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Influence of Innovative Banking on Financial Inclusion among Savings and Credit Cooperative Societies in Homa-Bay County, Kenya

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Abstract:
Recent changes in finance have affected the global economy significantly; banks worldwide have implemented changes involving new and advanced financial technology to ensure their longevity. Technologically progressive regions exhibit an adjusted banking industry that meets its shareholders' expectations, while survival depends on adaptation and change within the local Kenyan banking industry. Technological progress and economic alterations have been a major cause of this transformation. Moreover, innovation in service delivery is on the rise among Kenyan banks. Most people use ATMs for transactions, followed by Internet banking, while EFTs and POS devices are also popularly used in addition to mobile banking. The researcher analyzed how innovative banking influences financial inclusion in savings and credit cooperative societies within Homa-Bay County. The study evaluated how access to innovative banking such as Internet, mobile, agency and ATM banking influences Savings and Credit Cooperative Societies in Homa-Bay County. The study was anchored upon three theories: the agency theory, the stakeholder theory, and the financial intermediation theory. The researcher used a descriptive research design and collected data from two managers and two insubordinate employees of the 44 SACCOs operating in Homa-Bay County. The total number of respondents for the study was 122. The data was collected using the questionnaires, and the SPSS software was used for data analysis. Graphs and tables were used to present the analyzed data and findings. This led to relevant policy recommendations based on the conclusions drawn from the findings of this study. Future investigations will likely focus on identifying areas requiring further examination. The study found that mobile banking, agency and ATM banking positively and significantly influence financial inclusion. However, internet banking does not statistically influence financial inclusion in the study area. The overall regression model of the study shows that innovative banking practices formed a good predictor of financial inclusion by 85.8% at a 5% significance level. The research recommends that SACCOs adopt innovative banking practices to improve financial inclusion in rural areas.

Keywords: *Agency banking, ATM banking, financial inclusion, internet banking, innovative banking, internet banking, mobile banking, Savings and Credit Cooperative Societies (SACCOs)*

1. Introduction

The study's background, problem statement, research objectives, and research hypothesis were all examined in this part. The chapter will also include information about how the study was justified, why it was significant, and ultimately, any constraints the researcher had while carrying out the study.

1.1. Background of the Study

Melecky and Podpiera (2020) highlight a number of notable changes in recent times within the financial industry that have had a major impact on global economics. The evolution of financial institutions is a response to changes in the dynamic business world that impact productivity and performance; this adaptation is necessary to remain relevant and competitive (Ibrahim et al., 2019). Changes in the global banking industry have been using cutting-edge financial technology since 2019. Technologically advanced countries' banking sectors have accommodated the market's needs and their shareholders' interests (Anagnostopoulos, 2018).

The banking industry of developing states is taking comparable actions to keep up, rather than utilizing a traditional front-service approach for product promotion and sales; these banks have turned to using digital marketing outlets such as online or mobile channels (Makinwa, 2021). Changes in operation by both clients and banks gave rise to value creation, and managing banking locations is not the only task for large banks as they expand their service offerings to various channels (Selvaraj & Ragesh, 2018). It is common for such banks to have various banking models that aid in delivering

quality services to customers. The employment of distinct customer models is a strategy used by many banks to boost efficiency and achieve goals (Giovanis et al., 2019)

Innovative Banking implies the utilization of new-age approaches and ideas for executing financial transactions as opposed to legacy mechanisms. The article cites various modern forms of banking, such as mobile banking or internet banking, which are considered unconventional, along with more common forms like debit cards and credit cards (Butzbach & Von Mettenheim, 2015). Electronic access to financial services is possible without having to visit the bank physically. The use of innovative banking methods is now more accessible thanks to platforms like the Internet and payment providers such as Visa and MasterCard (Dula & Chuen, 2018).

Innovation in banking has allowed banks to move towards providing 24/7 service as a response to the growing demand for digital financial services created by changes brought by technology in both homes and workspaces. Additionally, demographic changes have caused an increase in a tech-savvy, youthful client base seeking loan products, online resources, and saving options. By researching innovative banking strategies among Kenyan banks, including savings-and-loan cooperatives (SACCO), these firms can evaluate what works best to gain an advantage over rivals. Staying ahead of the competition requires banks to explore new and inventive approaches towards improving their service delivery (Ahmed & Wamugo, 2018).

Mader (2018) defines Financial Inclusion as the effort made by financial institutions to offer transparent and reasonably-priced financial products/services to people who are typically excluded from accessing them, including every member of society into the mainstream for availing banking and financial services irrespective of their financial status. Financial inclusion focuses on providing economic assistance to the underprivileged (Schuetz & Venkatesh, 2020), with the purpose of this endeavour being to equip those who have been marginalized financially with the skills and knowledge needed to manage their finances wisely. Financial technology innovations make achieving financial inclusion more possible as they provide easy access for everyone regardless of their demographic location (Chatterjee, i2020).

Access to financial services and promoting overall financial inclusivity has significantly improved globally, with around 7 out of every 10 adults worldwide having access to a bank account (Chatterjee, 2020). Not all countries are equal when it comes to account access for the adult population; Kenya, Thailand, India and China all maintain an 80% or higher rate versus other countries (Chatterjee, 2020). The progress achieved can be attributed to several factors, including structural reforms instituted, innovative practices by businesses, and an intensified push towards broadening access through low-cost accounts. The achievement unlocked a new phase for Kenya's finance industry, effectively using their recently created account, which establishes the foundation for additional financial services like insurance and credit, making commencing or expanding current businesses more feasible. Investing in oneself through healthcare and education shows significant enhancement in individuals' living standards (Musau et al., 2018).

In poor rural Kenyan homes, a significant proportion of women remain unbanked. In terms of account ownership, there is a bigger gap between genders in developing nations. Achieving financial inclusion requires the implementation of policies that encourage people to open accounts, which enables the recipient to receive their government payment. Also, governments can contribute to the advancement of mobile financial services by welcoming new business models and promoting their adoption (Arthi & Shanmugam, 2020), while industry players like cooperatives and banks, alongside telecommunication companies, are among the stakeholders that strategists along with regulatory agencies can bring together. Industry players need to provide financeable services consistent with a specific standard that safeguards the interests of customers by promoting responsibility and sustainability (Maina & Mungai, 2019).

1.1.1. Internet Banking

Internet banking, commonly called electronic or digital banking, denotes the delivery of banking services and transactions performed over the Internet. This has transformed how individuals handle their monetary resources and has established banking as more convenient and easily accessible for clients. Online banking has transformed how people and companies handle their money by providing convenient, protected, and available monetary services at any time and place (Eling & Pietrowska, 2016). Considering the worldwide viewpoint, online banking has undergone remarkable development and evolution over the years. Technological breakthroughs and growing customer needs have guided the expansion and change. Online banking arose in the late 1990s as banks began to investigate the possibilities of the Internet to supply banking services (Hasan & Hoi, 2021). At first, online banking services had restrictions on essential tasks like inquiring about account balances and transferring money.

Nevertheless, due to advances within the tech field, as internet usage grows, financial institutions started providing a diverse set of options. This service offers payment of bills, account administration, loan requests, and transactions related to investments. Understanding the nature of demand for digital banking transformation is what technology promoters and major consulting firms, among others, strive for in North America. As society continues to shift towards a more automated and interconnected world regarding finance and technology, industries converge into one entity; innovative banks benefit from partnering with contemporary technology providers (Pramanik et al., 2019).

Online banking across Africa has experienced substantial expansion and advancement over the course of time. This has changed the manner in which people and companies perform monetary transactions across the landmass. Although the adoption of Internet banking differs among nations, an evident increase has been observed in the utilization of online banking options within Africa. With the advancement of technology, an increasing number of individuals can conveniently manage their finances using online platforms. As stated by Fedyshyn et al. (2019), it was common for banks to make this transition in the early 1990s. The roots of innovative banking can be traced back to Assyria, where it is believed to have begun before spreading to Egypt and Babylon.

The continent of Africa has undergone a notable rise in web adoption. The expansion has been fueled by technological progress, portable connectivity, and infrastructure improvement. The growth of online connectivity has opened doors for monetary organizations to deliver digital banking services to a bigger community (Natarajan et al., 2019). Consequently, a larger number of individuals now have the convenience to administer their economic resources via the web. Online banking has witnessed substantial expansion and influence in the country. This nation is leading in the area of digital banking on the continent. Checking on the status of individual accounts while accessing financial services like loans or deposits requires security and convenience for modern African customers (Gupta, 2019). Modern African customers now prefer instant banking services compared to conventional methods of banking, which were predominant previously, according to a survey conducted by the American Bankers Association in 2009 (Odumeru, 2013).

The experience of Kenya in mobile banking, especially via M-Pesa's achievements, has enabled the wide implementation of digital banking. Online banking gives multiple positives for consumers. It provides round-the-clock access to money management services, allowing customers to execute transactions whenever they want. It removes the obligation to go to actual bank locations, reducing time and effort.

1.1.2. Mobile Banking

Mobile banking, commonly called m-banking or mobile finance, denotes utilizing mobile devices like smartphones or feature phones for executing banking and financial transactions. This has transformed how individuals handle their monetary resources, giving them ease and availability as it has never been before. Digital banking has become an innovative technology that has changed the worldwide financial environment. The extensive use of cell phones worldwide has significantly influenced digital banking (Zeng et al., 2019). Having more than 5 billion distinct cell phone users globally, mobile finance is now a reachable and user-friendly approach to supply economic services to a substantial group of individuals. Consequently, how individuals handle their finances and carry out dealings has changed dramatically. Most banks worldwide utilize different strategies due to an increase in demand from customers combined with technological advancements, and banks are embracing the use of innovation in their services.

African finance firms have quickly adopted innovative banking techniques, with particular progress in mobile money, thanks to recent technological developments (Pelletier et al., 2020). The preference for mobile money is evident from the fact that in countries like Kenya, Cote d'Ivoire, Tanzania and Zimbabwe, a higher number of people possess mobile money accounts as compared to those who have a traditional bank account in any financial institution (Gosavi, 2018). Thanks to mobile money technology, accessing financial services is now easier for such populations. Emergencies can be managed better, and more assets can be built with innovative banking as it disrupts conventional models and offers greater opportunities for the masses to succeed financially (Lashitew et al., 2019).

Digital banking has had a significant influence on the monetary backdrop within Kenya. This nation is a pioneer in the progress of virtual money technology and acceptance. The achievement of digital banking within Kenya, especially via the M-Pesa system, has revolutionized how people and companies get and utilize financial facilities. The revolution in mobile banking in Kenya started with the inception of M-Pesa in 2007 by Safaricom, Kenya's leading mobile network operator (Mas & Radcliffe, 2011). M-Pesa allowed individuals to send and get money, execute bill payments, and avail of other financial services using their mobile phones. Despite not having the usual banking account, it offered a practical and easily attainable means for people to oversee their economic resources.

1.1.3. Agency Banking

Agent banking, commonly referred to as Agency banking, serves as a financial service delivery model enabling banks to broaden their services via authorized agents found in multiple places. The approach allows banks to connect with customers in distant locations where establishing a typical bank branch could be impractical. The approach has become popular internationally as a method to facilitate financial inclusion. Branchless banking has become an effective strategy to foster financial integration by providing banking options to underserved banking communities (World Bank, 2018). This enables people living in rural or disadvantaged regions to utilize fundamental financial services, which encompass depositing funds, withdrawing money, transferring funds, and settling bills using designated agents.

Agent banking has become an important financial solution operating model on the African continent. This is important in promoting economic inclusion and granting access to banking solutions in disadvantaged regions. This has revolutionized the conventional banking environment by utilizing technology and collaborations to stretch financial facilities through approved agents. Branchless banking has played a key role in facilitating financial empowerment across Africa. Through utilizing current retail networks and brokers, financial organizations can connect with individuals with limited access to banking services (Consultative Group to Assist the Poor (CGAP, 2018). They can allow individuals to find fundamental monetary solutions, including making deposits, withdrawing cash, transferring funds, and settling bills.

Branchless banking has had a revolutionary role in the financial sector of Kenya. This has facilitated financial inclusion and broadened banking services to previously neglected areas. Kenya has always been pioneering in the field of agency banking. The effective execution of the framework via collaborations among banking organizations and intermediaries has had a significant impact. In Uganda, mobile banking was formally launched in 2015 by the Bank of England (BOE) as a method to improve financial accessibility (Jack & Suri, 2014). The Central Bank of Kenya implemented rules permitting financial institutions to collaborate with approved representatives to provide financial services representing the monetary organizations. Kenya's thriving digital payment system, M-Payment, is closely associated with the expansion of branchless banking. The incorporation of the mobile money service with branchless banking services has enabled hassle-free entry to monetary services using smartphones. That has led to the quick acceptance and development of banking agencies within the nation.

1.1.4. ATM Banking

One could hardly find an ATM in the early days except those offered by Christopher Thorton back then, where one could get money by giving him their furniture. Tallymen facilitated clothing purchases every week for two centuries up until modern times, and American shoppers from the 1920s were given a new feature which enabled them to make payments later (Macharia et al., 2021). The use of innovative methodologies by several American private enterprises satisfied diverse customer requirements during the 1920s. Interbank transactions between themselves saw European companies began using different banking methods in the 1930s (Butzbach & von Mettenheim, 2015). Gone are those days when one needs to be physically present in a bank hall for transactions, as innovative banking methods have replaced that. Throughout Europe during the 1900s, there was an increase in ATM numbers by approximately fifty per cent, not limited to just cash withdrawals anymore; ATMs also offer the convenience of deposit services and checking one's account balance or transaction history (Holoda et al., 2019).

African banks have had to become more flexible due to modern customers' demands to adapt quickly. Banks realized that to be aligned with dynamic businesses, they had to embrace modern technology. Banks can simultaneously reduce operational expenses and optimize services by implementing innovative banking approaches such as those discussed in Mavilia and Pisani's study (2020). Nowadays, banking services can be accessed anytime, thanks to most countries' round-the-clock economies. Customers have the ability to easily access banking services with this feature offered (Olukayode, 2021).

Cash machine financial services have played a major role in the economic context of Kenya. It has offered convenient and easy money services to individuals and enterprises throughout the nation. In Kenya, there has been a substantial expansion in the automated teller machine infrastructure and utilization. The increase has led to progress in the financial sector. Cash machines were initially introduced in Kenya during the 1980s. It indicated a major change in financial services by allowing automated transactions beyond conventional bank branches. At first, the ATM count within Kenya had restrictions, yet their popularity increased rapidly over a period of time. Automated teller machine banking has substantially boosted financial access in the country. Automated Teller Machines are strategically positioned within city centres, commercial complexes, travel hubs, and countryside regions. The company offers clients 24/7 access to cash withdrawals, getting account balance information, and sending funds, including various banking services.

1.1.5. Strategic Role of Savings and Credit Cooperative Societies in Homa-Bay County

With more than 14,000 registered cooperative societies, according to The Kenya Union of Savings & Credit Cooperatives, KUSCCO reports there exist over 5,000 SACCOs in Kenya. Additionally, SASRA reports indicate that 2010 there were precisely 175 newly created SACCOs, which marks an important year for this growing sector (Mursoi et al., 2021). More individuals are joining SACCOs, which signifies its expansion. Due to their provision of financial services for individuals and populations traditionally left out or ignored by established financial institutions, SACCOs prove themselves crucial players in developing any nation (Felix et al., 2022).

Yet, despite this progress, a significant proportion of the population remains unbanked and thus cannot avail themselves of any kind of financial service. Additionally, the utilization of their financial accounts may be obstructed for some individuals who already have an account (Sanderson et al., 2018). Many of the obstacles individuals face can be overcome by using innovative banking strategies, such as the internet and agency banking, which offer an alternative way for people who cannot access physical bank branches at the grassroots level. Savings and credit cooperative societies can enhance their efforts towards improving financial inclusion by actively embracing new banking technology innovations, as Tambasi (2019) recommended.

Kenya's SACCO industry has continued to flourish over the years; however, further efforts are required to ensure complete financial inclusion. SACCOs can help promote financial inclusion across the country by increasing access to services through expanding branches and developing digital offerings. Additionally, the product range provided by Kenyan SACCOs has expanded, skyrocketing the growth of both the membership base and deposit holdings while also enlarging its asset portfolio significantly (Mwulu & Nuguna, 2020). Complementing the works of other financial players is where SACCOs have a strong position in expanding formal finance SACCOs by embracing modern technology such as ATMs and mobile banks, plus the use of agents to provide better customer service, as observed by Mugo et al. (2019).

1.2. Statement of the Problem

According to a report by the Central Bank of Kenya (2020), a significant percentage of Homa Bay County, Kenya's population did not have access to formal banking services. The report states that only 14% of the population in Homa Bay County had access to formal banking services, while the remaining 86% were unbanked or underbanked. The unbanked population in Homa Bay County faces several challenges that hinder their access to formal banking services. First, many people in Homa Bay County live in rural areas where banking infrastructure such as branches, ATMs, and mobile money agents are limited or non-existent (Wanzare, 2022). Secondly, a significant proportion of the population within the County lives below the poverty line, and they may not have sufficient funds to maintain a bank account. Thirdly, there is a lack of financial literacy. Many people in Homa Bay County may not be aware of the benefits of formal banking services or may not understand how to use them (Wanzare, 2022). Lastly, some people in Homa Bay County may not have the necessary identification documents to open a bank account, which hinders their access to banking services (Owandho, 2020). The four reasons make this study relevant and applicable in Homa-Bay County to aid the SACCOs that operate within the county in working towards improving financial inclusion through the use of innovative banking.

Not having access to banking limits individuals from obtaining financial assistance, allowing exploitative groups to provide financially related aid but at extremely high prices, ultimately creating a more impoverished population rather

than helping alleviate current circumstances (Aluoch et al., 2018). To achieve the required level of financial depth and inclusion amongst targeted populations that drives development, the Sustainable Development Goals SDGs require SACCOs to deepen their reach with relevant financial players. By adopting innovative banking methodologies aimed at providing easier on-demand access to affordable financial services, as highlighted by Makinwa (2021), SACCOs can boost their efforts towards greater inclusivity. Being able to provide financial services directly to the people has cemented SACCO's reputation as an important player in this process, and there are still struggles to reach the desired levels in items of financial inclusion. Affordable and convenient access to financial services can be achieved by implementing innovative banking techniques by SACCOs to enhance customer inclusivity (Kodongo, 2018).

There is a significant body of research exploring the effect of innovative banking on financial inclusion. The findings from a study carried out by Arthur et al. (2020) suggest that banks struggle with marketing their products to households receiving remittance payments while new financial technology companies are making strides towards improving the use of saving and loaning services. Additionally, an investigation into remittance practices revealed areas ripe for exploration regarding innovative bank channel impact on financial integration, which is currently poorly understood. Innovative delivery mechanisms, including agency banking, have been found in Msabaha's (2020) research to be valuable tools for promoting financial inclusion among Amana Bank customers, with mobile banking being another effective channel. However, there is a contextual gap because the study took place in Tanzania, focusing on banks and not in Homa Bay County, where the focus will be on SACCOs.

Agency banking investments and incomes were shown to have a beneficial impact on bank performance in the study by Motondi and Bula (2020). However, the lack of emphasis on financial inclusion rather than bank performance leads to a conceptual gap. Evident from previous studies is the need for further examination into how innovative banking can improve financial inclusion among savings and credit coopérative societies within Homa-Bay County. This research intends to fill the gaps highlighted in the previous studies.

1.3. Research Objectives

1.3.1. General Objective

The study's general objective is to establish innovative banking's influence on financial inclusion among savings and credit coopérative societies in Homa-Bay County, Kenya.

1.3.2. Specific Objectives

The specific objectives of the study are to:

- Determine the influence of Internet banking on financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- Investigate the influence of mobile banking on financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- Explore the influence of agency banking on the financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- Analyze the influence of ATM banking on the financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.

1.4. Research Hypothesis

- H01: There is no statistically significant influence of internet banking on financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- H02: There is no statistically significant influence of mobile banking on the financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- H03: There is no statistically significant influence of agency banking on the financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.
- H04: There is no statistically significant influence of ATM banking on the financial inclusion of savings and credit coopérative societies in Homa-Bay County, Kenya.

1.5. Significance of the Study

The future evaluation of the proposed study by academia and other research professionals will take into account its constraints, considering that there is a paucity of empirical investigations into how innovative banking impacts financial inclusion among Savings and Credit coopérative societies in Kenya as well as other regions. Thus, this analysis lays a good groundwork for assessing the existing gaps in research within this field.

Policymakers stand to gain much from this study on Savings and Credit Cooperative Societies and other related financial entities as it could provide a framework for developing more relevant policies aimed at enhancing financial inclusivity. This helps policymakers identify the most fitting regulations and procedures for overseeing financial institutions.

The study is advantageous for SACCOs, and numerous other financial institutions domiciled in Nairobi and across Kenya because it provides insights into how innovative methods can be leveraged for improved financial inclusion. Enhancing the accessibility of financial services and promoting their availability is a shared goal among like-minded institutions that may benefit from these study findings.

1.6. Scope of the Study

The objective of this study is to explore the role of innovative banking in fostering financial inclusion amongst savings and credit cooperative societies in Homa-Bay County. The research centers on four main areas in the field of modern finance: online banks and ATMs alongside agency and mobile platforms. Only Savings and Credit Cooperative Societies from Homa-Bay County are examined in this study.

1.7. Limitations of the Study

This study was primarily focused on Savings and Credit Cooperative Organizations (SACCOs) within Homa-bay County due to limited resources, which may not sufficiently represent SACCOs in other regions. Additionally, the research encountered a challenge as some respondents failed to complete the questionnaires, potentially impacting the comprehensiveness of the data collected. Furthermore, the reliance on self-reported data could introduce bias, as respondents might provide socially desirable answers rather than reflecting their true opinions or behaviors. Prior to commencing with data collection, the researcher clarified the objective of the research with the participants. These limitations suggest that future research should consider expanding the geographic scope and employing strategies to improve response rates and data accuracy.

1.8. Delimitations of the Study

Delimitations in research indicate the limits, constraints, and exceptions that are intentionally established by the researchers (Hughes et al., 2019). These limitations aid in defining the extent and emphasis of the research, guaranteeing that the analysis continues to be practical and possible. These delimitations establish the range and emphasis of the investigation. It outlines what is going to be included and not included in the investigation. Boundaries assist in offering clear understanding, handling the investigation procedure, and guaranteeing that the research stays achievable within the accessible assets and duration boundaries (Hughes et al., 2019). Delimitations establish limits and constraints on the range of the research, determining what shall and will not be comprised.

Additionally, it helps sustain the research's importance and suitability to the particular research query or issue being resolved. The research focuses on Homa-Bay County. This does not include other countries within the country. Moreover, the investigation encompasses SACCOs that operate within Homa Bay County. The subjects are going to be picked employing the technique of stratified sampling.

The research was restricted to particular categories or elements of cutting-edge financial technologies that shape financial inclusion. As an illustration, the main emphasis will be online banking, Agency banking, ATM banking, and mobile banking. By limiting the range to particular cutting-edge banking technologies, the research can analyze its influence on access to financial services. This research restricted the review concerning financial involvement to particular measures; the indicators involve access to financial services, utilization of financial products, or the count of active accounts. Restricting the attention on particular metrics enables the researcher to collect pertinent information and assess the influence of advanced financial services on those distinct features of inclusion in the economy. The research is restricted to a particular time span of 2023. The boundary facilitates the understanding of the present condition regarding financial access and the effect of advanced banking within the timeframe of 2023. Finally, the investigation will use structured and semi-structured questionnaires during data-gathering. It will assist in gathering information from existing resources and knowledge.

2. Literature Review

2.1. Introduction

This chapter provides a detailed examination of existing literature pertaining to the study and presents multiple theories that inform this study. Additionally, it reveals where existing research falls short and determines areas where new insights can be provided. This study critiques previous empirical research findings.

2.2. Theoretical Literature Review

The purpose of conducting a theoretical review is to identify relevant theories that have been attributed by other researchers. In guiding this study, the researcher will rely on three key theories: the agency theory, the stakeholders' perspective, and that of financial intermediaries.

2.2.1. Agency Theory

Jensen and Meckling are credited with developing the agency theory in 1976, which aims to understand how agents represent a business and their relationship with it. Central to this theory is determining appropriate market strategies that permit agents to act exclusively in their firm's interests despite a division between ownership and control (Shapiro, 2005). The principal bank, in this case, follows the principle of delegation by assigning authority to an agent for decision-making and conducting transactions, as shown by Shogren et al. (2017). Having differing agendas or means of evaluation coupled with a missing piece, such as incomplete information, can bring about problems within an agency involving both principal and agent alike, as articulated by Shapiro (2005). Agency Theory's core principle is based on this aspect: agents cannot be consistently monitored; thus, principals must assume maximum organization utility from them at all times (Mitnick, 2015).

Institutional and individual shareholders have started to diversify their stakeholder position towards ownership of financial institutions, according to the current study. Additionally, it is worth noting that agent banks are contracted and

authorized specifically by banks to provide necessary financial services (Vitolla et al., 2020). The possibility of issues arising due to ineffective coordination between parent banks and agents is noted by this theory's take on the relationship. By emphasizing the existing relationship within agency banking, the theory possesses resonance with regard to this research.

2.2.2. Stakeholder Theory

Edward Freeman was responsible for introducing a concept known as stakeholder theory in relation to capitalism, which stresses the associations between businesses and other entities like customers, investors, suppliers, employees and the general community (Freeman et al., 2010). The theory was first introduced in the year 1984. This theory suggests that an organization's objective should be to add value for each and every stakeholder. The stakeholder theory talks about morals and values to consider in managing organizations while emphasizing issues that impact indifferent parties involved in the institution, according to Jones et al. (2018). The advantage of stakeholder theory lies in employing flexible and adaptable approaches that ensure that everyone benefits from its operations, and ethics and economics are both taken into account in stakeholder theory (Crane & Ruebottom, 2011). Managing everyone's interests so that they are all satisfied can be difficult, and it often leads to disappointment among certain parties involved.

Stakeholder theory provides an important framework for comprehending corporations and their contexts, as this theory seeks to expand management's perception regarding their responsibilities and functions to encompass more than just maximizing profits (Barney & Harrison, 2020). Everyone who has a legitimate interest in an enterprise deserves to receive benefits, according to Patton's (2008) findings. To make an informed decision regarding this issue, one must take into account all affected parties, such as associated corporations, along with potential clients and members of the public. This study recognizes the importance of stakeholder theory because it stresses how crucial it is for SACCOs and other financiers to make sure everyone has access to finance (Financial inclusion) so that there can be progress towards developmental goals represented by SDGs.

2.2.3. Financial Intermediation Theory

Gurley and Shaw's (1960) work led to the development of the financial intermediation theory, where in financial intermediation, surplus units loan their excess resources to deficit units. The lack of complete information, along with high transaction costs, is what leads to the creation of financial intermediaries, according to Bethune et al. (2019). According to the financial intermediation theory, methodologically reducing information asymmetry and transactional cost is done by pooling customers together and creating economies of scale. Units with surpluses effectively transfer their funds to those facing deficits via intermediaries, as noted by Molnar (2018). The research will employ the financial intermediation theory as a means of explaining why creating and adopting innovative approaches to banking is necessary among commercial banks, SACCOs and other similar institutions. Adopting innovative banking practices facilitates long-term growth prospects and ensures sustainable liquidity levels. Due to market imperfection and uncertainty reasons, financial intermediaries are mainly in place, according to Ratnawati (2020). However, the inadequacy of the study lies in the lack of financial inclusion for a sizable portion of society.

2.3. Empirical Literature Review

This study's goals will be matched with previous literature conducted on the topic during the empirical review section, and by using this approach, the researcher can detect gaps in their study areas.

2.3.1. Internet Banking and Financial Inclusion

Promoting financial inclusion worldwide, internet banking has emerged as an effective and powerful tool. A highlight from Gupta and Bansal's (2020) study is that internet banking has a positive impact on financial inclusion within rural Indian communities. According to their research, internet banking has resulted in greater financial access and usage. Accessing an extensive range of financial services while conveniently conducting transactions became feasible for those residing in remote locations. Agarwal and Singh (2017) analyzed how internet banking impacts financial behavior and credit access in rural India through a study. Enhancing access to credit and encouraging individuals to engage in financial transactions were positively influenced by internet banking adoption, as demonstrated by their research. In Bangladesh, the impact of internet banking on financial inclusion was investigated by Haque et al., (2019); their findings demonstrated the significant impact of internet banking on expanding access to finance particularly among those living within rural communities by removing geographical barriers and providing reliable yet cost-effective ways of accessing finance.

Analyzing data on technology use, including internet access along with mobile phones over the years spanning from 2000 – 2016 within African countries, with regards to their connections with financial inclusivity, was performed via a research study which was carried out by Evans (2018). In several African countries examined by this study, which analyzed metric stationarity and interdependency, it was evaluated how internet banking affected financial inclusiveness. The conduct of this research involved making use of the panel FMOLS approach in combination with Granger causality tests. Based on the study, increased usage of mobile phones and internet leads to higher levels of financial inclusion. Also, the inquiry determined a singular interrelation linking web-based banking and economic integration, signifying that the internet results in improved access to finance. The investigation revealed that factors such as primary school attendance, bank loan availability, demography, and interest rate levels are vital for bolstering financial inclusion efforts in Africa. Only examining African countries has caused a contextual gap in this study.

Research conducted by Ramadhan (2011) in Uganda examined the factors affecting internet banking acceptance among consumers and how they relate to customer satisfaction. Conducting a survey allowed for the collection of primary

quantitative data in the research. According to the results of the research carried out, customer satisfaction is highly related to online banking. Therefore, the study recommends an increased focus on individual client targeting with greater effort. Additionally, it was suggested by the investigation that internet-banking providers need to find innovative approaches in order to increase awareness about their products. The examination displayed a gap in its concept as it studied the effect of internet banking towards customers' satisfaction rather than their participation in finance.

The objective of Lenka and Barik's (2018) study conducted in South Asian Association for Regional Cooperation (SAARC) countries between 2004 and 2014 was to assess how the expansion of mobile phone usage and internet growth impacted financial inclusion. Through the use of principal component analysis, this study generated a set of metrics that were designed to quantify and measure the provision and availability of accessible finance within the SAARC region. Data analysis involved the implementation of various models, including the random effects model along with fixed effects and panel correction standard error models. Moreover, research has confirmed a substantial and favorable relationship between financial inclusion and the advancement of internet banking. Further analysis of the control variables reveals that there is a positive correlation between both education and income levels with financial inclusion. However, the existence of a contextual divide occurs as the research has been undertaken solely within countries southward of Asia as opposed to being conducted directly within Kenya.

2.3.2. Mobile Banking and Financial Inclusion

A study analyzing the effect of IDRC-supported initiatives for mobility phone service in banking on financial inclusion was conducted by Chib and Hales (2014). In extending financial services to previously unbanked individuals, particularly in developing countries, mobile banking played a transformative role according to their research. Mobile Banking enables people to perform transactions via their mobile devices while overcoming geographic constraints and limitations in conventional banking infrastructure. Overcoming geographical barriers and reaching underserved populations are benefits of mobile banking that are emphasized in the literature. In their investigation, Kar and Kar (2017) explored how mobile banking can help bridge the gap in financial access for remote and marginalized communities in India. Mobile banking enables people to carry out their financial transactions without having to depend on any physical infrastructure – this is what their research shows and it highlights an expansion in terms of increasing access to finance for all.

By studying the influence of mobile banking on financial inclusion in Zimbabwe, Mago and Chitokwindo (2014) aimed to understand its impact and consolidate the results of the study. Both a qualitative research method and supporting literature were utilized. The research was undertaken in Zimbabwe's Masvingo district. The report highlighted that those who yearn for little income in this locality have shown interest in using mobile banking mainly because it is secure and easy to use. The suggestion put forth in the study is that the Central Bank should supervise non-bank-led models of mobile banking while also managing limits along with policies and structures, as accessing financial services has not been an option for people who earn less and work informally. Mobile banking allows convenient and faster access to these services, which is a great option, particularly for isolated areas and stimulates economic advancement in rural territories. A lack of contextual information exists due to the study's location in Zimbabwe.

Kemal's (2019) research focused on investigating how mobile banking can enhance financial inclusion by using government-to-person payment in Pakistan. The study reviewed how the use of mobile banking by female recipients impacted household institutional characteristics. The technique of choice to gather qualitative information from the surveyed group was by conducting semi-structured interviews. According to the findings presented, mobile banking ensures that women are able to securely and easily receive all of their grants from agents. The research done states that mobile banking in Pakistan is imposing limits that obstruct access to and use of financial services, resulting in substandard levels of financial inclusion. However, enabling women with the power of mobile banking services led to their social and political empowerment, which resulted in achieving transformative social and financial inclusion. Based on the findings of the financial inclusion study on Pakistani women, it can be concluded that there exists a contextual gap.

The impact of mobile banking on financial inclusion in Kenya was studied by Maina (2018). Communications Authority of Kenya (CAK), Kenya National Bureau of Statistics (KNBS), and Central Bank of Kenya (CBK), alongside banks providing mobile banking services in Kenya, were some of the sources of secondary data utilized in this study. Both inferential and descriptive statistical methods were used to analyze the data, including Pearson correlation and regression coefficients. The research showed that an increase in enrolment into mobile money services had a positive effect on promoting financial inclusion. According to the findings, it was discovered that there is a positive and significant correlation between an increase in mobile money agency distribution and financial inclusion. Likewise, the research demonstrated that technology played an important and positive part in advancing financial inclusion. The value of mobile banking transactions was found to have a significant and positive effect on increasing financial inclusion, according to the study, and these observations from the study indicate that decreasing transaction fees would incentivize more financial dealings via mobile banking. This research will fill in the gaps left by previous studies that have focused solely on banks.

Etim (2014) conducted a study on the reasons for slow mobile money adoption rates in West Africa compared with M-PESA's success story in Kenya. Financial inclusion has been extended to millions in Kenya due to M-PESA; however, the adoption rate for mobile payments in both Ghana and Nigeria is under 10%. An investigation into the utilization of mobile devices for providing financial services like mobile money and banking was conducted. An investigation was conducted on whether mobile users found it easy to navigate through mobile money and banking services while also looking into how many had already switched over. While the use of mobile phones is common in Ghana and Nigeria, the same cannot be said about mobile banking. As a result of the findings presented in this study, it is proposed that Nigerian and Ghanaian Banks make an effort to persuade more customers to use mobile banking services. The aim is to make things more convenient

with enhanced customer service that's easily accessible, and West Africa as a location for conducting this study has caused a contextual gap to appear.

2.3.3. Agency Banking and Financial Inclusion

Expanding financial inclusion globally has become promising with the emergence of agency banking. Agency banking's impact in India was researched by Singh and Bansal (2019). The research conducted by them showcased how agency banking broadened financial accessibility and usage, especially for populations that are marginalized or underserved. Individuals can improve their financial inclusion by conducting financial transactions and accessing basic banking services through authorized agents.

Nyagdza's (2019) research revealed crucial elements for achieving financial inclusion via agency banking. To analyze the subject matter extensively, the author used a case study approach and looked at three different financial institutions situated in Zimbabwe. The study collected data from various sources by utilizing a mixed-method approach, which included the participation of individuals such as bank agency managers and active bank holders alongside bankers. To meet the objectives set for this research project, SPSS was used for the analysis and interpretation of data. The application of structural equation modeling aided in determining the causality of relationships among variables, and the alignment of financial inclusion with organizational needs is essential for improved service delivery to customers. Agency banking provides a necessary level of consistency for financial institutions to achieve sufficient financial inclusion. By concentrating solely on agency banking within Zimbabwe, a contextual gap has emerged.

A study was carried out by Githemo (2014) to determine how the use of agency banking services affects the financial performance of SMEs in Nairobi County. The approach taken in this study was to use a descriptive research design. By analyzing collected data from the years between 2009 and 2013 helped study the financial performance of SMEs. By using return on assets and looking at the amount transacted via agency banking, the author was able to determine the data. Using stratified random sampling methodology enabled the selection of 120 SMEs in Nairobi County that engage with agency banking services. The researchers utilized multiple regression analysis to examine how changes in independent variables related to changes in dependent variables. Additionally, agency banking has been shown to have a significant bearing on SMEs' financial integration and productivity by the study. For wider adoption of agency banking by SMEs, it is necessary for banks to reduce transaction costs and develop effective risk management strategies. The research highlighted a conceptual gap by only investigating how agency banking impacts financial performance rather than its impact on overall financial inclusion.

Examining the leverage provided by agency banking to promote financial inclusion in Tanzania was the focus of Lotto's (2016) investigation, and the collection of data from bank agents in Dar-es-Salaam was done through the utilization of a descriptive research design. Analysis of the statistics reveals that agency banking is beneficial in simplifying financial inclusion as it reduces customers' travel distance to avail of such services. Additionally, liquidity is not too much of an issue since parent banks keep tabs on their agents' activities to avoid any situation where there might be a shortfall in funds or security. Also, it was discovered by the study that using agency banking for your financial needs is cheaper than using regular banks. A strong link was found between geographical coverage expansion via agency banking and a notable boost in financial inclusivity. Despite this, the study presents that it is important for banks to ensure their agents' credibility in managing risks; banks need to have more agency outlets in order to expand their outreach. Banks must minimize their agent's operating expenditures so that they do not impact their clients' financial burden. Encouraging customers to use agents with confidence in terms of their security and efficiency requires educating them. The choice of location for conducting the study has resulted in an evident contextual gap as it was done in Tanzania and not Kenya.

Investigating the influence of agency banking on financial inclusion in Kenya was the main goal of Kandie's (2013) study, and the research methodology involved using a cross-sectional survey approach. The scope of this research was limited to studying six Kenyan commercial banks that provide agency banking. In addition, inferential statistics were used because of their ability to determine the relationships between variables and also because obtaining secondary data for analysis was relatively easy. There is concrete evidence from this study indicating that agency banking is strongly linked to increased financial inclusion. By analyzing the correlation coefficient data, it can be said that agency banking and financial inclusion have a strong relationship, as indicated by its value of 0.727. It should be noted that a value of R-squared as high as 0.529 means nearly half (around i53%) of variation in financial inclusion can still not be explained by agency banking-based factors. However, to improve financial inclusion, it is recommended that the use of agency banking be encouraged. Unlike the prior investigation that targeted commercial banks, this study focuses on SACCOs and presents a different context.

2.3.4. ATM Banking and Financial Inclusion

ATM-based transactions have made an invaluable contribution towards promoting financial inclusion worldwide by providing easy access to various banking services for individuals living in both cities and villages. Financial inclusion's relationship with ATM banking was explored by Aragão and Araújo (2016) in Brazil. The physical touchpoint provided by ATM locations has been shown in their investigation as contributing towards improved financial accessibility, particularly in remote or underserved regions. ATM banking contributes positively to financial inclusion in rural regions as well. The research was carried out by Kim and Seneviratne (2013), highlighting the role of ATMs in expanding financial reach to remote areas, especially those located within rural communities. The study conducted by them found that installing ATMs within remote regions resulted in increased usage and availability of banking facilities. This led to greater levels of financial inclusion amongst populations who were not included before. Research carried out by Ito et al. (2016) in the Philippines investigated how ATM banking affects financial inclusion and welfare. Their research demonstrates that ATM

availability can improve overall financial inclusion by increasing account ownership and use, ultimately resulting in better individual economic prosperity.

The impact of financial inclusion on the economy was investigated over a period of seven years in a study conducted by Iqbal and Sami (2017), and affordable delivery of banking services through the use of debit cards and ATMs was prioritized. The primary statistical instrument for analyzing the secondary data used in this study was multiple regression models, and the results indicate that having more bank branches available positively affected credit deposit ratios relative to the country's GDP. According to the study conducted, the number of ATMs did not play a major role in shaping India's GDP. However, the location of the study, which is in India rather than Kenya, presents a significant contextual gap. Also, this study has a conceptual gap because it examines only how ATM banking contributes to economic growth and not financial inclusion.

Bachas et al. (2018) examined how digital finance affected economic integration in Mexico. It was discovered by the study that debit cards have a notable impact on reducing travel distances when it comes to accessing banking-related financing options, resulting in financial inclusivity in this regard. According to a study conducted on beneficiaries of cash transfers in Mexico, it was found that having access to ATM and debit cards allowed those with pre-existing bank account balances to reduce the distance they had been travelling. Accessing their money did not require them to neglect other crucial activities such as work and school or caring for children, and the study found through the use of account level information that there is a noticeable negative association linking numbers of ATMs with lessened necessity to commute greater distances for financial transactions. The existence of a contextual gap was revealed in the study conducted in Mexico.

The relationship between different financial distribution channels and financial inclusion in Kenya was analyzed by Sindani et al. (2019), and this research collected secondary data from 2012 to 2017. They used both the correlational and descriptive research designs in combination to conduct the study. Concentrated attention was given to 44 Kenyan-based commercial banks during this study. The presentation of study results included the utilization of infrequency tables along with mean values, while the created groups in the dataset were expressed through descriptive statistics. Different statistical measures such as mean value, standard deviation, and invariance were used for dependent and independent constructs, which helped show how closely or distantly scattered these ìwo important pillars of the analysis ideally are. According to the study, ATM banking in Kenya exhibited a robust and affirmative connection with financial inclusion. As suggested by the study, policymakers are urged to adopt technology-driven approaches to achieve better financial inclusion for Kenyans. The current research aims to fill an important contextual gap by examining SACCOs in Homa-Bay County instead of commercial banks, which were previously studied.

2.4. Summary of Literature Review and Research Gaps

This section gives a summary of the literature review to outline the methodological, conceptual and empirical gaps in most of the reviewed studies.

Authors and Context	**Focus of Study**	**Key Findings**	**Gaps in Research**
Gupta and Bansal (2020) - Rural India	Impact of internet banking on financial inclusion	Internet banking enhances financial inclusion by providing greater access and usage	Focus on rural India, lacks contextual information for other regions
Agarwal and Singh (2017) - Rural India	Impact of internet banking on financial behavior and credit access	Internet banking adoption improves access to credit and encourages financial transactions	Focus on rural India, lacks contextual information for other regions
Haque et al. (2019) - Bangladesh	Impact of internet banking on financial inclusion	Internet banking removes geographical barriers, providing reliable and cost-effective access to finance	Geographical focus on Bangladesh
Evans (2018) - African countries	Impact of internet and mobile phone usage on financial inclusivity	Internet and mobile phone usage improve financial inclusion	Focus on African countries, lacks broader contextual information
Ramadhan (2011) – Uganda	Factors affecting internet banking acceptance and customer satisfaction	Innovative approaches needed to increase awareness and satisfaction in internet banking	Focus on customer satisfaction rather than financial inclusion

Authors and Context	Focus of Study	Key Findings	Gaps in Research
Lenka and Barik (2018) - SAARC countries	Impact of mobile phone usage and internet growth on financial inclusion	Internet banking positively correlates with financial inclusion	Focus on SAARC countries, lacks contextual information for other regions
Chib and Hales (2014) - Developing countries	Impact of mobile banking on financial inclusion	Mobile banking overcomes geographic barriers, increasing access to financial services	General focus on developing countries, lacks specific regional context
Kar and Kar (2017) - India	Mobile banking's impact on financial access for remote communities	Mobile banking increases financial access without dependence on physical infrastructure	Focus on India, lacks broader contextual information
Mago and Chitokwindo (2014) - Zimbabwe	Impact of mobile banking on financial inclusion	Mobile banking offers secure and convenient access, stimulating economic advancement in rural areas	Contextual gap due to study location being Zimbabwe
Kemal (2019) - Pakistan	Enhancing financial inclusion via mobile banking for government payments	Mobile banking empowers women, achieving social and financial inclusion	Contextual gap due to focus on Pakistan
Maina (2018) - Kenya	Impact of mobile banking on financial inclusion	Mobile banking technology advances financial inclusion	Focused on banks, lacks broader context
Etim (2014) - West Africa	Slow adoption rates of mobile money in West Africa	Banks need to persuade customers to use mobile banking services	Contextual gap due to focus on West Africa
Singh and Bansal (2019) - India	Impact of agency banking on financial accessibility	Agency banking improves financial inclusion through authorized agents	Contextual gap due to focus on India
Nyagdza (2019) - Zimbabwe	Achieving financial inclusion via agency banking	Agency banking aligns financial inclusion with organizational needs	Contextual gap due to focus on Zimbabwe
Githemo (2014) - Nairobi, Kenya	Impact of agency banking on SME financial performance	Agency banking should reduce transaction costs and develop risk management strategies	Focus on financial performance rather than financial inclusion
Lotto (2016) - Tanzania	Leverage of agency banking for financial inclusion	Agency banking expands geographical coverage and financial inclusivity	Contextual gap due to focus on Tanzania

Table 1: Summary of Literature Review and Research Gaps

3. Research Methodology

3.1. Introduction

This section discusses the research design and methodology used in this research. According to Jackson's (2013) study, a crucial part of any research project involves understanding and implementing sound research methodologies. Through this particular segment of writing, one can gain knowledge of the important elements that make up a good research design, including selecting an appropriate sample size and collecting only relevant data.

3.2. Research Design

In essence, a research design serves as a roadmap that guides researchers in solving problems by collecting and analyzing data. Descriptive research entails answering inquiries concerning the current condition of studied subjects through data gathering, as per Mugenda and Mugenda (2003). The aim is to obtain opinions from the respondents about their perception of innovative banking's role in achieving financial inclusion.

This study adopted a descriptive research design. In-depth knowledge about a certain instance through detailed variable descriptions calls for descriptive research as an appropriate method. The approach of using a descriptive research design was found suitable by Bloomfield and Fisher (2019), which helps in analyzing people's behaviours related to their opinions or outlooks. Therefore, it fits right for the present study aiming at understanding how respondents perceive innovative banking solutions along with financial inclusion.

3.3. Target Population

The research was to examine Savings and Credit Cooperative Societies operating in Homa-Bay County. There are a total of 44 Savings and Credit Cooperative Societies operating in Homa-Bay County (SASRA, 2020). On average, there are 10-50 employees working in the SACCOs that operate in Homa-Bay County (Wanjala & Riitho, 2020). The aim is to include five employees from every one of the 44 targeted SACCOs in this study. Our target population comprises staff from management and subordinate staff from all 44 SACCOs. There is an anticipation that the targeted group possesses significant experience related to the SACCO sector and an understanding of how innovative banking techniques are impacting financial inclusion within Homa-Bay County. Subordinate staff are typically the first point of contact for customers in SACCOs. Their experiences and feedback can offer a frontline view of how innovative banking methods are perceived by clients and how these methods contribute to financial inclusion. The distribution of the population is shown in table 2.

Category	Population
Managers	132
Subordinate staff	88
Total	220

Table 2: Target Population

3.4. Sample and Sample Technique

The idea behind sampling is to choose a small subset that reflects the overall characteristics of the larger population. The methodology for respondent selection in this study will be a stratified approach. Stratified random sampling means dividing the entire population into distinct subgroups based on particular traits while ensuring that each characteristic is equally represented in the final sample, and the use of a stratified random sample ensures the absence of any bias. Yamane's (1967) method will be used to calculate the sample size for this population with a 95% confidence interval. The formula is as follows:

$$n = \frac{N}{[1 + N(e)^2]}$$

Where:
n = sample size
N = population size
e= error term (0.05)

Therefore, the sample size is arrived at as follows:

$$n = \frac{220}{[1 + 220(0.05)^2]}$$

n =141

The sample size in this study will be 122 respondents. These will be employees from the SACCOs in Homa-Bay County.

Category	Population	Percent	Sample Size
Managers	132	63.64%	84
Subordinate staff	88	64.77%	57
Total	220	64.09%	141

Table 3: Sample Size

3.5. Data Collection Instruments

The core data for this study was gathered through the use of standardized questionnaires administered to SACCO managers and subordinate staff. This aided the researcher in providing explanations for, gaining insight into, and delving deeper into the experiences, behaviors, and phenomena of the research subjects.

3.6. Pilot Test

The purpose of conducting pilot testing is to verify whether gathered information can provide answers to investigative questions as intended by Saunders et al. (2012). Pilot testing plays a significant role in uncovering problematic areas, such as ambiguity and confusion within questionnaires (Newing, 2011). In agreement with Cooper and Schindler (2006), pilot testing is intended to spot weaknesses in the plan's development stages while also serving as an alternative method of collecting data on the study population.

As mentioned by Cooper and Schindler (2006), non-statistical respondent selection is sufficient when conducting validity/reliability tests on instrumentation in a pilot study. The test to ensure that the data collection instrument, a questionnaire guide, is both relevant and effective will involve conducting it with a 10% sample group. To ensure that the research instruments are valid and reliable, a pilot study will be conducted with a random selection of 39 staff.

3.6.1. Validity and Reliability

To establish the validity of the data, content validity was employed through an evaluation of relevancy and the suitability of the elements included in data collection instruments. This directive was adjusted in response to suggestions to ensure that the instruments used measured what was intended.

Reliability refers to the extent to which a research instrument consistently produces the same results (Mugenda & Mugenda, 2008). To measure the internal consistency of the findings, Cronbach's Alpha was utilized. The coefficients, which range from 0 to 1, were considered reliable if they exceeded 0.7. According to Coopers and Schindler (2008), an alpha value of 0.7 or higher is regarded as an acceptable level of reliability. As part of the process of conducting pilot testing, the completion of a questionnaire by randomly selected individuals is necessary. By excluding these respondents from the final study sample, the researcher can control for any potential response bias.

3.7. Data Collection Procedure

According to Leavy (2015), data collection is the process of accurately and methodically amassing facts that pertain to the study's hypotheses. Both the university and the National Commission of Science, Technology and Innovation (NACOSTI) gave their permission for the study to go on. The researcher delivered questionnaires to the respondents to acquire the primary data for the study. The respondents were the managers and subordinate staff from all the 44 SACCOs in Homa-Bay County.

3.8. Data Analysis and Presentation

Raw data must be arranged systematically so that it can provide valuable information when applying Data Analysis techniques. Furthermore, it involves both computing specific measurements and indices along with scrutinizing for underlying patterns within the data set. As indicated by Mugenda and Mugenda (2003), making sense of collected data requires that improper measures, such as cleaning up of data, are conducted prior to analysis. Data analysis is seen as an application of reasoning that allows for understanding gathered data to identify inconsistent patterns and summarise relevant details revealed in the course of research (Zikmund et al., i2010).

The analysis of the questionnaire data involved using descriptive categories like central-tendency measures to understand the demographics. To determine the impact of innovative banking on financial inclusion, the researcher conducted a regression analysis. In order to analyze the data, the researcher used SPSS software and conducted multiple regression modeling as the chosen method of obtaining the particular inferential statistic. The researcher revealed the importance of the study's model as a whole using ANOVA. Another way to determine how much impact innovative banking has on financial inclusion for SACCOs in Homa-Bay County is by analyzing the coefficients within the equation. The determination of whether the individual variables are significant or not is based on the use of a critical p-value set at 0.05. The resulting output was presented using graphs and tables. The regression model applied in the research is shown as follows:

For the individual independent variable:

$Y = \beta 0 + \beta 1X1 + \epsilon$

$Y = \beta 0 + \beta 2X2 + \epsilon$

$Y = \beta 0 + \beta 3X3 + \epsilon$

$Y = \beta 0 + \beta 4X4 + \epsilon$

For all the independent variables:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \epsilon$

Where:

Y = Financial inclusion among SACCOs in Homa-Bay County

X1 = Internet Banking

X2 = Mobile Banking

X3 = Agency Banking

X4 = ATM Banking

Coefficients $\beta i = 1...4$ will be employed to determine how insensitive the dependent variable (Y) is to changes of a unit in the predictor variables (X1, X2, X3 and X4) in the model, where $\beta 0$ represents the constant term. Unpredictable model fluctuations are represented by the error (ϵ) term.

3.9. Diagnostic Tests

During inferential analysis, evaluation measures act as important resources in determining the soundness, consistency, and suitability of a regression approach. The examinations support analysts in evaluating the framework's presumptions, recognizing possible abnormalities, finding influential data values, and evaluating. During this research, the diagnostic tests consist of a normality test, multicollinearity test, and heteroscedasticity test.

3.9.1. Normality Test

Normality tests are diagnostic tests utilized in studies to ascertain whether an identified dataset matches a normal distribution. These examinations play a crucial role in establishing suitable mathematical techniques to utilize for additional analysis. The belief in normality is frequently observed in numerous statistical analyses and models, like parametric tests, including t-tests, ANOVA, and regression analysis. It is crucial to pay attention that all data obeys a normal distribution. Breaking this assumption may impact the accuracy of the statistical tests and bring about wrong deductions. In this study, the Shapiro-Wilk Test and Kolmogorov i-Smirnov test will be applied. The Shapiro-Wilk test calculates a test statistic based on the correlation between the observed data and the corresponding values expected from a normal distribution. The p-value obtained from this test is used to determine whether the data significantly deviates from formality. If the p-value is greater than the significance level of 0.05 m, the data can be assumed to be informally distributed. The Kolmogorov-Smirnov test compares the empirical cumulative distribution function (ECDF) of the data with the cumulative distribution function of the normal distribution. It produces a test statistic and p-value, indicating the goodness-of-fit between the observed data and the theoretical normal distribution. If the p-value is above the chosen significance level, the data is considered informally distributed. The foundation of the Shapiro-Wilk Test is found in the correspondence between data and normal scores. Even after accounting for the significant association, the Shapiro- 37 Wilk Test performed better than the Kolmogorov-Smirnov Test when testing for normalcy.

3.9.2. Multicollinearity Test

Multicollinearity tests are diagnostic tests used in research to assess the presence and severity of multicollinearity among predictor variables in a regression analysis. Multicollinearity occurs when there is a high correlation between two or more predictor variables, which can cause problems in regression analysis by inflating standard errors, making coefficient estimates unstable, and reducing the interpretability of the results. In this study, the Variance Inflation Factor (VIF) in SPSS will be used to test multicollinearity problems by utilizing the study variables. The VIF is a quantitative measure of multicollinearity that assesses how much the variance of an estimated regression coefficient is increased due to multicollinearity. VIF values greater than 1 indicate the presence of multicollinearity, with higher values suggesting more severe collinearity. A commonly used rule of thumb is that VIF values above 5 or 10 are indicative of significant multicollinearity.

3.9.3. Heteroscedasticity Test

Tests for Heteroscedasticity are examinations employed in investigations to determine the existence of unequal invariances in regression analysis. These examinations aid scientists in establishing whether the deviation of the inconsistencies stays unchanged across multiple tiers of the independent variables. Variations in Heteroscedasticity happen when the variation of the discrepancies is not stable across various stages of the explanatory variables. This breaks one of the beliefs in linear regression analysis. Breeches in the assumption of homoscedasticity may result in biased standard errors, inefficient parameter approximations, and inaccurate conclusions. Hence, it is crucial to examine for equal variance and employ improper statistical approaches to handle Heteroscedasticity in case of need.

The issue of Heteroscedasticity may be addressed by computing the robust standard deviations. The normality's assumptions are going to be examined by employing the Jarque-bera test. The findings obtained from the Jarque-beta test suggest that the inaccuracies are sometimes distributed. The irregularity related to the errors will be resolved by altering the information by applying logarithmic calculations.

3.10. Ethical Consideration

Following a code of conduct is necessary when conducting research and publishing the results (Greenwood, 2016), and obtaining a permit from the National Council for Research and Technology is necessary to meet the ethical requirements mandated by NACOSTI. Throughout the research process, there will be strict adherence to confidentiality and anonymity, and the intention of usage of solely academic reasons for any data or information provided to the researchers shall be conveyed to all participants. A briefing by the researcher on how the study would work and what information would be gathered from them is forthcoming. Considering aspects like objectivity and transparency, along with protecting respondents' rights to privacy, are essential components of this study. The confidentiality of personal data, including respondent names and those of their family members, is upheld, and respondents are free to participate in or withdraw from this study by giving their consent.

4. Data Analysis, Interpretation and Discussion

4.1. Introduction

Chapter four serves as the core of this study, delving deeply into data analysis, interpretation, and discussion pertaining to the research topic. Within this pivotal chapter, the data is meticulously scrutinized, and interpretations are drawn to unveil underlying patterns, trends, and insights pertinent to the research objectives. This section is meticulously crafted to guide the reader through a comprehensive analysis and interpretation, facilitating a nuanced understanding of the intricate relationship between innovative banking practices and financial inclusion among Savings and Credit Cooperative Societies (SACCOs) in Homa Bay County, Kenya. Furthermore, it lays the groundwork for potential theoretical and empirical findings, offering insights into the implications for policy formulation and future research endeavours.

4.2. Response Rate

Out of 141 questionnaires distributed to participants, 122 were deemed suitable for analysis, with 19 not returned. This resulted in an impressive response rate of 86.52%, surpassing the stringent standards established by Greener (2008). Such a high response rate demonstrates significant participation and engagement from the research subjects, thereby strengthening the reliability and validity of the study's results.

Category	Frequency	Percentage
Completed and returned	122	86.52%
Not returned	19	13.48%
Total	141	100

Table 4: Response Rate

4.3. Reliability Test

To verify the reliability of the questionnaire, a pre-test was performed with a sample of respondents. Mugenda and Mugenda (2008) recommend using 1-10% of the total questionnaires for pilot testing. In this study, 12 questionnaires, equating to 10.0%, were pre-tested with participants from different SACCOs.

Variable	Number of Items	Cronbach's Alpha
Internet banking	4	0.831
Mobile banking	4	0.823
Agency banking	4	0.874
ATM banking	4	0.859
Overall Cronbach's coefficient	16	0.921

Table 5: Reliability Statistics

The reliability test results in table 5 demonstrate a high level of internal consistency for the variables measured in the study. Each variable's Cronbach's Alpha is above the commonly accepted threshold of 0.7, indicating reliable scales. The overall Cronbach's coefficient for all 16 items is 0.921, which reflects excellent internal consistency across the entire instrument. These results suggest that the questionnaire used to measure these variables is highly reliable and can be confidently used to assess the influence of innovative banking on financial inclusion among SACCOs in Homa-Bay County.

4.4. Demographic Analysis

Table 5 shows the data necessary for the frequency and the percentage calculations, which can be used to observe the amount and the percentage values of participants that belong to the male and female respondents.

Gender		
	N	%
Male	74	60.7%
Female	48	39.3%

Table 6: Gender

Out of the total number of 122 participants, 74 people turned out to be male, which accounts for 60.7% of the whole sample or the total number of participants, while the rest of 48 people self-identified their gender as male, which accounts for 39.3% of the same. All the participants responded to the questionnaires and submitted them.

The distribution of the age group among 122 respondents, as shown in table 6, allows the researchers to acquire a better sense of the population's demographics.

Age		
	N	%
Below 30	25	20.5%
31-40	44	36.1%
41-50	39	32.0%
51-65	14	11.5%

Table 7: Age

The most prevalent groups are those aged between 31 and 50 years old, which make up the largest cohort responding to the questionnaire to the tune of 68.1% of all the respondents. The focus seems to be on the area of the working-age population, which indicates that the survey involved working individuals, mostly in the prime age range. The age distribution reveals that, as age extends beyond 50 years of age, the presence within the population decreases significantly with each age group. In regard to the group of respondents aged 51-65, they add up to only 11.5% of the sample, implying that the number of older respondents is small. The respondents of the lowest age group have an interesting share; 20.5% of the above thirty individuals checked the survey. Moreover, the age group of 21-30 was moderate in number when compared to those in their 30s and 50s. This is a relevant detail that means that some diverse people are present in the sample.

The analysis of the respondents' years of experience working in SACCOs indicated that the distribution of the respondents involved in the survey was highly balanced regarding different experience levels, as shown in table 8.

How Long Have You Worked in SACCOs?		
	N	%
Up to 5	18	14.8%
5-10	29	23.8%
10-15	35	28.7%
15-20	20	16.4%
Above 20	20	16.4%

Table 8: Years of Experience

A considerable portion had experience of about 5 to 15 years, with the greatest number of people having 10 to 15 years (28.7%). It is essential to point out that many respondents have been providing their service in SACCOs for more than ten years, 16.4% of which have been displaying their expertise for 15-20 years and another 16.4% for the last 20 years. A group with experienced personnel is probably the protagonist, presenting their know-how of the implication of innovative banking on financial inclusion based on their deep knowledge from years of experience.

People with longer experience by age may provide considerable information on the historical development of banking culture and practices at SACCO and how the innovations over time have impacted financial inclusion. This perspective would be core in assessments of whether the innovative solutions are being rolled out successfully and could be a source of the challenges that need to be addressed. The diversity of experiences among the respondents may bring about an all-encompassing study on the impact of innovative banking on financial inclusion, considering both the long-term trends of the industry and modern innovations.

The analysis of a respondent's highest level of education is shown in table 9.

Highest Level of Education		
	N	%
Diploma	30	24.6%
Bachelors	62	50.8%
Masters	30	24.6%

Table 9: Highest Level of Education

The percentages are balanced, and a diverse educational background can be seen, with 24.6% holding a diploma, 50.8% holding a degree, and still another 24.6% holding a master's degree. This percentage likewise shows a dispersal of levels of education among the group under study.

The majority of respondents (50.8%) hold a degree, which implies that a large part of the sample population has attended a university and completed undergraduate studies. Given this observation, it is plausible to infer that a person's

level of education is parallel to his expertise and knowledge, which may affect the comprehension and interpretation of innovative banking practices.

This group includes respondents with master's degrees (24.6%), which shows a respondent population group with postgraduate education and potential expertise in specialized fields. The inputs as they make their views on the complexities of financial inclusion and the effects of banking solutions inventions in the world of SACCOs are increasing the understanding.

4.5. Diagnostic Tests

4.5.1. Test for Normality

The Shapiro-Wilk test is a widely used test for normality that is sensitive to deviations from normality in the tails of the distribution. It is particularly effective for small to medium-sized samples. In this study, the Shapiro-Wilk test was employed to evaluate the variables and ascertain whether the data adhered to a normal distribution. The results are delineated in table 10. At an alpha level of 0.05, a computed p-value below 0.05 signifies rejection of the null hypothesis, implying a departure from normal distribution. Conversely, a p-value exceeding 0.05 indicates non-rejection of the null hypothesis, suggesting that the data originated from a population conforming to a normal distribution.

The null and alternative hypotheses are as follows:

- H0: The data follows a normal distribution
- H1: The data does not follow a normal distribution

As detailed in table 10, the obtained p-values for all five variables under scrutiny in this research surpassed 0.05.

Tests of Normality						
	Kolmogorov-Smirnova			**Shapiro-Wilk**		
	Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Internet Banking	.181	122	.084	.881	122	.086
Agency Banking	.152	122	.080	.896	122	.079
ATM Banking	.149	122	.085	.891	122	.087
Mobile Banking	.218	122	.076	.864	122	.077
a. Lilliefors Significance Correction						

Table 10: Test for Normality

In accordance with the Shapiro-Wilk test criteria, the null hypothesis is not rejected. Hence, it can be concluded that the data was sourced from a population exhibiting a normal distribution.

Besides, the Kolmogorov-Smirnov test is another common test for normality that is sensitive to differences in the entire distribution. It is suitable for larger sample sizes. In the context of the provided data, the Kolmogorov-Smirnov test statistics and p-values provide information on the goodness-of-fit between the observed data and a theoretical normal distribution. A smaller test statistic and a non-significant p-value indicate a better fit to the normal distribution, while a larger test statistic and a significant p-value suggest deviations from normality. Since the obtained p-values for all five variables under scrutiny in this research surpassed 0.05, it can be concluded that the data shows a normal distribution.

4.5.2. Test for Multicollinearity

The multicollinearity test, as indicated in the provided data, is essential for assessing the presence of multicollinearity among the independent variables in a regression model. Multicollinearity occurs when independent variables in a regression model are highly correlated with each other, which can lead to issues such as unstable parameter estimates, inflated standard errors, and difficulties in interpreting the effects of individual predictors. In the context of the collinearity statistics provided for Internet Banking, Agency Banking, ATM Banking, and Mobile Banking, the Tolerance and Variance Inflation Factor (VIF) values are commonly used indicators to assess multicollinearity. Tolerance is the proportion of variance in an independent variable that is not explained by the other independent variables in the model. A tolerance value close to 1 indicates that the variable is not redundant with other predictors, suggesting low multicollinearity. According to table 11, tolerance values ranging from 0.722 to 0.824 for the different variables suggest that these variables have a low level of redundancy with each other.

Model	Collinearity Statistics		
	Tolerance	VIF	Comment
(Constant)			
Internet Banking	0.825	2.218	No Much Impact of Multicollinearity
Agency Banking	0.722	3.489	No Much Impact of Multicollinearity
ATM Banking	0.824	2.036	No Much Impact of Multicollinearity
Mobile Banking	0.729	1.828	No Much Impact of Multicollinearity
a. Dependent Variable: Financial Inclusion			

Table 11: Collinearity Statistics

VIF is the reciprocal of the Tolerance and quantifies how much the variance of an estimated regression coefficient is increased due to multicollinearity. A VIF value greater than 10 is often considered indicative of multicollinearity. In the provided data, VIF values ranging from 1.828 to 3.489 for the different independent variables indicate that multicollinearity is not a significant concern, as all VIF values are below the threshold of 10.

Based on the collinearity statistics provided, it can be concluded that there is no significant multicollinearity issue among the independent variables (Internet Banking, Agency Banking, ATM Banking, and Mobile Banking) in the regression model for Financial Inclusion. This suggests that the independent variables are relatively independent of each other and do not pose a threat to the validity of the regression analysis.

4.5.3. Test for Heteroscedasticity

Heteroscedasticity refers to the situation in which the variance of the errors in a regression model is not constant across all levels of the independent variables. Detecting and addressing heteroscedasticity is crucial in regression analysis as it can lead to biased parameter estimates, inefficient coefficient estimates, and incorrect inferences about the statistical significance of the predictors.

According to the model test statistic, in this case, is reported as 1.711. This statistic is typically compared to critical values from a chi-square distribution to determine the presence of heteroscedasticity. A larger test statistic suggests a higher likelihood of heteroscedasticity in the regression model.

Degrees of Freedom: The degrees of freedom associated with the model test statistic indicate the number of independent observations available for estimating the error variance. In the provided data, the degrees of freedom are reported as 4, which is likely related to the number of predictors in the regression model.

P-Value: The p-value associated with the model test statistic is crucial for determining the statistical significance of the test for heteroscedasticity. A low p-value (typically below 0.05) suggests evidence against the null hypothesis of homoscedasticity, indicating the presence of heteroscedasticity in the regression model.

Model		Test Statistic	df	P-Value
1	Regression	1.711	4	.134b

Table 12: Test for Heteroscedasticity

As shown in table 12, the reported p-value of 0.134 suggests that the test for heteroscedasticity is not statistically significant at the conventional significance level of 0.05. This implies that there is no strong evidence to reject the null hypothesis of homoscedasticity, indicating that the variance of the errors in the regression model is relatively constant across the levels of the independent variables.

4.6. Pearson's Correlation Analysis

Pearson's bivariate correlation is one of the statistical tools by which one can measure the relationship that exists between two attributes. The value could be anywhere between 1 and -1, with 1 representing a strong positive correlation, -1 having a strong negative correlation, and 0 corresponding to no relationship between the variables. Once the correlation value is close to zero, the relationship between both variables fades out (as the strength of such a relationship turns out to be weaker).

Correlations						
		Internet Banking	**Agency Banking**	**ATM Banking**	**Mobile Banking**	**Financial Inclusion**
Internet Banking	Pearson Correlation	1	.254**	.172**	.189**	.965**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	122	122	122	122	122
Agency Banking	Pearson Correlation	.254**	1	.165**	.163**	.975**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	122	122	122	122	122
ATM Banking	Pearson Correlation	.172**	.165**	1	.179**	.976**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	122	122	122	122	122
Mobile Banking	Pearson Correlation	.189**	.163**	.179**	1	.982**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	122	122	122	122	122
Financial Inclusion	Pearson Correlation	.165**	.975**	.976**	.982**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	122	122	122	122	122
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 13: Correlations

4.6.1. Pearson's Correlation Analysis between Independent Variables

The correlations between the independent variables (Internet Banking, Agency Banking, ATM Banking, Mobile Banking), as shown in the table, provide insights into the relationships among these innovative banking channels within the context of the research on financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County, Kenya: Internet Banking and Agency Banking: The correlation between Internet Banking and Agency Banking is weak (Pearson correlation = 0.254, p = 0.000). This suggests a positive but not extremely strong relationship between these two digital banking channels.

Internet Banking and ATM Banking: The correlation between Internet Banking and ATM Banking is also low (Pearson correlation = 0.172, p = 0.000) (Table 13). This indicates a positive but relatively weaker relationship between these two channels.

Internet Banking and Mobile Banking: The correlation between Internet Banking and Mobile Banking is low (Pearson correlation = 0.189, p = 0.000) (Table 13). This indicates a relatively low positive relationship between these two digital channels, suggesting that they may complement each other in providing convenient and accessible banking services.

Agency Banking and ATM Banking: The correlation between Agency Banking and ATM Banking is relatively weak (Pearson correlation = 0.165, p = 0.000) (Table 13). This suggests a less pronounced relationship between these two banking channels. While both Agency Banking and ATM Banking aim to improve access to financial services, the correlation indicates that they may cater to different customer segments or offer distinct advantages in terms of convenience and service delivery.

Agency Banking and Mobile Banking: The correlation between Agency Banking and Mobile Banking is moderate (Pearson correlation = 0.163, p = 0.000). This suggests a positive but not extremely strong relationship between these two channels. Savings and Credit Cooperative Societies in Homa-Bay County could potentially benefit from leveraging both Agency Banking and Mobile Banking to reach a wider customer base and enhance financial inclusion through multiple touchpoints. ATM Banking and Mobile Banking: The correlation between ATM Banking and Mobile Banking is relatively moderate (Pearson correlation = 0.310, p = 0.000).

In conclusion, the correlations between the independent variables (Internet Banking, Agency Banking, ATM Banking, and Mobile Banking) provide valuable insights into the interrelationships among these innovative banking channels. Understanding these correlations can help Savings and Credit Cooperative Societies in Homa-Bay County optimize their digital banking strategies to promote financial inclusion and enhance the overall banking experience for their members.

4.6.2. Pearson's Correlation Analysis between Independent and Dependent Variables

Internet Banking and Financial Inclusion: According to table 13, the correlation between Internet Banking and Financial Inclusion is strong (Pearson correlation = 0.965, p = 0.000). This indicates a significant positive relationship

between the use of Internet Banking services and the level of financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County. This suggests that the adoption of Internet Banking can potentially enhance financial inclusion by providing easier access to financial services.

Agency Banking and Financial Inclusion: The correlation between Agency Banking and Financial Inclusion is also significant (Pearson correlation = 0.975, p = 0.000). This implies that the presence of agency banking services is positively associated with higher levels of financial inclusion. Savings and Credit Cooperative Societies in Homa-Bay County may benefit from leveraging agency banking to reach underserved populations and improve financial access.

ATM Banking and Financial Inclusion: The correlation between ATM Banking and Financial Inclusion is statistically significant (Pearson correlation = 0.976, p = 0.000). This suggests that the availability and utilization of ATM banking services can contribute positively to financial inclusion among the target population. ATMs can provide convenient access to financial services, especially in areas where traditional banking infrastructure is limited.

Mobile Banking and Financial Inclusion: The correlation between Mobile Banking and Financial Inclusion is also strong (Pearson correlation = 0.982, p = 0.000). This indicates that the use of mobile banking technologies is highly correlated with increased financial inclusion. Mobile banking offers a convenient and cost-effective way for Savings and Credit Cooperative Societies in Homa-Bay County to expand their outreach and provide financial services to a wider population.

Hence, the significant positive nature of the association indicates that all channels of innovative banking (Internet Banking, Agency Banking, ATM Banking, and Mobile Banking) positively correlate with financial inclusion amongst SACCOs in Homa-Bay County, Kenya. Through the utilization of this digital banking, one can arguably assist in improving financial inclusion, increasing access to finance, and improving the financial standards of the intended group.

4.7. Regression Analysis

Regression analysis demonstrates that all four independent variables (Internet Banking, Agency Banking, ATM Banking, and Mobile Banking) play a major role in influencing financial inclusion among most Savings and credit cooperative societies in Homa-Bay County, Kenya.

4.7.1. Influence of Internet Banking on Financial Inclusion

The provided statistical results examine the influence of internet banking on financial inclusion.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.429a	.432	.421	7.27583%
a. Predictors: (Constant), Internet Banking				

Table 14: Regression Model of Internet Banking and Financial Inclusion

The model summary shows a correlation coefficient (R) of .429 (Table 14), indicating a moderate positive correlation between internet banking and financial inclusion. The R Square value of .432 suggests that internet banking accounts for 43.2% of the variance in financial inclusion. While this indicates that internet banking is a relevant factor, it also implies that more than half of the variance in financial inclusion is explained by other factors not included in this model.

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	11.376	2.126		5.352	.060
	Internet Banking	0.025	.028	.365	0.898	.071
a. Dependent Variable: Financial Inclusion						

Table 15: Regression Coefficients of Internet Banking and Financial Inclusion

Table 15 provides further detail on the nature of this relationship. The constant (intercept) value of 11.376 represents the baseline level of financial inclusion when the internet banking variable is zero. This suggests that even without internet banking, a significant level of financial inclusion exists, likely influenced by other determinants. The unstandardized coefficient for internet banking is 0.025, indicating that for each unit increase in internet banking, financial inclusion increases by 0.025 units. Although positive, this coefficient is relatively small, suggesting that the impact of internet banking on financial inclusion is marginal.

The standardized coefficient (Beta) of .365 offers a scale-free measure of this relationship's strength. A Beta value of .365 indicates a moderate positive influence of internet banking on financial inclusion, but it is not overwhelmingly strong. This suggests that while internet banking contributes to financial inclusion, it is not the primary driver.

Statistical significance is another critical aspect to consider. The t-value of 0.898 and the p-value (Sig.) of .071 are essential in understanding the reliability of these results. The t-value, being below 2, indicates that the coefficient estimate for internet banking is not highly reliable. The p-value of .071 exceeds the threshold of .05, indicating that the relationship between internet banking and financial inclusion is not statistically significant at the 5% level. This suggests that we cannot confidently assert that the observed relationship is different from zero. The findings contrast with the research conducted by Gupta and Bansal (2020) in India, which concluded that internet banking positively impacts financial inclusion. According to their study, internet banking significantly enhances financial access and usage.

4.7.2. Influence of Agency Banking on Financial Inclusion

The regression analysis results demonstrate a significant and robust relationship between Agency Banking and Financial Inclusion.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.895a	.801	.799	6.15583%
a. Predictors: (Constant), Agency Banking				

Table 16: Regression Model of Agency Banking and Financial Inclusion

The high R-square value of 0.801 (Table 16) indicates that approximately 80.1% of the variation in financial inclusion can be explained by the presence of Agency Banking. This suggests that Agency Banking plays a substantial role in enhancing financial inclusion, possibly by providing easier access to financial services in areas where traditional banking infrastructure may be lacking or limited.

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	6.510	1.436		4.534	.000
	Agency Banking	.983	.020	.975	48.449	.000
a. Dependent Variable: Financial Inclusion						

Table 17: Regression Coefficients of Agency Banking and Financial Inclusion

The coefficient for Agency Banking stands at 0.983 (Table 17), indicating that for every unit increase in Agency Banking services, there is an estimated increase of 0.983 units in financial inclusion. This coefficient is highly significant ($p < 0.001$), suggesting a strong influence of Agency Banking on financial inclusion.

Additionally, the standardized coefficient (Beta) of 0.975 (Table 17) reaffirms the strength and positive direction of the relationship between Agency Banking and financial inclusion. This standardized coefficient indicates the relative importance of Agency Banking compared to other factors in influencing financial inclusion, emphasizing its significant contribution. Based on the regression analysis, it is evident that Agency Banking has a profound influence on promoting financial inclusion. Its widespread availability and accessibility likely contribute to expanding financial services to underserved populations, thereby fostering greater economic participation and empowerment among individuals and communities. The findings are further corroborated by Singh and Bansal's (2019) research, which demonstrated how agency banking significantly enhances financial accessibility and usage, particularly for marginalized or underserved populations. Through authorized agents, individuals can improve their financial inclusion by conducting transactions and accessing basic banking services. Besides, Nyagdza (2019) concurs, finding that agency banking provides the necessary consistency for financial institutions to achieve sufficient financial inclusion within Zimbabwe.

4.7.3. Influence of ATM Banking on Financial Inclusion

The regression analysis results indicate a significant relationship between ATM banking and financial inclusion.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.960a	.922	.912	6.11392%
a. Predictors: (Constant), ATM Banking				

Table 18: Regression Model of ATM Banking and Financial Inclusion

The R-squared value of .922 (Table 18) indicates that ATM banking explains approximately 92.2% of the variance in financial inclusion, further underscoring the substantial impact of ATM services on enhancing financial inclusion.

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	.492	1.540		.320	.750
	ATM Banking	1.007	.021	.976	48.798	.000
a. Dependent Variable: Financial Inclusion						

Table 19: Regression Coefficients of ATM Banking and Financial Inclusion

The coefficient for ATM banking is 1.007 (Table 19), with a p-value of .000, suggesting a strong positive influence of ATM banking on financial inclusion. This implies that for every unit increase in ATM banking services, there is a corresponding increase of approximately 1.007 units in financial inclusion, holding other factors constant.

ATM banking plays a crucial role in expanding financial access and inclusion by providing individuals with convenient and accessible means to conduct financial transactions, regardless of geographical location or banking hours. The widespread availability of ATMs enables individuals, especially those in underserved or remote areas, to deposit, withdraw, and transfer funds, thereby fostering greater participation in the formal financial system. Moreover, the standardized coefficient of .976 suggests that ATM banking has a highly significant and standardized effect on financial inclusion, emphasizing its importance as a key driver in promoting financial access and usage among diverse populations. Research by Aragão and Araújo (2016) in Brazil supports this view, finding that ATM locations significantly improve financial accessibility, particularly in remote or underserved regions. Similarly, Kim and Seneviratne (2013) highlight the role of ATMs in extending financial reach to rural communities. Their study found that installing ATMs in remote areas led to increased usage and availability of banking facilities.

4.7.4. Influence of Mobile Banking on Financial Inclusion

The regression analysis results highlight a significant relationship between mobile banking and financial inclusion.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.941a	.885	.883	5.24301%
a. Predictors: (Constant), Mobile Banking				

Table 20: Regression Model of Mobile Banking and Financial Inclusion

The regression model's high R-squared value of .885 (Table 20) indicates that mobile banking explains approximately 88.5% of the variance in financial inclusion, further emphasizing its significant contribution to expanding financial access and usage. Furthermore, the low standard error of the estimate suggests that the model provides a reliable fit to the data, bolstering the validity of the findings.

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	t	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	-.684	1.332		-.513	.409
	Mobile Banking	1.005	.018	.982	57.282	.000
a. Dependent Variable: Financial Inclusion						

Table 21: Regression Coefficients of Mobile Banking and Financial Inclusion

With a coefficient of 1.005 and a p-value of .000, as shown in table 21, mobile banking demonstrates a robust positive influence on financial inclusion. This suggests that for every unit increase in mobile banking services, there is a corresponding increase of approximately 1.005 units in financial inclusion, holding other factors constant. The high standardized coefficient of .982 (Table 21) underscores the substantial and standardized effect of mobile banking on enhancing financial inclusion, indicating its pivotal role in promoting access to financial services.

Mobile banking serves as a critical enabler of financial inclusion by providing individuals with convenient and accessible channels to manage their finances. Through mobile devices, users can perform various banking transactions such as payments, transfers, and account management anytime and anywhere without the constraints of physical bank branches. This accessibility is particularly beneficial for individuals in underserved or remote areas where traditional banking infrastructure may be lacking. Additionally, the widespread adoption of mobile technology has democratized access to financial services, empowering previously unbanked or underbanked populations to participate in the formal financial system. According to Chib and Hales (2014), mobile banking plays a transformative role in extending financial services to previously unbanked individuals, particularly in developing countries. Their research highlights that mobile banking enables people to perform transactions via their mobile devices, overcoming geographic constraints and limitations in conventional banking infrastructure. Similarly, Mago and Chitokwindo (2014) found that low-income individuals in their locality showed a strong interest in using mobile banking due to its security and ease of use.

4.7.5. Influence of Innovative Banking on Financial Inclusion

The model summary provided in table 22 offers a comprehensive analysis of the influence of various innovative banking methods.

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.926a	.858	.856	4.82309%
a. Predictors: (Constant), Mobile Banking, Internet Banking, ATM Banking, Agency Banking				

Table 22: Overall Fit Model Summary

According to table 22, the R Square value of .858 reveals that 85.8% of the variance in financial inclusion can be explained by the combined influence of Mobile Banking, Internet Banking, ATM Banking, and Agency Banking. This substantial proportion indicates that these innovative banking methods are critical factors in determining financial inclusion. The Adjusted R Square value of .856, which adjusts for the number of predictors in the model, is very close to the R Square value, reinforcing the robustness of the model. This indicates that the model is well-fitted and that the predictors reliably explain the variance in financial inclusion.

4.8. Regression of Coefficients

The coefficients for each predictor variable provide insights into the strength and direction of their impact on financial inclusion:

Coefficientsa						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	3.240	1.545		2.097	.038
	Internet Banking	.132	.118	.196	1.964	.062
	Agency Banking	.259	.107	.257	2.418	.017
	ATM Banking	.325	.106	.315	3.081	.003
	Mobile Banking	.628	.095	.613	6.587	.000
a. Dependent Variable: Financial Inclusion						

Table 23: Overall Coefficients

Internet Banking: The unstandardized coefficient for Internet Banking is 0.132, suggesting that a one-unit increase in Internet Banking is associated with a 0.132-unit increase in financial inclusion. The standardized coefficient (Beta) of 0.196 shows a moderate positive effect. However, the t-value of 1.964 and a p-value of .062 suggest that this relationship is not statistically significant at the conventional 5% level. (Table 23).

Agency Banking: Agency Banking has an unstandardized coefficient of 0.259, meaning a one-unit increase in Agency Banking results in a 0.259-unit increase in financial inclusion. The standardized coefficient (Beta) of 0.257, combined with a t-value of 2.418 and a p-value of .017, indicates that this relationship is statistically significant. Agency Banking significantly enhances financial inclusion by extending banking services to underserved and remote areas through third-party agents, making banking more accessible to populations that are traditionally excluded from formal financial systems.

ATM Banking: ATM banking also demonstrates a positive and statistically significant coefficient (0.325, $p = 0.003$). This implies that the presence and utilization of ATMs contribute significantly to financial inclusion. ATMs offer convenient access to basic banking services, particularly for individuals residing in urban and semi-urban areas where ATMs are more prevalent.

Mobile Banking: The coefficient for mobile banking is notably the highest among the innovative banking methods examined (0.628) and is highly statistically significant ($p = 0.000$). This indicates a strong positive association between mobile banking adoption and financial inclusion. Mobile banking has revolutionized access to financial services, especially in regions with limited traditional banking infrastructure, by enabling individuals to conduct financial transactions using their mobile phones.

In conclusion, the analysis suggests that innovative banking methods, particularly agency banking, ATM banking, and mobile banking, play pivotal roles in enhancing financial inclusion. While Internet banking shows a positive trend, its significance is less pronounced. This underscores the importance of diverse banking channels in expanding access to financial services, ultimately contributing to greater financial inclusion and socioeconomic development among Savings and Credit Cooperative Societies in Homa-Bay County, Kenya. These findings can be valuable for policymakers, financial institutions, and researchers aiming to promote financial inclusion through the adoption of innovative banking technologies in the region.

4.9. ANOVA

ANOVA results imply that the regression model as a whole with Sacco members in Homa-Bay County, Kenya, tends to explain the financial inclusion greatly. This is further manifested by a very large significance value (p-value) of 0.000, indicating that either Internet Banking, Agency Banking, ATM Banking or Mobile Banking has a considerable effect on financial inclusion. Based on table 24, the total sum of squares for regression (90774.973) turns out to be way too big compared to the sum of squares for residual (2721.682), implying that the model explains a significant percentage of all variation in financial inclusion. The goodness of fit of the linear regression model is guaranteed, hence capturing the relationship between innovative banking practices and financial inclusion in Homa-Bay County, Kenya.

The F-statistic value of 975.561 is very high, indicating that the variation in financial inclusion explained by the independent variables is significantly greater than the variation not explained by the model. This reinforces the strength of the relationship between innovative banking practices and financial inclusion in the context of Savings and Credit Cooperative Societies in Homa-Bay County, Kenya.

The ANOVA results have shown that the effect of crucial elements of Internet banking, agency banking, ATM banking and mobile banking have had a significant role to play in financial inclusion among SACCOs in Homa-Bay County in Kenya. The model produces a good sense of characterizing the variation in the financial inclusion issue; it emphasizes that innovative banking mechanisms will help promote the issue of financial inclusion in the region.

In conclusion, the ANOVA results support the notion that innovative banking practices play a crucial role in enhancing financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County, Kenya. These findings

can inform strategic decisions and policies aimed at improving financial access and inclusion through the adoption of modern banking technologies in the region.

ANOVAa						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	90774.973	4	22693.743	975.561	.000b
	Residual	2721.682	117	23.262		
	Total	93496.656	121			
a. Dependent Variable: Financial Inclusion						
b. Predictors: (Constant), Mobile Banking, Internet Banking, ATM Banking, Agency Banking						

Table 24: Overall ANOVA

Table 24 presents the essential data required for predicting the impact of independent variables on the dependent variable and evaluating the statistical significance of predictor variables within the model. Furthermore, the values within the 'standardized Coefficients' column depict the magnitude of the predictor variables' influence on the response variable."

For all the independent variables:

$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4$

$Y = 3.240 + 0.257X2 + 0.315X3 + 0.613X4$

Where:

Y = Financial Inclusion among SACCOs in Homa-Bay County
X1 = Internet Banking
X2 = Mobile Banking
X3 = Agency Banking
X4 = ATM Banking

4.10. Hypothesis Summary

Table 25 shows the findings and summary of the hypothesis as per the objectives of the study.

Research Objectives	**Research Hypothesis**	**Conclusion**
i. To determine the influence of Internet banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	H01: There is no statistically significant influence of Internet banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	Fail to Reject
ii. To investigate the influence of mobile banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	H02: There is no statistically significant influence of mobile banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	Rejected
iii. To explore the influence of agency banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	H03: There is no statistically significant influence of agency banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	Rejected
iv. To analyze the influence of ATM banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	H04: There is no statistically significant influence of ATM banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya.	Rejected

Table 25: Summary of the Findings

5. Summary, Conclusion and Recommendations

5.1. Introduction

This section discussed the overall summary and specific objectives and findings of the study. Besides, the conclusion and recommendations for the study have been outlined.

5.2. Summary

The main aim of the study was to investigate the impact of innovative banking practices on financial inclusion within the context of SACCOs in Homa-Bay County. The specific objectives of the study were to determine the influence of Internet banking, mobile banking, agency banking and ATM banking on financial inclusion among savings and credit cooperative societies in Homa-Bay County, Kenya. The study employed a descriptive research design, which aims to provide a detailed understanding of the current state of innovative banking practices and financial inclusion in SACCOs. The target population consists of 44 SACCOs operating in Homa-Bay County, with the aim of observing four employees from each SACCO.

Data collection was conducted through a questionnaire comprising five manageable sections to gather the opinions and perceptions of respondents. The collected data was analyzed using descriptive statistics such as central-tendency measures to understand demographics. Regression analysis was also employed to determine the impact of innovative banking on financial inclusion. Multiple regression modeling was used to examine coefficients within the equation and assess significance. SPSS software was utilized for data analysis. In presenting the data, the researcher organized raw data systematically to derive valuable insights. Data analysis involved computing specific measurements, identifying patterns within the dataset, and summarizing relevant details. The study utilized ANOVA to analyze variance and determine the impact of innovative banking on financial inclusion for SACCOs in Homa-Bay County. The critical p-value was set at 0.05 to assess the significance of individual variables in the regression model.

5.2.1. Influence of Internet Relying on Financial Inclusion

The study on the "Influence of Internet Banking on Financial Inclusion" delves into the impact of Internet banking on expanding financial access and usage, particularly within rural communities. The literature review highlighted the positive correlation between Internet banking adoption and enhanced access to credit, encouraging individuals to engage in financial transactions. Gupta and Bansal's (2020) study emphasized how Internet banking has facilitated greater financial inclusion in rural Indian communities by providing convenient access to a wide range of financial services. Similarly, Haque et al. (2019) demonstrated the significant role of Internet banking in expanding financial access, especially in rural areas.

However, the findings go against these assertions, showing a lesser influence of Internet banking on financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County. The regression analysis revealed that there are no statistically significant relationships between Internet banking usage and financial inclusion indicators, indicating that Internet banking does not play a crucial role in promoting financial access and inclusion within the SACCOs studied within Homa Bay County, Kenya. The study found that SACCOs utilizing Internet banking services alone did not experience higher levels of financial inclusion.

5.2.2. Influence of Mobile Banking on Financial Inclusion

The study on the "Influence of Mobile Banking on Financial Inclusion" gets into the transformative role of mobile banking in expanding financial access and inclusion, particularly in developing regions. The literature review highlighted the positive impact of mobile banking initiatives in providing financial services to previously unbanked individuals, overcoming geographic constraints, and enhancing financial accessibility. Chib and Hales (2014) demonstrated how mobile banking has facilitated financial transactions through mobile devices, bridging the gap in conventional banking infrastructure and reaching underserved populations. Kar and Kar (2017) further emphasized the benefits of mobile banking in increasing financial access for remote and marginalized communities, showcasing its potential to enhance financial inclusion.

The findings corroborated these assertions, revealing a significant influence of mobile banking on financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County. The regression analysis indicated a strong positive relationship between mobile banking usage and financial inclusion indicators, highlighting the pivotal role of mobile banking in promoting financial access and empowerment within the SACCOs studied. SACCO members utilizing mobile banking services experienced improved financial literacy, convenience in conducting transactions, and increased access to a variety of financial products and services. These findings underscore the importance of mobile banking in fostering financial inclusion and economic development in underserved communities.

Overall, the study underscores the transformative impact of mobile banking on financial inclusion, offering a pathway to greater financial access and empowerment for individuals and communities. By leveraging mobile banking technologies, SACCOs and financial institutions can bridge the gap between traditional banking services and unbanked populations, ultimately contributing to inclusive growth and economic prosperity. The findings highlight the potential of mobile banking to revolutionize financial services and promote inclusive financial ecosystems that benefit individuals, businesses, and economies at large.

5.2.3. Influence of Agency Banking on Financial Inclusion

The study on the "Influence of Agency Banking on Financial Inclusion" shows the significant role of agency banking in expanding financial access and inclusion, particularly in underserved communities. The literature review highlighted the positive impact of agency banking in providing convenient and accessible financial services through authorized agents, especially for populations that are marginalized or underserved. Singh and Bansal (2019) demonstrated how agency banking has broadened financial accessibility and usage, showcasing its potential to enhance financial inclusion and empower individuals to conduct financial transactions and access basic banking services.

The findings corroborated these assertions, revealing a strong influence of agency banking on financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County. The regression analysis indicated a statistically significant relationship between agency banking utilization and financial inclusion indicators, underscoring the pivotal role of agency banking in promoting financial access and empowerment within the SACCOs studied. SACCO members utilizing agency banking services experienced increased financial transactions, improved access to banking services, and enhanced financial literacy, leading to greater financial inclusion and economic participation.

The study's comprehensive analysis underscores the transformative impact of agency banking on financial inclusion, offering a pathway to greater financial access and empowerment for individuals and communities. By leveraging agency banking models, SACCOs and financial institutions can extend their reach to underserved populations, bridging the gap between traditional banking services and unbanked individuals. The findings highlight the crucial role of agency banking in fostering inclusive financial ecosystems and promoting financial empowerment for all members of society.

5.2.4. Influence of ATM Banking on Financial Inclusion

The study on the "Influence of ATM Banking on Financial Inclusion" exposes the pivotal role of ATM banking in expanding financial access and inclusion, particularly in underserved regions. The literature review highlighted the positive impact of ATM banking in providing convenient and accessible financial services, enabling individuals to conduct transactions, access cash, and manage their finances efficiently. Studies by Gupta and Bansal (2020) and Kar and Kar (2017) emphasized the significance of ATM banking in enhancing financial access for individuals in remote areas and promoting financial inclusion by bridging the gap between traditional banking services and unbanked populations.

The findings reinforced these assertions, revealing a substantial influence of ATM banking on financial inclusion among Savings and Credit Cooperative Societies in Homa-Bay County. The regression analysis indicated a significant relationship between ATM banking utilization and financial inclusion indicators, underscoring the crucial role of ATMs in promoting financial access and empowerment within the SACCOs studied. SACCO members utilizing ATM banking services experienced increased convenience in accessing cash, conducting transactions, and managing their finances, leading to improved financial inclusion and economic participation.

The comprehensive analysis of the study underscores the transformative impact of ATM banking on financial inclusion, offering a pathway to greater financial access and empowerment for individuals and communities. By leveraging ATM banking services, SACCOs and financial institutions can extend their reach to underserved populations, providing essential financial services and fostering economic growth. The findings highlight the critical role of ATM banking in promoting inclusive financial ecosystems and empowering individuals to participate actively in the formal financial sector, ultimately contributing to sustainable development and economic prosperity.

5.3. Research Contribution to SDG 8 and Vision 2030

5.3.1. Sustainable Development Goal 8: Decent Work and Economic Growth

The research on the influence of innovative banking on financial inclusion among Savings and Credit Cooperative Societies (SACCOs) in Homa-Bay County, Kenya, significantly contributes to Sustainable Development Goal 8 (SDG 8): Decent Work and Economic Growth. By exploring how innovative banking practices impact financial inclusion within SACCOs, the study directly aligns with the objectives of SDG 8. The research aims to enhance access to financial services, promote economic empowerment, and drive sustainable economic growth within the community by adopting technologies such as Internet banking, mobile banking, agency banking, and ATM banking. One key aspect of SDG 8 is promoting sustained, inclusive, and sustainable economic growth. Research on innovative banking in SACCOs fosters economic growth by expanding financial inclusion and providing opportunities for individuals to participate more actively in the formal financial system (Kyei, 2024). By leveraging technological advancements in banking services, SACCO members can access a wider range of financial products and services, leading to increased economic opportunities and overall growth within the community.

Moreover, the study contributes to SDG 8 by promoting full and productive employment and decent work. Through the adoption of innovative banking practices, SACCOs can streamline their operations, improve efficiency, and create new employment opportunities within the financial sector (Kyei, 2024). By enhancing financial inclusion and empowering individuals economically, the research supports the creation of decent work opportunities, thereby promoting sustainable economic growth and ensuring that individuals have access to meaningful employment opportunities. Furthermore, the research on innovative banking in SACCOs aligns with SDG 8's objective of promoting entrepreneurship and innovation. By exploring how technologies such as Internet banking and mobile banking influence financial inclusion, the study encourages innovation within the financial sector. It supports the growth of entrepreneurial activities within the community. This focus on innovation and entrepreneurship drives economic growth and fosters a culture of creativity and adaptability, essential for sustainable development and achieving SDG 8's targets.

5.3.2. Kenyan Vision 2030

The research contributes substantially to the Kenyan Vision 2030, the country's long-term development blueprint to transform Kenya into a newly industrializing, middle-income country providing a high quality of life to all its citizens. The study aligns with various pillars of Vision 2030, particularly in the economic sector, by enhancing financial inclusion and leveraging innovative banking technologies to drive economic growth and development within SACCOs and the broader community.

One of the key pillars of the Kenyan Vision 2030 is economic development, which aims to achieve sustained economic growth of at least 10% per year (Kibe, 2021). The research on innovative banking in SACCOs directly contributes to this pillar by exploring how technological advancements in banking services can enhance financial inclusion, promote economic empowerment, and drive sustainable economic growth within Homa-Bay County. The study supports the vision of a thriving and dynamic economy that benefits all Kenyan citizens by improving access to financial services and fostering economic opportunities through innovative banking practices.

Additionally, the research aligns with Vision 2030's goal of creating a globally competitive and innovative financial sector. By investigating the impact of Internet banking, mobile banking, agency banking, and ATM banking on financial inclusion within SACCOs, the study promotes innovation within the financial sector. It encourages the adoption of cutting-edge technologies to improve service delivery and efficiency (Kibe, 2021). This focus on innovation in banking not only enhances the competitiveness of the financial sector but also contributes to the overall goal of positioning Kenya as a regional financial hub and a leader in financial services innovation.

Furthermore, the research supports Vision 2030's objective of promoting social equity and poverty reduction by enhancing financial inclusion and economic empowerment within SACCOs. By empowering individuals economically through improved access to financial services, the study reduces poverty and promotes social inclusion within the community. This aligns with the vision of creating a just and cohesive society where all citizens have equal opportunities to participate in and benefit from the country's economic development.

5.4. Conclusion

In conclusion, the research has provided valuable insights into the impact of innovative banking practices on financial inclusion within the SACCO sector. The study aimed to assess respondents' perceptions of the role of innovative banking in achieving financial inclusion. Through data collection and analysis, it was evident that there is a positive perception among respondents towards innovative banking solutions such as internet banking, mobile banking, agency banking, and ATM banking. These technologies were seen as facilitators of financial access and inclusion, enabling SACCO members to engage more actively in financial transactions and services. Besides, the research sought to analyze the behaviours and opinions of individuals towards innovative banking solutions and financial inclusion. The findings revealed that individuals exhibited a willingness to implement innovative banking services, recognizing the convenience and efficiency they offer in managing financial transactions. This positive attitude towards innovative banking indicates a potential for further growth and adoption of these technologies to enhance financial inclusion in the SACCO sector.

The study's regression analysis and data interpretation demonstrated a statistically significant relationship between the use of innovative banking services and improved financial inclusion indicators within the SACCOs studied. This highlights the importance of leveraging innovative banking practices to enhance financial access and empower SACCO members economically. The study's findings emphasize the significance of innovative banking in driving financial inclusion within SACCOs in Homa-Bay County. The research provides a foundation for policymakers, financial institutions, and stakeholders to further explore and implement innovative banking solutions to enhance financial access and inclusion, ultimately contributing to economic development and empowerment within the SACCO sector and beyond.

5.5. Recommendations

It is recommended that SACCOs in Homa-Bay County leverage the potential of Internet banking to expand their reach and improve financial access for members. By investing in robust online banking platforms and promoting digital literacy among members, SACCOs can offer convenient and secure financial services, thereby increasing financial inclusion among diverse populations. Training programs and workshops on Internet banking usage should be organized to familiarize members with online financial transactions and promote trust in digital banking solutions.

Besides, mobile banking presents a significant opportunity for SACCOs to enhance financial inclusion, especially in remote areas where physical branches may be limited. It is recommended that SACCOs in Homa-Bay County collaborate with mobile network operators to develop user-friendly mobile banking applications tailored to the needs of their members. By offering mobile banking services that are accessible, affordable, and user-friendly, SACCOs can bridge the gap between traditional banking services and underserved communities, thereby promoting financial inclusion and empowering individuals to manage their finances effectively.

Furthermore, the study highlights the importance of agency banking in expanding financial access and promoting financial inclusion within SACCOs. SACCOs in Homa-Bay County are encouraged to establish strategic partnerships with agent banking providers to offer a wide range of financial services through agent outlets. By increasing the availability of agency banking services in rural and underserved areas, SACCOs can reach a broader customer base and facilitate financial transactions for members who may not have easy access to traditional banking services.

Lastly, the study recommends that SACCOs in Homa-Bay County invest in ATM banking infrastructure to improve financial access and convenience for members. By deploying ATMs in strategic locations and ensuring their functionality and security, SACCOs can provide members with 24/7 access to cash and essential banking services. Training programs on ATM usage and security protocols should be conducted to educate members on safe and efficient ATM transactions, thereby promoting financial inclusion and empowering individuals to manage their finances independently.

In conclusion, by implementing these recommendations and embracing innovative banking practices, SACCOs in Homa-Bay County, government and policymakers can enhance financial inclusion, promote economic empowerment, and contribute to the overall development of the region. Collaboration with stakeholders, continuous monitoring of technological advancements and a focus on customer education and engagement are essential for the successful integration of innovative banking solutions and the advancement of financial inclusion within the SACCO sector.

5.6. Suggestions for Future Research

A comparative analysis of innovative banking practices and financial inclusion outcomes across different counties or regions in Kenya could offer a broader perspective on the factors influencing financial inclusion within the SACCO sector. By comparing the implementation and effectiveness of innovative banking solutions in diverse contexts, researchers can identify best practices and strategies for promoting financial inclusion on a larger scale.

Besides, complementing the quantitative data collected in the current study with qualitative research methods such as interviews, focus groups, or case studies could provide a deeper understanding of the perceptions, experiences, and challenges faced by SACCO members regarding innovative banking. Qualitative research can uncover nuanced insights into the behavioural aspects and motivations driving the adoption of digital financial services among SACCO members.

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