermediaries must align tools with client realities to fulfill their inclusion function. In the current study, SACCOs may have introduced technological platforms that did not sufficiently consider end-user accessibility, readiness, or preferences thus the low uptake and minimal inclusion gains.

Similarly, the Diffusion of Innovation Theory (Rogers, 1995) explains that innovation adoption depends on more than availability; factors like perceived usefulness, ease of use, and observability play central roles. In SACCOs serving diverse populations, digital innovations such as internet portals or mobile apps may not be perceived as easy to use or may require significant behavior change. Without a clear perceived advantage, adoption and thus impact remain low.

Empirically, several studies support the present findings. Ndungu and Omwenga (2021) studied SACCOs in Nairobi's informal settlements and found that despite the availability of mobile banking platforms, member adoption was limited due to a lack of awareness, low smartphone penetration, and fear of fraud. Their study revealed that only 39% of SACCO members used digital platforms regularly, and many preferred face-to-face interactions.

Barasa and Mutua (2020) also observed that the deployment of digital financial services in SACCOs across Machakos County failed to improve financial access among low-income women. They attributed this to the failure of SACCOs to offer user training, as well as a lack of gender-sensitive digital literacy programs. In this sense, technology was present, but not usable or empowering for the target population.

A broader continental view is offered by Kabir and Rupa (2020), who analyzed cooperative societies in Ghana. They noted that SACCOs that introduced fintech-based services without engaging members in the design process saw negligible improvement in inclusion metrics. Their conclusion was that digital services need to be socially embedded and trust-enhancing, especially in cooperatives where personal relationships are traditionally central.

Internationally, Suri and Jack (2016) demonstrated the success of Kenya's mobile money platform, M-Pesa, in expanding financial access. However, they also cautioned that such success stories depend on extensive agent networks, strong user training, and wide cultural acceptability. The implication is that technology alone without the broader ecosystem rarely drives transformative inclusion. This is especially true for SACCOs, which may not have the infrastructure or brand reach of large mobile network operators.

The current study's findings also resonate with research on technology fatigue in financial cooperatives. Atambo and Muturi (2022) found that repeated digital upgrades, often made without member consultation, led to confusion, low engagement, and disenchantment among long-time members. These members viewed digital platforms as exclusionary rather than empowering, particularly when updates were not accompanied by support or alternatives.

The findings further challenge the notion that technological innovation is inherently democratizing. Donovan (2012) argued that while technology has opened new frontiers for financial access, it can also reproduce inequalities if it assumes universal digital access and literacy. In the SACCO context, where members are often drawn from marginalized or rural populations, assumptions about digital readiness must be critically examined.

Taken together, the present study reinforces a growing academic and practical consensus: technological innovation must be intentionally inclusive. Digital tools must be tailored to member capacities, supported with training, and implemented with a feedback loop that considers user experience. Without these measures, technological adoption risks becoming a symbolic gesture rather than a genuine pathway to inclusion.

While global and national narratives highlight the promise of fintech and digital finance, the current findings affirm that technology alone is insufficient. Theoretical and empirical literature alike caution that success in financial inclusion depends not merely on digital infrastructure, but on its accessibility, relevance, and support systems. SACCOs must therefore approach technological innovation not as a standalone solution, but as part of a broader member-focused strategy grounded in inclusion, trust, and usability.

5.3.4 Marketing Innovations on Financial Inclusion

The study established that marketing innovations had a consistently positive association with financial inclusion. SACCOs that actively embraced modern marketing approaches such as digital messaging platforms, mobile promotions, and targeted awareness campaigns were more likely to report improved member outreach, product uptake, and service usage. These marketing innovations enhanced visibility and helped bridge the information gap between SACCOs and potential or existing members.

Unlike process or technological innovations, marketing innovations directly influenced how SACCOs engaged with their target audience. Tools such as SMS alerts, WhatsApp broadcasts, and simplified promotional content enabled SACCOs to connect with members in real-time and at scale. This real-time engagement appeared to reduce barriers related to low awareness, uncertainty, and financial illiteracy, factors that often hinder access to formal financial services.

The findings suggest that marketing innovations serves as a key enabler of other forms of innovations. For instance, the success of new savings products or digital loan platforms depends heavily on how well members understand them. By promoting clarity, relevance, and trust, marketing efforts make it more likely that members will adopt new offerings.

This positions marketing not just as a supportive function, but as a strategic driver of inclusion.

Moreover, SACCOs that engaged in community-based outreach and culturally tailored campaigns were more successful in attracting low-income and previously excluded members. By communicating in familiar languages, using accessible media formats, and leveraging local events, these SACCOs aligned their marketing strategies with the socio-economic context of their target populations. In summary, marketing innovation emerged as a practical and impactful approach to expanding financial inclusion. When done strategically and inclusively, it enhances visibility, trust, and product uptake which are key dimensions of inclusive financial service delivery.

The finding that marketing innovations positively influence financial inclusion among regulated non-WDT SACCOs is well-supported by both theoretical and empirical literature. Marketing innovations, defined in this context as the use of new promotional techniques, digital messaging tools, and targeted communication strategies, emerges not only as a supportive function but also as a strategic channel for outreach, education, and member engagement.

From a theoretical perspective, the finding aligns strongly with the Diffusion of Innovation Theory (Rogers, 1995). The theory highlights that for an innovation to be adopted, potential users must first be made aware of its existence and understand its value proposition. Marketing innovations fulfills this critical role by facilitating the dissemination of information about financial products, processes, and technologies. SACCOs that invest in digital campaigns, member education, and personalized messaging are more likely to enhance the adoption rates of their innovations, thereby expanding financial inclusion.

This finding is supported by the work of Makanga and Wambua (2021), who studied SACCOs in Kiambu County and found that digital marketing strategies including mobile SMS promotions, email campaigns, and social media updates, significantly improved membership growth and savings uptake. The authors concluded that targeted and consistent

communication helped dispel myths and build trust, especially among previously unbanked populations.

Mwangi and Njoroge (2020) also found that SACCOs that diversified their marketing approaches beyond traditional posters and word-of-mouth reached a broader demographic, including youths and informal workers. Their study showed that mobile-friendly messaging in local dialects significantly enhanced awareness and engagement. This aligns with the present study's findings that culturally and linguistically inclusive marketing efforts contribute to deeper financial outreach.

Internationally, Rahman et al. (2017) explored marketing innovations in microfinance institutions in Bangladesh and found that client-centered marketing, including storytelling and testimonials, had a strong influence on client trust and retention. These methods mirrored SACCO campaigns observed in the present study that focused on member success stories, peer endorsement, and community visibility to enhance credibility and uptake.

Moreover, Kalunda and Osoro (2022) emphasized the strategic role of marketing in aligning product delivery with member expectations. In their study of SACCOs operating in low-income urban areas, they observed that mobile marketing tools enabled SACCOs to communicate interest rate changes, promote loan products, and deliver financial education tips in real time. This frequent and consistent communication empowered members to make informed financial decisions, thereby improving product usage and loyalty.

The Financial Innovation Theory (Silber, 1975) also reinforces this view. It suggests that innovation thrives in environments where consumers are aware of, and motivated to try, new solutions. In the context of SACCOs, marketing innovation acts as the interface between innovation supply and user demand. It transforms otherwise technical or abstract product offerings into accessible, actionable, and relevant opportunities for financial engagement.

Contrasting perspectives, however, emerge in studies where marketing was present but ineffective due to misalignment with member needs. Otieno and Nyakundi (2018) found that in some SACCOs, digital marketing content was overly technical or generic, leading

to confusion rather than clarity. This highlights that marketing innovation must be purposefully crafted, using language, tone, and channels that are understandable and relevant to the target audience. The present study's findings affirm this by pointing out the success of SACCOs that localized their messages and tailored content based on community profiles.In addition, Wekesa and Muchina (2019) reported that SACCOs that involved members in campaign design such as through feedback loops or co-created content, saw higher engagement and lower dropout rates. Their study suggests that participatory marketing not only informs but also empowers, further strengthening member loyalty and inclusion.

It is also important to recognize marketing innovations as a multiplier for other innovation domains. As observed by Kang'ethe and Mulwa (2021), the rollout of mobile loans in SACCOs across Eastern Kenya was only successful when accompanied by aggressive awareness campaigns. Where members were not properly informed, uptake remained low despite the availability of the service. This reinforces the present study's finding that marketing is not peripheral but central to the success of broader innovation efforts.

Finally, the Financial Intermediation Theory (Goldsmith, 1969) supports the idea that marketing channels are vital in reducing information asymmetry between financial institutions and clients. By improving awareness and simplifying product information, SACCOs can enhance trust, increase service usage, and ultimately fulfill their mandate as inclusive financial intermediaries. The findings affirm that marketing innovation plays a direct and strategic role in enhancing financial inclusion. Theoretical models and empirical evidence converge on the view that effective, accessible, and inclusive marketing strategies help bridge the gap between financial service provision and user engagement. SACCOs that adopt innovative, localized, and tech-enabled marketing approaches are better positioned to reach underserved communities and sustain long-term member participation.

5.3.5 The Moderating Role of Regulation on Financial Inclusion.

The study found that financial regulatory frameworks, particularly regulation support, did not significantly moderate the relationship between financial innovation and financial

inclusion. While regulations were generally perceived as enabling innovation (as indicated by a high mean score in descriptive statistics), their presence did not significantly strengthen or alter how innovations in product, process, technological, or marketing domains impacted financial inclusion outcomes.

This finding suggests that, although SACCOs acknowledge the supportive role of the regulatory environment, the mere existence of such frameworks may not be sufficient to amplify the effectiveness of innovation strategies. It is possible that current regulations focus more on compliance and risk mitigation rather than on directly fostering innovation or removing barriers to inclusive service delivery. In such cases, the supportive tone of regulation does not necessarily translate into meaningful facilitation of inclusion-oriented innovation.

Moreover, the results highlight a gap between perceived regulatory support and its practical impact. Regulations may allow innovations to occur, but they do not actively enhance the relationship between innovations and inclusion unless accompanied by capacity-building, incentives, or operational flexibility. This points to the need for regulatory bodies to play a more dynamic role not just by setting standards but also by promoting financial innovations as a policy tool for social inclusion.

It is also important to consider that the absence of a moderating effect may reflect institutional realities: SACCOs differ widely in how they interpret and implement regulatory guidance. Without consistent alignment between SACCO innovation strategies and regulatory intent, the expected synergistic effects may not materialize. While regulation is recognized as supportive, its influence as a moderating force on the innovation–inclusion relationship remains limited in practice.

The finding that financial regulatory frameworks did not significantly moderate the relationship between financial innovation and financial inclusion diverges from certain expectations in the literature, though it is not entirely unprecedented. While regulations were generally perceived as supportive, their limited moderating effect suggests that

regulatory presence alone does not automatically translate into enhanced innovation outcomes or improved financial access.

From a theoretical perspective, the result calls into question assumptions within the Financial Innovation Theory (Silber, 1975), which posits that innovation in financial institutions is often driven or constrained by regulatory forces. While the theory acknowledges the catalytic role of regulation in stimulating innovation especially where compliance challenges exist it also suggests that poorly designed regulations may lead to strategic stagnation. In the case of SACCOs, this study's findings imply that regulation may not be acting as a meaningful stimulus or constraint, but rather exists in a neutral or background capacity, with minimal interaction effects on innovation outcomes.

Similarly, Financial Intermediation Theory (Goldsmith, 1969) emphasizes the institutional role of financial systems in promoting economic inclusion through effective service delivery. Regulatory frameworks are meant to ensure stability and trust, thereby allowing intermediaries like SACCOs to operate efficiently. However, when regulations are too broad or rigid, they may not create the enabling environment needed for innovation to flourish. The findings suggest that this may be the case in Nairobi County, where the SACCO sector acknowledges regulatory support but does not appear to benefit from it in a way that strengthens the innovation–inclusion link.

Empirical evidence presents a mixed picture. Kamau and Oluoch (2021) examined the regulatory impact on SACCOs in Kenya and found that while SACCOs appreciate the clarity and order brought by the SASRA regulatory framework, the rules do not necessarily promote innovation. Their findings mirror the current study by highlighting that SACCOs often feel bound by administrative compliance without corresponding technical or strategic support for innovation.

Similarly, Musyoka and Mureithi (2019) noted that in some cases, SACCOs see regulations as procedural rather than developmental. Their study found that the focus on quarterly reports, minimum capital ratios, and board oversight structures consumes managerial attention and resources that could otherwise be directed toward service innovation or

member outreach. This suggests that while regulation maintains sectoral integrity, it may unintentionally limit the agility needed to innovate for inclusion.

In contrast, Okello and Ndungu (2020) argued that in certain SACCO environments, proactive regulation has enabled innovation by setting standards that push institutions to digitize services and improve transparency. Their research in Nyeri County showed that regulatory demands for risk classification, record digitization, and customer verification had the indirect effect of encouraging SACCOs to adopt innovative systems. However, this study also highlighted that only SACCOs with adequate capacity were able to leverage these requirements into actual innovation gains.

Globally, similar dynamics are observed. Aron (2018) studied digital financial inclusion in South Africa and concluded that regulatory frameworks, while important for safeguarding consumers, can stifle creativity when overly prescriptive. Innovations such as mobile money and agent banking flourished only after the South African Reserve Bank introduced flexibility around know-your-customer (KYC) rules and allowed tiered account structures. This aligns with the implication in the present study that regulation needs to evolve from being compliance-oriented to becoming more innovation-enabling.

On the other hand, Gurumurthy and Chami (2020) argued that regulatory neutrality where rules neither hinder nor promote innovation often leads to market-driven innovation trajectories, but with unequal outcomes. In such cases, stronger players (like banks or large SACCOs) can afford to innovate, while smaller institutions remain stagnant. The findings from Nairobi's non-WDT SACCOs may reflect this trend, as regulatory structures provide minimal differentiation or support mechanisms tailored to the diverse capacity levels across institutions.

Interestingly, Mwangi and Wanyoike (2021) called for "regulatory co-creation" in Kenya's cooperative sector. Their study emphasized the value of involving SACCOs in regulatory design, ensuring that the rules both protect consumers and reflect the practical realities of service delivery. This view is supported by the present findings, which highlight that

without dynamic regulatory engagement, the potential for synergistic benefits between regulation and innovation remains untapped.

The findings confirm that regulatory frameworks are necessary but not sufficient in promoting inclusive financial innovation. While SACCOs view regulations as structurally supportive, these frameworks do not inherently enhance the effect of innovation strategies unless designed with innovation facilitation in mind. The literature supports the need for regulatory evolution from a passive compliance model to one that incentivizes experimentation, supports digital transitions, and aligns with inclusion goals. Future regulatory approaches should integrate flexibility, capacity development, and institutional responsiveness to unlock the full potential of innovation in SACCO-driven financial inclusion.

5.4 Conclusions

This study investigated the role of financial innovations in promoting financial inclusion among regulated non-WDT SACCOs in Nairobi County, focusing on product, process, technological, and marketing innovations. The findings revealed that marketing innovation had the most significant positive impact on financial inclusion, demonstrating that digital promotions and targeted advertising effectively increase outreach and engagement with underserved populations. Technological innovation also emerged as a critical enabler of financial inclusion, with tools like mobile banking and online loan processing simplifying access to financial services. However, the study identified a nuanced relationship between technological innovation and regulatory frameworks, with stringent regulations occasionally diminishing the effectiveness of such advancements.

While valuable for operational efficiency, process innovations did not significantly influence financial inclusion on their own. Similarly, product innovations showed limited direct impact but remain essential for addressing diverse consumer needs when combined with other innovations. Barriers such as limited financial resources, technological challenges, and resistance to change were identified as key constraints to innovation. At the same time, regulatory frameworks played a dual role as enablers and barriers. The study

highlights the importance of integrating diverse financial innovations and fostering balanced regulations to achieve sustainable financial inclusion in Nairobi County.

The study also revealed several unexpected insights that add depth to understanding financial innovation and inclusion in SACCOs. One of the most surprising findings was the disparity between the adoption of financial innovations and their actual impact on financial inclusion. While mobile banking, digital lending, and process automation were widely adopted, certain populations, particularly older members and low-income groups, remained financially excluded. This indicates that technological advancements alone are insufficient and must be supplemented by financial literacy programs and targeted outreach to ensure widespread adoption. Another unexpected finding was the profit-driven approach to agency banking. While agency banking was initially expected to bridge financial access gaps in remote areas, SACCOs tended to concentrate agents in urban centers with higher transaction volumes, prioritizing profitability over financial inclusion. This highlights a misalignment between innovation goals and implementation strategies, suggesting financial institutions may require policy incentives to direct innovations toward underserved populations.

Lastly, the study found that marketing innovations were highly underutilized despite their proven role in increasing financial literacy and customer engagement. Unlike commercial banks that invest heavily in digital marketing and customer relationship management, SACCOs struggled with branding consistency and outreach, limiting the impact of their financial products. This was surprising, given that awareness and financial education were among the biggest barriers to financial inclusion. These findings suggest that while financial innovation is crucial, its success depends on effective implementation, targeted policies, and consumer education. SACCOs need to align their innovation strategies with inclusion goals to maximize their impact on underserved populations.

5.5 Implications of the Study

The findings discussed above have practical relevance for various stakeholders, as outlined below:

5.5.1 Implications for Theory and Practice

This study offers meaningful contributions to both financial innovation theory and the diffusion of innovation theory within the context of SACCOs. The findings reinforce the central argument of financial innovation theory: that advancements in products, processes, and technology can drive greater access, efficiency, and usability in financial services. Among these, technological and marketing innovations emerged as particularly impactful, indicating that SACCOs that prioritize digital transformation can significantly advance their financial inclusion objectives. This aligns with practical experiences across the sector, where mobile and Internet banking solutions have enabled broader outreach and improved service delivery.

The diffusion of innovation theory is also supported by the adoption patterns observed in the SACCO landscape. Some institutions are embracing innovation faster than others, highlighting the role of early adopters in shaping sectoral progress. However, this study also reveals critical constraints within the diffusion process, particularly internal resistance to change and resource limitations that hinder the widespread uptake of innovation. These challenges point to the need for structured change management strategies within SACCOs.

Practically, the study recommends that SACCOs focus on upskilling their workforce to better handle digital systems and customer-facing technologies. Training programs that enhance both digital literacy and change readiness can help institutions overcome internal barriers and improve adoption rates. Furthermore, SACCOs should not only invest in new technologies but also pair them with effective marketing strategies to raise awareness and encourage usage, especially among underserved populations. The study highlights the importance of combining theoretical frameworks with practical action, ensuring that innovation efforts are inclusive, sustainable, and responsive to the realities of SACCO operations in Nairobi County and beyond.

5.5.2. Policymakers and Regulators

The findings of this study highlight the pivotal role of regulatory frameworks in shaping the success or limitation of financial innovations within SACCOs. While well-structured regulations can foster trust, stability, and consumer protection, overly rigid and bureaucratic frameworks may unintentionally hinder innovation. Many SACCOs face significant delays and financial burdens when attempting to implement new technologies due to extensive compliance requirements and approval procedures.

To support inclusive financial innovations, policymakers are encouraged to adopt risk-based and adaptive regulatory approaches. These should balance oversight with flexibility, allowing SACCOs room to experiment with emerging financial technologies such as mobile platforms, digital lending, and online onboarding systems. Streamlined compliance procedures would enable SACCOs, especially smaller and resource-constrained ones, to adopt new tools more quickly and cost-effectively.

Additionally, this study emphasizes the importance of integrating financial literacy into the regulatory agenda. Innovation alone is insufficient if end-users do not understand or trust the services offered. Regulations should therefore include provisions that support public education campaigns or require financial institutions to provide clear, accessible information to clients. This is particularly relevant for vulnerable and underserved populations who may lack experience with digital financial services.

Lastly, regulators should consider collaborative frameworks that bring SACCOs, fintech companies, and oversight bodies together. Such collaboration can help ensure that regulatory guidelines are informed by practical insights from the field and encourage joint efforts in developing secure, user-friendly innovations. A supportive regulatory environment that promotes innovation and inclusion is essential for SACCOs to thrive and extend financial services to broader segments of the population.

5.5.3 Management of Financial Intermediaries

The study highlights the critical role of SACCO management in translating financial innovations into meaningful financial inclusion. While many SACCOs have introduced mobile banking, digital lending, and agency services, the extent to which these innovations benefit underserved populations depends significantly on management strategies. The findings suggest that some SACCOs focus on commercial outcomes at the expense of inclusion goals, leading to uneven access and low uptake among marginalized groups.

To address this, SACCO leaders are encouraged to integrate inclusion objectives into their innovation strategies. Management should deliberately allocate resources to expand outreach to rural and low-income members, ensuring that technological solutions are not only available but accessible and usable by all. This may involve simplifying financial products, using community-based outreach models, and investing in digital service channels tailored to low-tech environments.

Strategic partnerships with FinTech firms offer a pathway to overcoming many of the barriers faced by SACCOs, including high implementation costs, limited internal capacity, and compliance challenges. These collaborations can provide access to shared infrastructure, cybersecurity solutions, and automated regulatory tools allowing SACCOs to innovate more efficiently and sustainably.

Moreover, the study reveals that many SACCOs lack dedicated marketing and education efforts, which limits the awareness and adoption of new services. To maximize the impact of innovation, management must strengthen internal marketing capacity and prioritize financial education for members. Campaigns that explain the value and safety of new services in simple, relatable language can significantly increase trust and usage, particularly among older or first-time users. SACCO management plays a central role in aligning innovation efforts with financial inclusion outcomes. A deliberate, inclusive, and partnership-driven approach can help SACCOs realize the full potential of innovation in transforming lives and strengthening the financial ecosystem.

5.5.4 Researchers and Academics

This study provides valuable insights for researchers and academics exploring financial innovation, regulatory impact, and financial inclusion in emerging economies. One key implication is the need for further research on how regulatory policies shape financial innovation outcomes**,** particularly within non-traditional financial institutions like SACCOs**.** Future studies should examine long-term regulatory effects and identify best practices for balancing compliance, risk management, and financial inclusion objectives**.**

Most importantly, researchers should focus on the behavioral aspects of financial innovation adoption**,** including consumer perceptions, trust in digital financial services, and the role of financial literacy in shaping financial inclusion. The study suggests that technology alone is insufficient for driving inclusion, and further research could provide evidence-based recommendations on integrating financial education with innovation efforts. Another promising research area is the role of FinTech collaborations in expanding financial access**,** particularly in developing economies where traditional financial institutions face resource and regulatory constraints. Understanding how SACCOs and FinTech firms can work together to optimize digital financial solutions could offer practical strategies for overcoming financial exclusion challenges**.**

5.6 Recommendations for Further Studies

Future research could build on the current study by addressing several areas that were beyond its scope. First, adopting longitudinal research designs would allow future studies to track the evolution of financial innovations and their impact on financial inclusion over time. This approach could provide deeper insights into long-term patterns and causal relationships that a cross-sectional design may not capture. Additionally, expanding the geographic scope beyond regulated SACCOs in Nairobi County to include other counties or types of financial institutions such as commercial banks, microfinance institutions, and fintech companies, would enhance the generalizability of the findings. Urban-specific dynamics, regulatory environments, and technological infrastructures in Nairobi may differ significantly from those in rural areas or other regions, thus comparative studies could offer a more comprehensive national or regional perspective.

To strengthen data reliability, future studies might also consider minimizing reliance on self-reported data from organizational employees by incorporating multiple data sources or mixed methods approaches. This could include customer surveys, independent audits, or performance data, which would help validate findings and reduce potential response bias. Furthermore, given that this study was conducted in the aftermath of the COVID-19 pandemic, a period marked by rapid and sometimes temporary shifts in financial practices, it would be valuable to investigate whether the observed patterns in financial innovations and inclusion persist in more stable, post-pandemic conditions.

From a theoretical standpoint, while this study was grounded in the Financial Innovation Theory and the Diffusion of Innovation Theory, future research could integrate additional perspectives such as Institutional Theory or Organizational Change Theory. These could offer deeper insights into the cultural, structural, and behavioral factors that influence the adoption of financial innovations. Moreover, future research should explore underexamined variables, such as organizational culture or leadership, which may significantly affect how innovation is implemented and how it contributes to financial inclusion. By addressing these areas, subsequent studies can provide a more nuanced and holistic understanding of the complex relationships between financial innovation, regulation, and inclusion.

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APPENDICES

APPENDIX A: SBS ETHICAL APPROVAL

Strathmore UNIVERSITY

21st May 2024

Ms Kayesi Valentine
valentine.kayesi@strathmore.edu

Dear Ms Kayesi,

RE: The Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking Saccos within Nairobi County

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2251/24.** The approval period is from **21st May 2024 to 20th May 2025.**
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 SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

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

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

APPENDIX B: NACOSTI APPROVAL

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **244545**

Date of Issue: **03/June/2024**

RESEARCH LICENSE

This is to Certify that Miss.. Valentine Kayesi Mwika of Strathmore 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: The Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking Saccos within Nairobi County for the period ending : 03/June/2025.

License No: **NACOSTI/P/24/36256**

244545

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

See overleaf for conditions

APPENDIX C: Letter of Introduction to Research Participation.

The Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking Saccos Within Nairobi County, Kenya.

Dear SACCO Representatives,

I extend a warm invitation to take part in the research outlined above, representing your SACCO. Currently pursuing my Master of Commerce Program at Strathmore Business School, I am in the process of composing my master's thesis, a vital component of my academic journey.

Enclosed, you will find a questionnaire tailored to gather insights primarily on five key areas. Part I encompasses general inquiries, while Part II delves into the impact of financial innovation on financial inclusion among Non-WDT SACCOs in Nairobi County. Section III focuses on the drivers of financial innovation, followed by Section IV which addresses the challenges, and lastly, Section V examines the effect of regulatory frameworks on financial innovation and financial inclusion.

Your participation in this research project is entirely voluntary, and there are no anticipated risks involved. Rest assured, your responses will be treated with utmost confidentiality and anonymity. The data collected will be securely stored and reported only in aggregated form. Only the researcher will have access to your questionnaire responses. Should you choose to participate, kindly respond to the questions to the best of your ability. The questionnaire is designed to take approximately ten to fifteen minutes to complete.

Upon completion, please return the questionnaire at your earliest convenience. Your contribution to this endeavor is greatly appreciated.

Thank you for your valuable assistance.

Yours Sincerely,
Valentine Kayesi.

APPENDIX D: Participant Information and Consent Forms

PARTICIPANT INFORMATION AND CONSENT FORM

STUDY TITLE: The Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking Saccos Within Nairobi County.

RESEARCHER NAME: Kayesi Valentine Mwika.

INSTITUTIONAL AFFILIATION: Strathmore University.

INTRODUCTION.

My name is Valentine Kayesi, and I am a Master of Commerce finance student at Strathmore University. I am the principal researcher in the study on The Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking Saccos Within Nairobi County, Kenya. You are being asked to participate in this study because you are eligible. The survey will take approximately 10–15 minutes with an opportunity for the respondent to ask questions. This consent form informs you about the study's purpose, procedure, risks, benefits, confidentiality/privacy, and expected process. Please sign your name at the bottom of this form if you agree to participate.

PURPOSE OF THE STUDY

The study aims to examine the Influence of Financial Innovations on Financial Inclusion in Regulated Non-Withdrawable Deposit-Taking SACCOs within Nairobi County, Kenya.

PROCEDURE OF STUDY

If you decide to join the study, you will be asked questions regarding the influence of financial innovations: product, process, marketing, and technological innovations on financial inclusion in your SACCO. You will also respond on the drivers and challenges of financial innovation as SACCOs embrace innovation to achieve financial inclusion.

Lastly, you will be required to give information on the role of regulatory frameworks in financial innovation and their effect on financial inclusion.

VOLUNTARINESS

Study participation will be voluntary, however partial participation is also allowed. If you wish not to respond to all/any questions kindly inform the researcher.

RISKS OF STUDY PARTICIPATION

Although we shall write your details on paper, every effort will be made to protect your privacy and confidentiality while participating in the study. The information provided cannot be identified as belonging to you. The survey will be conducted online, and you will not be required to provide any personal identifying information. Information that will need to be assessed by other persons will be coded to ensure confidentiality.

BENEFITS OF PARTICIPATING IN THE STUDY

The information you provide will help inform SACCOs, regulatory authorities, government, SACCO management, and others on the influence and impact that financial innovations have on financial inclusion in Kenya.

STUDY COSTS

There are no financial costs to you for participating in this study.

RESEARCH RELATED INJURY

It is unlikely that any form of injury could happen to you due to your participation in the study.

If you feel uncomfortable participating in the study, you must inform the researcher.

CONFIDENTIALITY

Every effort will be made towards the confidentiality of the information provided. The information in the questionnaire cannot be traced back to you. You will not be identified personally in any publication relating to this study.

CONTACTS AND QUESTIONS

The Strathmore Ethical Review Committee will approve and review this research. This committee will review the study to protect the participants. Suppose you have any questions about your rights as a research respondent, feel free to contact the researcher Valentine Kayesi at the following email address: valentine.kayesi@strathmore.edu or valentinekayesi@gmail.com. You can also contact The Secretary–Strathmore University Institutional Ethics Review Board, P. O. BOX 59857- 00200 Kenya. You can also email ethicsreview@strathmore.edu or call the Tel number: +254 703 034 375.

YOUR STATEMENT OF CONSENT AND SIGNATURE:

I have read and understood the above information. I consent voluntarily to participate in this study.

.....	.....	
Participant's initials	Signature	Date
.....	.....	
Interviewer's name	Interviewers' signature and date	
.....	.....	
Researcher's name	Researcher's signature and date	

APPENDIX E: Research Questionnaire

This questionnaire aims to collect data that will facilitate the analysis of how financial innovations affect the attainment of financial inclusion among non-WDT SACCOs in Nairobi County. It also aims to review the moderating role of regulatory frameworks on financial innovation and financial inclusion.

Confidentiality

Responses provided in this questionnaire will be private and confidential and used solely for academic purposes.

Instructions

Kindly make every effort to respond to each of the questions below by either using a tick or a cross on the boxes provided and following the guidelines provided for each of the questions.

SECTION A: BACKGROUND INFORMATION

1. What is the Name of your SACCO?

   ……

2. What is your position/role in the SACCO?

   …….

3. Please indicate your highest attained level of education

   Diploma ( ) Degree ( ) Masters ( ) PhD ( )

4. How long have you worked for SACCO?

   Less than 3 years ( ) 3-7 years ( ) 7- 10 years ( ) 10- 15 years ( ) Over 15 years ( )

5. How long has SACCO been operational?

   Less than 5 years ( ) 5-10 years ( ) 10-15 years ( ) Over 20 years ( )

6. When did you become a regulated Non-Withdrawable Deposit Taking SAACO under SASRA Regulations?

   2020 ( ) 2021 ( ) 2022 ( ) 2023 ( ) 2024 ( )

SECTION B: FINANCIAL INNOVATION ON FINANCIAL INCLUSION

This section seeks information on the effect of financial innovation on financial inclusion among regulated Non-WDT SACCOs in Nairobi County.

7. How often does your SACCO undertake the following types of financial Innovation? Tick one

Innovation	Yearly	Every Two Years	Every Five Years	Never
Product/Service Innovation				
Process Innovation				
Marketing Innovation				
Technological Innovation.				

8. On a scale of 1 to 5, whereby 1 represents the lowest rating while 5 represents the highest rating, please indicate the extent to which you agree with the following statements regarding financial innovations in your SACCO.

		1	2	3	4	5
Description		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Product Innovation	Our SACCO continuously improves the products /services offered to our members					
	The financial products/services offered by our SACCO are highly differentiated.					
	SACCO continuously diversifies its features in saving products					
Process Innovations	Our SACCO has adopted an improved cost-effective process of operations.					
	Our SACCO has introduced digital client onboarding					
	Our SACCO has adopted online loan processing					
Technological Innovation	Our SACCO has embraced the use of Internet and mobile banking in offering services/products to its members					
	Our SACCO offers services/products to members virtually without having to come to the office					
	Our SACCO has ventured into rising super platforms					
Marketing Innovation	Our SACCO has continuously introduced new product/service promotional strategies					
	Our SACCO has adopted the use of SMS, MMS, Emails, and WhatsApp to ensure product/service awareness					
	Our SACCO regularly engages in digital marketing					

9. In your opinion, how do the following financial innovations lead to financial inclusion? Tick one for each

		1	2	3	4
Description		Usage	Quality	Impact	Access
Product Innovation	Our SACCO continuously improved the products and services offered to our members				
	The financial products and services offered by our SACCO are highly differentiated.				
	SACCO continuously diversifies on its features in saving products				
Process Innovations	Our SACCO has adopted an improved cost-effective process of operations.				
	Our SACCO has introduced digital client onboarding				
	Our SACCO has adopted online loan processing				
Technological Innovation	Our SACCO has embraced the use of Internet and mobile banking in offering services and products to its members				
	Our SACCO offers services and products to members virtually without having to come to the office				
	Our SACCO has ventured into rising super platforms				
Marketing Innovation	Our SACCO has continuously introduced new product/service promotional strategies				
	Our SACCO has adopted the use of SMS, MMS, Emails, and WhatsApp to ensure product/service awareness				
	Our SACCO regularly engages in digital marketing				

SECTION C: EFFECTS OF REGULATIONS ON FINANCIAL INNOVATION.

The Section seeks information on the effects of financial regulation on financial innovation.

10. To the best of your knowledge, has the SACCO regulatory authority accorded you the support needed to implement your innovations?

YES ( ) NO ( )

Why?

……

……

11. In your opinion, do the regulations put up by SACCO Societies Regulatory Authority (SASRA) undermine the extent to which your SACCO can innovate financial products?

YES ( ) NO ( )

Why?

……

……

12. What do you think the regulator should do to ensure that financial innovations in the SACCO aid financial inclusion?

……

……

APPENDIX C: List of Regulated Non- Withdrawable Deposit-Taking SACCOs

	Names Of the Regulated Non-Withdrawable Deposit Taking Sacco Society	Postal Address Physical Location of Head Office	County location of Head Office
1	Accel Regulated Non-WDT-Sacco	P.O Box 64900 - 00620, Muthaiga	Nairobi
2	Adventist Regulated Non-WDT-Sacco	P.O Box 41352 - 00100, Nairobi	Nairobi
3	AIBK Regulated Non- WDT-Sacco	P.O. Box 56928 - 00200, Nairobi	Nairobi
4	Airlink Regulated Non-WDT-Sacco	P.O. Box 69979 - 00400, Nairobi	Nairobi
5	AMREF Regulated Non-WDT-Sacco	P.O. Box 18604- 00100, Nairobi	Nairobi
6	Appollosure Regulated Non-WDT- Sacco	P.O. Box 30389-00100, Nairobi	Nairobi
7	8 -Smart Regulated Non-WDT-Sacco	P.O. Box 566- 00515, Nairobi	Nairobi
8	Ballot Regulated Non- WDT-Sacco	P.O Box 45371- 00100, Nairobi	Nairobi
9	Balozi Regulated Non- WDT-Sacco	P.O Box 11539 - 00400,	Nairobi
10	Bands Regulated Non- WDT-Sacco	P.0 Box 10614 - 00100, Nairobi	Nairobi
11	Banki Kuu Regulated Non-WDT-Sacco	P.0 Box 60000 - 00200, Nairobi	Nairobi
12	Barabara Regulated Non-WDT-Sacco	P.O Box 9632 - 00200, Nairobi	Nairobi
13	Baraka Yetu Regulated Non-WDT- Sacco	P.O Box 8070 - 00200, Nairobi	Nairobi
14	BAT Regulated Non-WDT-Sacco	P.0 Box 30000 - 00100, Nairobi	Nairobi
15	Biblia Regulated Non-WDT-Sacco	P.O Box 7041-00300, Nairobi	Nairobi
16	Blue Eagle Regulated Non-WDT-Sacco	P.O Box 30120 - 00100, Nairobi	Nairobi
17	Braemeg Regulated Non-WDT-Sacco	P.O Box 45112 - 00100, Nairobi	Nairobi
18	Bunge Regulated Non-WDT-Sacco	P.O Box 41842- 00100, Nairobi	Nairobi
19	CDF Regulated Non-WDT-Sacco	P.O. Box466B2-00100, Nairobi	Nairobi
20	CIC Regulated Non-WDT-Sacco	P.O. Box 59485 - 00200, Nairobi	Nairobi

21	Cocatech Regulated Non-WDT-Sacco	P.0.Box 15633 - 00503, Nairobi	Nairobi
22	Communications Regulated Non- WDT-Sacco	P.O. Box 1677 - 00606, Westlands	Nairobi
23	Concorde Regulated Non-WDT-Sacco	P.O. Box10690 - 00100, Nairobi	Nairobi
24	Co-operative Bank Regulated Non-WDT-Sacco	P.O. Box 48231- 00100, Nairobi	Nairobi
25	Davis & Shirtliff Regulated Non- WDT- Sacco	P.O Box 41762- 00100, Nairobi	Nairobi
26	Oevco Regulated Non- WDT-Sacco	P.0 Box 30645 - 00100, Nairobi	Nairobi
27	Ohamini Regulated Non-WDT-Sacco	P.0 Box 44749 - 00100, Nairobi	Nairobi
28	OHL Regulated Non- WDT-Sacco	P.0 Box 67577 - 00200, Nairobi	Nairobi
29	Digital Media Regulated Non-WDT- Sacco	P.O Box 69825 - 00400, Nairobi	Nairobi
30	Dudu Regulated Non- WDT-Sacco	P.0 Box 30772 - 00100, Nairobi	Nairobi
31	Embassava Regulated Non-WDT- Sacco	P.O Box 3546 - 00200, Nairobi	Nairobi
32	Energy Regulated Non-WDT-Sacco	P.O. Box 10585 - 00100, Nairobi	Nairobi
33	Equity Regulated Non- WDT-Sacco	P.O. Box 75104 - 00200, Nairobi	Nairobi
34	Exams Regulated Non-WDT-Sacco	P.0 Box 73598 - 00200, Nairobi	Nairobi
35	Family Regulated Non-WDT-Sacco	P.0 Box 38993 - 00200, Nairobi	Nairobi
36	Farmers Choice Regulated Non-WDT- Sacco	P.O Box 4TT91- 00100, Nairobi	Nairobi
37	Faulu Bank Regulated Non-WDT-Sacco	P.O Box 60240 - 00200, Nairobi	Nairobi
38	Finnlemm Regulated Non-WDT-Sacco	P.O Box 67666 - 00200, Nairobi	Nairobi
39	Fugo Regulated Non-WDT-Sacco	P.0 Box 6434- 00300, Nairobi	Nairobi
40	Grand Granite Diaspora Regulated Non-WDT-Sacco	P.O Box 18399 - 00100, Nairobi	Nairobi
41	HaeD Regulated Non-WDT-Sacco	P.O Box 43903 - 00100, Nairobi	Nairobi
42	Heart Regulated Non-WDT-Sacco	P.O Box 70000- 00400, Nairobi	Nairobi
43	HELB Regulated Non- WDT-Sacco	P.0 Box 69489 - 00400, Nairobi	Nairobi

44	HDechem Regulated Non-WDT-Sacco	P.0 Box 30467 - 00100, Nairobi	Nairobi
45	ICEA Agents Regulated Non-WDT- Sacco	P.O Box 46143 - 00100, Nairobi	Nairobi
46	I irrigation Regulated Non-WDT-Sacco	P.0 Box 30372 - 00100, Nairobi	Nairobi
47	Jachin Regulated Non-WDT-Sacco	P.O Box 12502 - 00400, Nairobi	Nairobi
48	Java Regulated Non-WDT-Sacco	P.O Box 21533 - 00505, Nairobi	Nairobi
49	Jagoo Regulated Non- WDT-Sacco	P.0 Box 56074- 00200, Nairobi	Nairobi
50	Jumuia Ya Ulaya Regulated Non- WDT-Sacco	P.O Box 29960 - 00100, Nairobi	Nairobi
51	KAG Regulated Non- WDT-Sacco	P.O Box 67014 - 00200, Nairobi	Nairobi
52	Kanisa Regulated Non-WDT-Sacco	P.O Box 1225 - 00606, Westlands.	Nairobi
53	KASNEB Regulated Non-WDT-Sacco	P.O Box 14362 - 00100, Nairobi	Nairobi
54	KEMRI Regulated Non-WDT-Sacco	P.O Box 19643 - 00202, Nairobi	Nairobi
55	Kenchic Regulated Non-WDT-Sacco	P.0 Box 20052 - 00200, Nairobi	Nairobi
56	Kenred Regulated Non-WDT-Sacco	P.0 Box 40712 - 00100, Nairobi	Nairobi
57	Kentours Regulated Non-WDT-Sacco	P.0 Box 79333 - 00200, Nairobi	Nairobi
58	Kenya Medical Association Regulated Non-WDT-Sacco	P.O Box413-00202, Nairobi	Nairobi
59	Kenya Re Regulated Non-WDT-Sacco	P.0 Box 30271- 00100, Nairobi	Nairobi
60	Kenya Rural Roads Regulated Non- WDT-Sacco	P.O Box 48151- 00100, Nairobi	Nairobi
61	Kenyatta Matibabu Regulated Non- WDT-Sacco	P.O Box 2117 - 00202, Nairobi	Nairobi
62	I Kewisco Regulated Non-WDT-Sacco	P.O Box 4491-00200, Nairobi	Nairobi
63	KieDRegulated Non- WDT-Sacco	P.0 Box 55319 - 00200, Nairobi	Nairobi
64	Kilele Regulated Non-WDT-Sacco	P.O. Box 28403 - 00200, Nairobi	Nairobi
65	I Kinga Regulated Non-WDT-Sacco	P.O. Box 22591- 00400, Nairobi	Nairobi
66	I Kingsize Regulated Non-WDT-Sacco	P.O Box 18034 - 00500, Nairobi	Nairobi

67	Kirungii Regulated Non-WDT-Sacco	P. 0 Box 30029 - 0100, Nairobi	Nairobi
68	Kumbukumbu Regulated Non-WDT- Sacco	P.O Box 22330 - 00400, Nairobi	Nairobi
69	Law Society of Kenya Regulated Non-WDT-Sacco	P.0 Box 6740 - 00100, Nairobi	Nairobi
70	Lampasago Regulated Non-WDT- Sacco	P.O Box 17553 - 00500, Nairobi	Nairobi
71	Madison Regulated Non-WDT-Sacco	P.0 Box 47382-00100, Nairobi	Nairobi
72	Maktaba Regulated Non-WDT-Sacco	P.O Box 4156-00200, Nairobi	Nairobi
73	Masterways Regulated Non-WDT- Sacco	P.O Box 38715 - 00600, Nairobi	Nairobi
74	Mhasibu Regulated Non-WDT-Sacco	P.O Box 31295 - 00600, Nairobi	Nairobi
75	Mine! Regulated Non-WDT-Sacco	P.O Box 48279 - 00100, Nairobi	Nairobi
76	MkDmbozi Regulated Non-WDT-Sacco	P.0 Box 62727 - 00200, Nairobi	Nairobi
77	MDfaaRegulated Non- WDT-Sacco	P.O Box 64742 - 00620, Nairobi	Nairobi
78	Multiple Regulated Non-WDT-Sacco	P.0 Box 41391-00100, Nairobi	Nairobi
79	Mzima Springs Regulated Non-WDT- Sacco	P.0 Box 59857 - 00200, Nairobi	Nairobi
80	Nairobi Consumers Regulated Non- WDT-Sacco	P. 0 Box 36 - 00300, Nairobi	Nairobi
81	Nairobi Water Regulated Non-WDT- Sacco	P. 0 Box 13880 - 00100, Nairobi	Nairobi
82	Network Regulated Non-WDT-Sacco	P.0 Box 56985 - 00200, Nairobi	Nairobi
83	Nimepata Regulated Non-WDT-Sacco	P.0 Box 55405- 00200, Nairobi	Nairobi
84	Njiwa Regulated Nan-WOT-Sacca	P.O Box l0221-00100, Nairobi	Nairobi
85	Nyumba - Nairobi Regulated Non- WDT-Sacco	P.O Box 30088 - 00100, Nairobi	Nairobi
86	Parents Plan Regulated Non-WDT Sacco	P.0 Box 25196- 00603, Nairobi	
87	Parliamentarians Regulated Non-WDT-Sacco	P.0 Box 44809 - 00100, Nairobi	Nairobi
88	PCEA Kayole Regulated Non-WDT- Sacco	P.O Box 967 - 00518, Nairobi	Nairobi
89	PCEA Regulated Non-WDT-Sacco	P.O Box 27573 - 00506, Nairobi	Nairobi

90	PEFA Nairobi Regulated Non-WDT- Sacco	P.0 Box 79459 - 00200, Nairobi	Nairobi
91	PESA Regulated Non-WDT-Sacco	P.O Box38622 - 00623, Nairobi	Nairobi
92	PICEA Staff Regulated Non-WDT- Sacco	P.O Box 43013 - 00100, Nairobi	Nairobi
93	PDlytech Regulated Non-WDT-Sacco	P.0 Box 56679 - 00200, Nairobi	Nairobi
94	Post Bank Regulated Non-WDT-Sacco	P.O Box 30313 - 00100, Nairobi	Nairobi
95	Queensway Regulated Non-WDT- Sacco	P.O Box 48165 - 00100, Nairobi	Nairobi
96	Radio Guard Regulated Non-WDT- Sacco	P.O Box 27546- 00506, Nairobi	Nairobi
97	Rambhai Regulated Non-WDT-Sacco	P.O Box 18833 - 00500, Nairobi	Nairobi
98	Ramco Group Regulated Non-WDT- Sacco	P.O Box 18639 - 00500, Nairobi	Nairobi
99	Reli Regulated Non-WDT-Sacco	P.O Box 55541- 00200, Nairobi	Nairobi
100	Relief Regulated Non- WDT-Sacco	P.0 Box 73226- 00200, Nairobi	Nairobi
101	Royal Media Regulated Non-WDT- Sacco	P.0 Box 7468 - 00300, Nairobi	Nairobi
102	Rubani Regulated Non-WDT-Sacco	P.O Box 57509 - 00200, Nairobi	Nairobi
103	Sauti Regulated Non- WDT-Sacco	P.O Box 30042 - 00100, Nairobi	Nairobi
104	Sawa Regulated Non-WDT-Sacco	P.O Box 46143 - 00100, Nairobi	Nairobi
105	Shelloyees Regulated Non-WDT-Sacco	P.0 Box 73902 - 00200, Nairobi	Nairobi
106	Smart Savers Regulated Non-WDT- Sacco	P.O Box 30527 - 00100, Nairobi	Nairobi
107	Stoke-UK Diaspora Regulated Non-WDT-Sacco	P.0 Box 73458 - 00200, Nairobi	Nairobi
108	Taa Regulated Non-WDT-Sacco	P.O Box l0535-00100, Nairobi	Nairobi
109	Teal Regulated Non-WDT-Sacco	P.O Box 3391- 00506, Nairobi	Nairobi
110	TetrapACK Regulated Non-WDT-Sacco	P.O Box 78340 - 00507, Nairobi	Nairobi
111	The Standard Regulated Non-WDT- Sacco	P.0 Box 30080 - 00100, Nairobi	Nairobi
112	Total Regulated Non- WDT-Sacco	P.O Box 30675 - 00100, Nairobi	Nairobi

113	Transglob Regulated Non-WDT-Sacco	P.O Box 11364 - 00400, Nairobi	Nairobi
114	Uaminifu Regulated Non-WDT-Sacco	P.O Box4179-00506, Nairobi	Nairobi
115	Ubora Regulated Non- WDT-Sacco	P.0 Box 54974- 00200, Nairobi	Nairobi
116	Ukaguzi Regulated Non-WDT-Sacco	P.0 Box 61555- 00200, Nairobi	Nairobi
117	Umoja Wendani Regulated Non-WDT- Sacco	P.o Box 1390 - 00515, Westlands.	Nairobi
118	Unbound Regulated Non-WDT-Sacco	P.0 Box 1163 - 00100, Nairobi	Nairobi
119	Unga Regulated Non- WDT-Sacco	P.0 Box 30386 - 00100, Nairobi	Nairobi
120	United Women Regulated Non-WDT- Sacco	P.0 Box 3228 - 00100, Nairobi	Nairobi
121	Uokoaji Regulated Non-WDT-Sacco	P.O Box 30793 - 00100, Nairobi	Nairobi
122	USIU Africa Regulated Non-WDT-Sacco	P.O Box 14634 - 00800, Nairobi	Nairobi
123	Utabibu Regulated Non-WDT-Sacco	P.O Boxl02697-00101, Nairobi	Nairobi
124	Utafiti Regulated Non-WDT-Sacco	P.0 Box 30709 - 00100, Nairobi	Nairobi
125	Uweza Regulated Non-WDT-Sacco	P.0 Box 78799 - 00507, Nairobi	Nairobi
126	Vegpro Regulated Non-WDT-Sacco	P.0 Box 3TT4- 00100, Nairobi	Nairobi
127	Verona Huruma Regulated Non- WDT- Sacco	P.O Box 4nl4 - 00100, Nairobi	Nairobi
128	Vision Regulated Non- WDT-Sacco	P.O Box 1240 - 00502, Nairobi	Nairobi
129	Wasada Regulated Non-WDT-Sacco	P.O Box 18011- 00500, Nairobi	Nairobi
130	Waskom Regulated Non-WDT-Sacco	P.O Box 17592 - 00500, Nairobi	Nairobi
131	Kenya - USA Diaspora Regulated Non- WDT-Sacco	P.O Box 21372 - 00100, Nairobi	Nairobi
132	Forward Travellers Regulated Non- WDT-Sacco	P.0 Box 1272 - 00518, Nairobi	Nairobi

Source: SASRA 2024

APPENDIX D: Frequency Statistics for Demographic Information Variables

Variables/Levels	*Frequency*	*Percent*
Role in SACCO		
CEO/MD/GM	26	23.21
Credit Officer	7	6.25
Customer Service Officer	3	2.68
Finance	55	49.11
Marketing Officer	4	3.57
Operations Officer	8	7.14
Relationship Manager	2	1.79
Secretary	7	6.25
Education		
Degree	67	59.82
Masters	43	38.39
PhD	2	1.79
Tenure		
Less than 5 years	25	22.32
10 – 15 years	21	18.75
15 years and above	66	58.93
Years of SACCO Operation		
Less than 5 years	2	1.79
5 – 9 years	20	17.86
10 – 15 years	30	26.79
15 years and above	60	53.57
Year of SACCO Regulation		
2020	38	33.93
2021	53	47.32
2022	18	16.07
2023	3	2.68

VT OMNES
VNVM SINT