

# Nexus Between Process Financial Innovations and Financial Performance of Deposit Taking Savings and Credit Cooperative Societies in Nairobi City County, Kenya

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## ABSTRACT

This study sought to establish a connection between financial innovations and the financial success of Savings and Credit Cooperatives Societies taking into consideration the innovations that have been brought on board, their application and how they have impacted the financial performance of the SACCOS before the pandemic, during and post pandemic. Panel data methodology was employed. The study's population consisted of all forty-five (45) registered Deposit taking Savings and Credit Cooperatives Societies (DT-SACCOS) registered under the cooperative societies act in Nairobi City County as per the Sacco Societies Regulatory Authority (SASSRA) list of deposit taking SACCOS with their registered offices in Nairobi. Secondary data was used. According to the study results, process innovation is positively correlated, with positive coefficients from Return on Assets (ROA). The study focused on a five-year period from 2018 to 2022. The study recommended the use internet banking, agency banking and that SACCOS should embrace more innovative strategies and come up with more user-friendly products, SACCOS need to stay current with emerging financial market developments. These include things like the use of automatic teller machines (ATMs) and other technologically advanced goods. The management of these SACCOS should consider acquisition of new software to fully automate their processes as a means of enhancing financial performance. This would stop customers from being discouraged due to long lines, tellers who are unaware of the products being offered, and drawn-out waiting times and application processes. SACCOS should adopt financial innovation strategies to boost overall productivity, profitability, and market share while also maximizing firm-specific advantages. SACCO management should embrace research and development. The regulator and advisory body (SASRA) should create effective regulation and monitoring systems to make sure that various DTS implement financial innovation techniques that are tailored to their firm characteristics to increase their efficiency and performance.

**Key words:** SACCOS, financial innovations, financial performance, DT-SACCOS.

## INTRODUCTION

### Financial innovations

Financial innovations, according to Cherotich, K. M., Sang, W., Mutungú, C., & Shisia, A. (2015), include the creation of new financial services with novel procedures, new financial products, or new methods of delivering financial services that currently exist. Financial innovations can therefore take a variety of forms. According to Noyer (2007), financial innovation refers to the methods used to introduce new goods to the market. From all of these definitions, it is clear that new activities must be undertaken in order for financial innovation to emerge. Financial innovations can also arise from the SACCO industry's adoption of new technologies in a variety of ways, such as the creation of completely new financial products or new goods (Noyer, 2007). Financial innovation can take many forms on a global scale, from new products like floating rate mortgages to new delivery methods like online banking (Noyer, 2007).

Nekesa & Olweny (2018) evaluated how financial innovation affected deposit-taking SACCOS' financial performance using a case study of such organizations in Kenya. The study found that organizational, process, and product innovations are significant types of financial innovations that influence the current financial

performance of financial institutions. In 2015, Cherotich, Sang, Shisia, and Mutung'u conducted research on financial innovation and its impact on the performance of financial institutions in Kenya. Thus, all 43 of Kenya's commercial banks were included in the census. The research findings indicate a robust and noteworthy correlation between financial innovation and performance.

The performance of deposit-taking SACCOs was examined in a study by Ouma, Omagwa, and Ngaba (2018). The research revealed that the creation of novel goods and services had an impact on financial institutions' operational efficiency. In a related study, Ngumi (2014) investigated the impact of financial innovations on lending institutions' performance. Financial advances such as automated teller machines, internet banking, mobile banking, and electronic financial transfers were put into practice. The study found a strong correlation between success and financial innovations.

Some studies divide the category of items into other subgroups using criteria such as the sorts of products, their uses, or other features (Anderloni et al, 2009). Using the functional approach, financial innovations can also be categorized according to how much they aid in the smooth running of the financial system or according to their purpose (Tufano, 2003). Reducing transaction costs, improving credit creation and availability, generating equity, providing insurance services, managing assets and liabilities, and supporting financial institutions are some of the criteria employed. The third system, which is based on motivations, divides financial innovations into four main categories: (i) defensive, as a response to policy and regulation; (ii) aggressive, the development of new products that financial institutions believe can be successfully promoted and sold; (iii) responsive, when a financial institution develops a new instrument or service to meet a clients' portfolios; and (iv) protective, when portfolios are protected. Financial innovations are the focus of the taxonomy of innovations employed in this study (Oke, 2007).

## **Financial Performance**

How well a company uses its limited resources to generate income is measured by its financial performance (Richard et al., 2009). As a result, it is easy to see how a certain method led to financial performance. A company's financial success is determined by how well it uses its resources to create revenue from its main business, claims Pandey (2010). Consequently, the likelihood that a company will turn a profit with its current assets serves as the yardstick for evaluating its financial success.

The return on assets (ROA), which compares SACCO's profits to all of its assets, can be used to judge the organization's profitability. Profits before and after taxes are shown in the income statements of commercial banks. The ratio of profits to equity (ROE), as opposed to total assets, is another good indicator of SACCO performance since institutions with greater equity ratios should also have better return on assets (Ceylan, Emre, and Asl, 2008). A bank's performance is measured by its ability to generate sustainable profitability, according to the European Central Bank (2004). Since it ensures more resilient solvency ratios, especially in the setting of a risky business climate, this competence is crucial for banks to retain continued business and for its investors to obtain fair returns. As a result, it follows that a financial institution's financial performance must be a constant across time.

The practice of evaluating an organization's success in terms of money is known as financial performance, and it relates to the extent to which an organization's financial goals have been attained. This demonstrates how the general financial health of a company is assessed over a certain time period and may be used to compare it to the general financial health of other companies in the same industry. The effectiveness of commercial banks is determined by how successfully they manage the deposits made by the general public and the loans they borrow to achieve their goals, which include profit maximization. To do this, interest rates must be adjusted so that they can borrow money at cheaper rates and lend it out at higher rates while still remaining within acceptable limits. Different performance indicators for banks were identified by Combs et al. Along with valuation ratios and solvency ratios, such as the current ratio, profitability indicators, such as the operating income to sales ratio, are also employed.

## Savings and credit Cooperative Societies

SACCOS are voluntary organizations where participants regularly use their savings and obtain loans at predetermined interest rates that they utilize for other purposes. The idea behind the SACCOS is to promote a savings culture among the members while giving credit to members (Bwana & Mwakujonga, 2013). SACCOS are also created when members voluntarily get together to establish jointly and democratically held associations to fulfill their shared cultural, social, and economic ambitions. SACCOS are crucial form of financial intermediary both in Kenya and in all parts of the world (Ngure, 2017). Cooperative societies have intrinsic values and principles that govern their operations. Examples of such values include equality, equity, self-help, democracy, self-responsibility, and solidarity. In the contemporary world, SACCOS have been responding to the competitive and dynamic financial environment (Kibugo, 2017). Kenya being a developing country, SACCOS must respond to the dynamic financial environment with an aim of promoting a savings culture and in turn improve living standards and eradicate poverty levels.

SACCOS operating in Kenya are governed by the Ministry of Industry, Trade, and Cooperatives. Recent research demonstrates that SACCOS have significantly increased in Kenya. One in every two Kenyans is either directly or indirectly dependent on SACCOS, according to (Bwana and Mwakujonga, 2013) study. SACCOS contribute roughly 45% of the country's GDP. In order to promote the achievement of the national social-economic goals, the ministry is charged with directing the development of the cooperative sector through the design of policies and legislative framework, according to the SASSRA monitoring report (2020). Effective legal procedures and regulations would directly or indirectly improve Kenyans' quality of life (Amabel, 2014). Section 22 of the SACCO Societies Act No. 14 of 2008 specifies that the Sacco Societies Regulatory Authority (SASSRA) is responsible for overseeing SACCOS.

The authority is responsible for projecting the demands of the SACCO members and bringing sanity and confidence to the industry. It falls under the larger government of Kenya reforms program. All the SACCOS in Kenya must conform to the regulations set by the authority. Among the regulations given as per the SASRA Society Act No. 14 of 2008 is that the management is required to submit the reports for the statement of financial position, the liquidity statement, the statement of deposit return, and the capital adequacy return. The current SACCOS must operate under the same guidelines because of the regulations. A well-functioning SACCO increases members' access to inexpensive credit and mobilizes savings in the form of share contributions, both of which contribute to economic growth (Ademba, 2010). Ngure (2017) estimates that Ksh. 490 billion, or 35% of the national budget, is under the jurisdiction of SACCOS in the form of savings and assets. The SASSRA supervisory report (2020) states that there were 5.47 million memberships in all deposit taking saccos (DT-SACCO). This is an increase from the 4.9 million people who were reported in 2019 with 175 registered DT-SACCOS, whose total assets by the end of 2020 were 627.68 billion.

Kenya's capital, Nairobi, also acts as the main administrative center of the nation. It serves as the seat of the executive, national legislature, and senate of the country as well as the assembly of the county government, diplomatic missions, institutions from across the world, and other local, regional, and worldwide leaders in a variety of fields of endeavor. In Kenya, there are 175 registered DT-SACCOS as of 2022, of which 45 are located Nairobi City County, according to the SACCO oversight annual report.

## Problem Statement

Innovation drives technological progress through research and development, the production of new products and services, and the enhancement of customer services. Financial innovations are embraced by SACCOs as a strategy for outpacing their competitors. The innovations are also thought to be essential for surviving in the volatile and dynamic sector to achieve their goals, maintain success, and enhance their performance in a corporate environment that is competitive. Therefore, the SACCOs must adopt new, innovative financing strategies rather than solely relying on member deposits to fund their operations (Maorwe, 2011). They must also employ innovative techniques to establish best practices that guarantee sustainability and expansion to attain competency at all operational levels (Mutuku, 2014).

Despite these innovations, SACCOs have been running their businesses in Kenya at a decreasing profit (SASRA, 2022). For instance, the Saccos' deposits increased by Kshs 18 billion in the 2020–2021 fiscal year, from Kshs 105 billion to Kshs 123 billion in 2020 and 2021, respectively. However, a concerning tendency was also indicated at the same time as the profitability fell by 33%, from 49% to 16%. The average use of innovations pertaining to their procedures has been blamed for a portion of the deteriorating profitability. Consequently, there has been a mismatch between the Saccos' offerings and what customers desire. Customers have been compelled to switch to commercial banks as a result of this disparity because they provide similar goods and services at higher levels of innovation while also engaging in heated rivalry.

Nevertheless, despite the innovations, the industry has faced rivalry from other financial institutions, including commercial banks and microfinance companies (Mutuku, 2014). This is due to research showing that supporting those who are not banked significantly reduces poverty (Manyika & Voorhies, 2016). Financial inclusion strategies have been the subject of numerous global research. In Rwanda, for example, Harelimana (2016) studied the degree of financial inclusion and its impact on the financial performance of SACCOs during a five-year period from 2011 to 2014. Closer to home, Muema (2013) investigated the impact of financial inclusion measures on Kenyan commercial banks' financial operations. According to a survey by (Kiragu, 2015), the number of members in Kenya using SACCOs for financial services has decreased from 13.5% in 2009 to 9.1% in 2013. Customers using commercial banks rose from 13.5% to 29.2% over the same time frame (Kiragu, 2015). Despite the significant importance of SACCOs to both the financial system and the public it is not clear whether financial innovations have a significant impact on SACCOs' financial success.

The SACCO sector in Kenya has not been thoroughly researched in terms of the relationship between financial innovation and financial performance. The emergence of the Covid 19 pandemic forced a rise in the usage and adoption of several financial innovative strategies within the financial sector with an aim of having business continuity during the pandemic that caused movement limitations. There have been a few studies done during the pandemic to determine how these developments affect SACCOs' financial performance, but they are few.

Although taking into account the innovations that have been adopted, their application, and how they have impacted the financial performance of the SACCOS before the pandemic, during the pandemic, and after the pandemic, this study attempted to establish a link between financial innovations and the financial success of SACCOs. It is crucial to determine the connection between DT-SACCO financial innovation and performance in Nairobi City County. In order to ascertain how financial innovations and SACCO financial performance relate to one another in Nairobi City County, this study examined this relationship.

## **Research Questions and objective**

### **Specific Objectives**

To estimate the relationship between process innovation and Nairobi City County's deposit taking SACCOs financial performance.

### **Research Questions**

What effect does process innovation have on financial performance of deposit taking SACCOs in Nairobi City County?

### **Research Justification**

The research finding will be significant to the Kenyan government will be able to understand the challenges that SACCOS are facing in implementing these innovations and how the same innovations are contributing to the development of the sector.

Past research will be approved or disproved and thereby assist researchers in carrying out further studies with the intention of understanding the problems that will be established through this study.

The SACCO stakeholders will also be able to understand the issues that hinder innovation and implementation of modern products in the sector.

## Scope of the study

The study concentrated on financial innovations in Nairobi City County DT-SACCOs. Secondary data was gathered from SASSRA headquarters in Nairobi and from SACCO's public financial statements that have been uploaded to their websites. The study was carried out in 45 DT-SACCOS registered by SASSRA and operating within Nairobi City County. The research was carried out between 1<sup>st</sup> January 2023 and 30<sup>th</sup> November 2023.

## LITERATURE REVIEW

### Theoretical review

#### The Diffusion of Innovation Theory

The idea of diffusion of information (DOI), which Rodgers popularized in 1962, served as the basis for this study. According to this theory, institutions that want to flourish must be open to trying new things. According to this view, improvements to present operating procedures, a consistent approach to performance, the ability to test a product beforehand, and the simplicity of spotting flaws are the five main characteristics of innovations (Frame & Scott, 2001). Institutions have the ability to increase their competitive edge and reduce operational expenses, according to (Hirtle, 2005). Institutions would also have little trouble breaking into new markets and finding new ways to serve their clients. According to (Gardachew, 2010), despite the advantages of innovation, there are drawbacks as well, including the need for radical replacements because of intermittent and erratic technology developments, exposure to security concerns, management and consumer opposition, and difficult approaches to current conditions.

The theory shows how an idea, or a process gathers steam through time, grows into something significant, and permeates the entire system. The outcome is the adoption of a novel good, habit, or notion (LaMorte, 2019). The author opines that adoption means doing something in a different way from what was previously done. He concludes by mentioning that the key to adoption and acceptance is perception among people and stakeholders of the novelty, modernity, or innovation of the concept, behavior, or product.

According to Gardachew (2010), the spread of an innovation is transmitted through social system members' channels of communication. The innovation-decision process outlines the steps a person can take as they consider adopting a new innovation: after learning more about it, the person generates an opinion about it and chooses whether or not to do so. The person then starts utilizing the invention, and through practice and learning, progressively minimizes the uncertainty that is still present. After the innovation has been adopted, the person keeps checking to see if adoption still makes sense for her.

The number of innovation features was raised to seven by Moore and Benbasat (1991), building on the work of Roger (2003), Tornatsky and Klein (1982), Brancheau and Wetherbe (1990), and others. Three of the seven innovation traits directly mention Rogers: relative advantage, compatibility, and trialability. Rogers complexity is strongly tied to the fourth quality, usability. It's important to keep in mind that relative advantage and simplicity of use are both subjective qualities because everyone views them differently. Fishbein and Ajzen (1980) assert that attitudes about an object and attitudes toward a particular behavior involving that object might frequently differ. Moore and Benbasat (1991) additionally came up with three other features. In contrast to Moore and Benbasat (1991), who found that image was a standalone predictor of adoption, Rogers (1983) included it as an intrinsic element of relative advantage. Image is the self-confidence that accepting a novel idea will advance one's social standing.

Five main adopter categories guide the theory, and these include laggards, early adopters, innovators, early majority, and innovators. Research has shown that early late adopters of an innovation are people with diverse characteristics as compared to those who adopt the ideas early in time (LaMorte, 2019). The awareness about the need to innovate, individual decision innovation adoption or rejection decision, innovation testing method at the initial stages and the continuous use of the innovated product are the key stages involved in the adoption. (Rogers 1995) identified five innovation attributes which determine the adoption of innovations that have been extensively applied by several researchers to illustrate the adoption and diffusion of ICT innovations. With the

knowledge that participation in such initiatives typically necessitates the introduction of new technologies and new ways of thinking and acting. Through the lens of the diffusion of innovations theory, it is feasible to ascertain the effects of new financial innovations on the performance of deposit-taking SACCOs in Nairobi City County.

Examining Rogers' (2003) diffusion of innovation theory using the Dubin framework (Lundblad and Jennifer, 2003) reveals certain flaws in the theory. Although teams or departments inside corporations can also serve as social systems, organizations are frequently thought of as social systems. However, the issues and team members within a larger organizational environment are not discussed in terms of how these limitations impact the adoption of innovation. Organizational borders are not taken into consideration when innovation diffuses between organizations, such as between schools in a school district or hospitals and clinics within a health care delivery system (Lundblad and Jennifer, 2003). The only system state specified by the theory for the dissemination of innovation in companies is the type of innovation-decision-making process in place, which is classified as optional, collective, authority, and contingent. According to (Lundblad and Jennifer, 2003), Rogers' theory does not specify whether an organization's system states must be in their typical operational mode for the theory to be applicable. It also does not specify if the theory applies to all sorts of organizations or just some of them.

With regards to innovation in SACCOs, this theory cannot be overlooked. Beaver (2002) finds innovation as a critical issue in the development of any economy, and it is so relevant in enhancing the competitiveness of firms. SACCOs should aim at adapting and using the innovations in place as opposed to the traditional methods of operation. The idea of embracing a new innovation is crucial to SACCOs. The following are the main criteria that determine an innovation's level of adoption: its compatibility, relative advantage, triability, observability and complexity. The promotion of financial innovation depends heavily on the spread of "collective acceptance" where financial products are deemed to have value not because of their benefit but because of the collective acceptability as a value representative (Nightngale & spears, 2010). On top of that, it guarantees corporate social benefits due to the advances developed by (Frame and White, 2004). Diffusion is advantageous for financial inventions, and the spread and diffusion of liquidity are determined by the number of institutions that embrace an idea in (Merton,1995a)

### **Disruptive Innovation Theory**

This theory as propagated by (Christensen,1997) states that the leaders in a market are displaced by new entrants when the new entrants introduce a disruptive innovation the market leaders are not able or willing to respond to. This theory predicts that the market leaders are displaced from the industry and the new entrants take over the industry. According to the (Oslo Manual of the OECD,2005), disruptive innovation is an innovation that has a significant influence on an industry and the business operations of companies within that industry. The banking industry in Kenya felt the significant effects of disruptive innovation from the telecommunications firms that offers mobile money transfer.

The theory is important in this study considering that there have been many innovations that have been brought up by other financial services players. These include the emergence of digital lenders, innovative savings products by telecommunications firms. SACCOs must innovate to keep up the pace and avoid being thrown out by the emerging players in the sector.

### **Transaction Cost Innovation Theory**

According to this theory, the primary driving force behind financial innovations is the reduction of financial or transaction costs; these innovations are the responses to technological advancement that has caused transaction costs to go down. The need for reduction in transaction costs can trigger financial innovations that result in the improvement of financial services. The theory was developed by Williamson (1979, 1986) and views financial innovation with a view of optimization and creation of efficiency in service delivery by minimizing exchange costs It demonstrates that the intention of innovations is to cut on operating costs. The theory goes ahead to postulate that the main aim of innovation is to cut operating costs to the bare minimum (Hickins, 1983). It is every business objective to minimize costs and maximize profits or returns (Hickins, 1983)

When financial innovations must utilise other platforms to successfully carry out their mandate, transaction costs will result. When conducting banking operations, branchless centers that operate as agents for the principal bank must be established. This entails transaction fees. The theory explains when the business should design newer operations to be inside firm borders and how institutions may be able to profit from resource sharing among businesses operating inside firm borders. By enabling companies to increase market share by utilizing innovations that will provide them a competitive advantage in the marketplace, it is a theoretical framework that highlights the value of expenses. A corporation should diversify from the perspective of transaction costs when it increases its market share and manages its extra operations more efficiently than the current market or its competing companies (Aguilera & Jackson, 2010).

Numerous academicians have voiced numerous criticisms of the TCE strategy. TCE assumptions were deemed to be unduly substantial by Moran and Goshal (1996), who also claimed that the theory's applicability might be restricted by employing faulty data. Another argument against opportunity is that it portrays an unnecessarily dismal view of human stimuli. Moran and Goshal (1996) went on to say that the strategy used to avoid expediency by close watching and power exercise of control causes a drop in employee performance and, as a result, it has the opposite effect from that desired. Numerous academicians have voiced numerous criticisms of the TCE strategy.

Here, the transaction costs innovation theory is relevant. By making it easier to organize, coordinate, and use information effectively, internet-connected information technology (IT) adoption, for instance, can considerably reduce a firm's transaction costs. Mobile, Internet-connected IT may further minimize transaction costs because it enables off-site access to the company's internal database and other important information sources. As a result, the decline in operating expenses brought on by agency banking, internet banking, and mobile banking may have an impact on SACCO's rise in profitability. The theory analyzes financial innovation considering slight modifications to the economic system. Utilizing mobile and internet connections may save transaction costs since it offers an option to off-site access to the organization's internal database and other information sources. The shortcoming of this hypothesis is that it only considers an individual's cost-cutting while holding the other variables constant.

This study cannot overlook the Transaction costs innovation theory as it marries well with the objectives which are all geared towards financial performance because of financial innovations. A notable example is the application of information technology to significantly reduce a company's transaction costs, which results in increased productivity and information-based management. This theory was therefore very crucial to the study because it enabled the researchers to explain the impact of financial innovations on the Saccos' financial performance because of transaction cost-cutting initiatives.

## **EMPIRICAL REVIEW**

### **Process innovation and financial results**

Process improvements are centered on enhancing the distribution and service aspects of financial institutions. They show the adoption of new and more improved methods of service delivery or production as opined by Exposito and Sanchis-Llopis (2019) by an organization which encompasses several modifications in their tools, technology, machines and even equipment, OECD (2005), Obeng & Boachie (2018). It entails the small continual improvements originating from staff and not necessarily from management. In illustrating what innovation of processes constitutes, the European union (2013) stated that there should be significance in the effects of the process innovations made and that the cost of production should go down because of the innovation.

Also, the Canadian Centre for the Study of Co-ops [CCSC] (2021) reported on the factors that contributed to the expansion of credit unions in Canada and the ensuing policy implications. As to the survey, most credit unions have become proficient in implementing creative processes such that there is more than one option to handle each transactional demand using technology. As a result of the increased income, there was an improvement in financial capital and asset base. However, as most credit unions only funded training when absolutely required, there was a concern over the staff's need for periodic training.

In addition, a study by Chepkorir et al. (2022) examined the impact of the mobile banking procedure on the financial performance of Saccos in Kericho County. Data from 108 Sacco managers were gathered for the study using a correlational design. In addition to analysing the Sacco reports, questionnaires were sent to the managers. A noteworthy finding by Chepkorir et al. (2022) was the correlation between mobile banking and the Sacco's success. It is noteworthy that there were instances when network outages interfered with mobile banking operations, forcing customers to look for other sources. This indicated that there was a lapse in Saccos's effort to ensure seamless transactions through system assessment. Despite this, Chepkorir et al. (2022) did not evaluate additional process innovations resulting from ATM, internet banking, or check clearing.

Therefore, advancements in technology, such as computerization, establish the groundwork for more effective information in data management and accounting, which in turn leads to process improvements at the financial level. The effect of mobile banking on the financial performance of Pakistani banks was investigated by Fatima and Kiran (2011) between the years of 2006 and 2010, and they found a considerable improvement. A similar study was carried out by Sumra et al. (2011) to ascertain the influence of e-banking on the profit margins of Pakistani banks. The study's findings indicated that e-banking services had a significant impact on banks' financial performance and may raise profits fast and inexpensively.

While product innovation had no such relationship, Ndwiga and Maina (2018) found that process innovation did have a strong and favorable relationship with financial performance. They used the constraint-induced financial innovation theory and the transaction cost innovation theory as the foundation for their investigation of the relationship between financial innovation and the financial performance of Kenya's listed commercial banks. There was a cross-sectional survey research design. A questionnaire was distributed to the eleven financial managers that participated in the study. A data sheet from the yearly reports of 2009 to 2016 was also used to gather secondary data. Multiple linear regression, a descriptive and inferential statistical technique, was used to analyze the post-global financial crisis data.

It was discovered that commercial banks innovated their operations and services, albeit not entirely. While process innovation was focused on the use of agency, internet, and mobile banking, product innovation included new debit and credit cards, loan accounts, and savings accounts. Only process costing had a significant positive nexus, according to the study's findings. More process innovation would lower operating costs, according to the recommendations, and wasteful products should be discontinued to make banks financially sustainable. While there are additional forms of innovation, the study only considered two categories of financial innovation.

Banks that offer online banking services to expand their reach tend to have a better and improved performance, Kagan, Acharya, Rao and Kodepaka (2010). In this study, the results indicated and established that online banking enables community banks to have a better chance of earnings as measured by their returns and improved assets in terms of quality while reducing the proportion of overdue assets and those not performing well. The findings agree with a study by Noyer (2017), who concluded that service innovations have just opened new opportunities for the players in the sector financial sector but also increases market players arising from the products in the industry on the influence of service innovation together with its influence the financial Kenyan commercial Banks financial performance. The study was a census by design whereby every manager in the head office was interviewed for the study. The study further established that enlarged developments have enabled the series of investment and financing opportunities that are available to the economic agencies.

However, due to internet unreliability and security risks, it initially ran against resistance (Mwangi, 2013). Commercial banks and microfinance institutions have adopted information technology more quickly as a result of its development. To enable speedy tuition payments, commercial banks recently joined their banking systems with clients like schools. Internet banking has led to more specialized and tailored service delivery among commercial banks, claims Ngumi (2014). Although primary data has been the predominate source of information, empirical evidence has shown that commercial banks have benefited. In the study, the value of online transactions was taken into account to evaluate its impact on financial deepening (Sathye, 2015; Cheruiyot, 2010; Chipeta & Muthinja, 2018).

Performance, branch network, ICT spending, the number of clients that utilize mobile banking, and the number of ATMs a SACCO has built all have a strong association with one other, Njeri (2013). The study examined how deposit-taking SACCO performance in Nairobi City County was affected by financial innovations.

The value of online transactions was considered in the current study to evaluate its impact on financial deepening (Sathye, 2015; Cheruiyot, 2010; Chipeta & Muthinja, 2018). Agency banking has made it possible to provide banking services to the unbanked population, according to empirical evidence (Joshua, 2011). According to FSD (2013), Vision 2030, which aims for the inclusion of all bankable non-banked population, is aligned with innovative financial system service supply. According to Cracknell (2012), agency banking makes a substantial contribution to the products and services provided by the commercial banking sector and eventually should help the economy flourish. According to Cracknell (2012), agency banking makes a substantial contribution to the services provided by the commercial banking sector and will eventually aid in economic growth.

The study found that SACCOs made significant advancements in service delivery, product automation, and technical development between 2008 and 2012, enhancing the financial returns. Innovations ease, guarantee security and efficiency to customers thus improving the demand for the innovated products and reducing the demand for the traditional systems, Nyathira (2012). The study's aim was to find out if financial innovations had an impact on the performance of specific Kenyan commercial banks. The author set out to demonstrate how financial innovations, particularly those that altered payment systems, impacted the performance of commercial banks. Gitau (2011) opined that banks have adopted process, product, and organizational innovations. Unsecured loans, business clubs and credit cards are among the product innovations that have been adopted by banks. Credit reference bureau listing, Islamic banking and 20 insurance services are the adopted institutional innovations while mobile transacting or banking, online banking and RTGS were the process innovations adopted. The study concluded that these innovations translated to strong financial returns among the commercial banks. The study used a quasi-experimental research methodology that included multiple linear regressions, descriptive statistics, and qualitative methodologies to examine the data.

Ndwiga and Maina (2018) found that process improvements rather than product innovations have a positive effect on financial performance. This was in a study on the impact of financial innovation adoption among public listed commercial banks in Kenya and was based on two theories namely: transaction cost innovations theory and the constraint induced financial innovation theory. It was determined that the only factor that significantly improved returns was process costing. This study relied on only two types of financial innovations when there exist several types. Therefore, there is need for this study to incorporate the other types of financial innovations to conclusively conclude and recommend as well. The contribution of process innovation in the introduction of various processes enables SACCOs to be in a strategic position to benefit from the adopted innovations and translate to a better financial performance.

## Research Gaps

Previous studies on the effect of financial innovations have produced contradictory and unclear findings; the majority of these studies were carried out in other countries with different legal and regulatory frameworks. Moreover, local markets are unable to embrace global viewpoints without first doing empirical research.

The empirical study of relevant literature has shown that there aren't many studies that specifically look at the connection between SACCO financial innovations and the financial performance of SACCOs in Nairobi City County. According to Mwangi (2013), several research showed a correlation between financial innovations and the overall performance of financial institutions. The study therefore projected an idealized picture of how SACCOs with process financial innovations would likely function and become more profitable. On the other hand, research by Nader (2011) and Scholnick (2006) revealed a negative correlation between financial innovations and SACCO performance.

It's intriguing to observe that several studies produced disparate findings. It is therefore necessary to conduct research to determine which research findings—about the effects of financial innovations and the operation of SACCOs in Nairobi County—are compatible with the situation in Nairobi. For instance, it could be noted that financial innovations negatively affect the financial performance of SACCOs, Nader (2006). However, are these

results conclusive? The study's premise was formulated negatively and claims that EFT, online banking, and mobile banking have no discernible effect on the financial performance of SACCOs in Nairobi County.

Moreover, the review of the literature showed that very few financial developments have been considered. The volume of research and studies carried out in Kenya has not been very impressive. This is the reasoning for the inquiry. Finding out how financial advances impacted SACCO performance was the aim of this research. This study also examined the effects of financial innovations on the financial performance of DT-SACCOs.

### Conceptual Framework

The evolution of interactions between study variables can be thought of as a conceptual framework (Kombo & Tromp, 2009). The main independent factors that are believed to affect Kenyan SACCO performance are innovation in product, process and Institutional. The financial success of SACCOs serves as the study's dependent variable. The figure below shows how the dependent and independent variables relate. The various types of innovation (independent variable) relate with financial performance (dependent Variable).

#### Independent Variables Dependent Variable

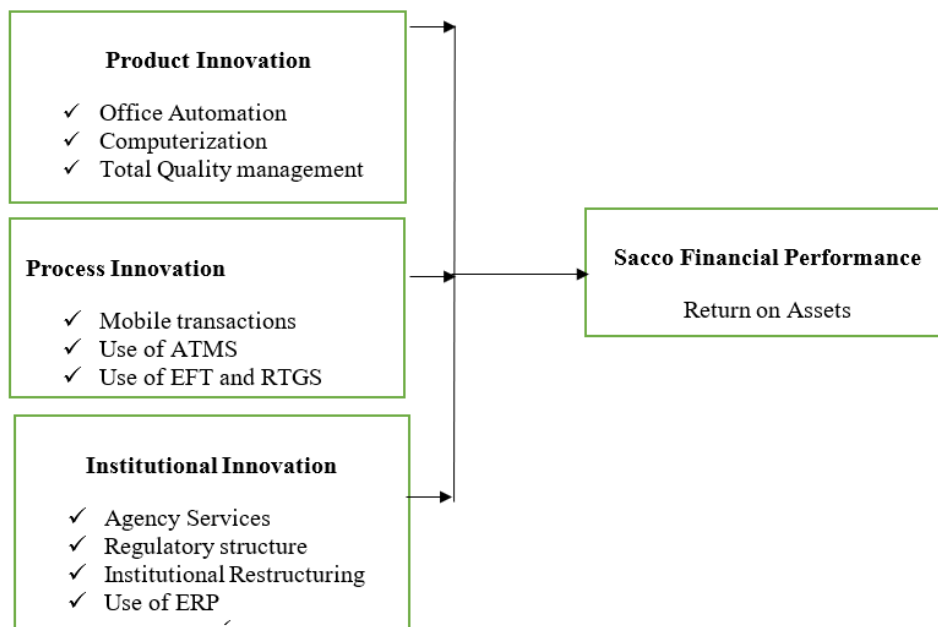


Figure 0.1 Conceptual Framework

## METHODOLOGY

### Research Design

A descriptive study is structured with the express purpose of discovering the relationships between various variables. The objective of this study, which is to ascertain the relationship between financial innovation and the financial performance of DT-SACCOs in Nairobi, is descriptive in nature.

The impact of financial innovation on financial performance measures was forecast using panel data methods. Panel data, which blend cross-sectional and time-series data, have a number of advantages over these types of data but also present a number of issues. One of the main drawbacks of using panel data is how challenging it is to compile values from different units for the same variable and time. The benefits of panel data analysis, according to Cerna (2008), include “it reduces the multi-co-linearity phenomenon of the variables, increases the number of the freedom levels and, implicitly, the power of tests, therefore the trust level in the obtained outcomes, permits the construction and testing of certain behavioral templates more complex than the templates based on the analysis of the time serials or cross section structures, and permits a better analysis of the dynamics of the structural adjustments”.

Panel data models can be divided into two primary categories: dynamic models, which contain previous values of the variables, and static models, which do not include past values of the variables. Several linear models, including pooled OLS, fixed-effects, and random-effects models will be used in the study's static panel data model (Tatoglu, 2013).

### **Data Sources**

Secondary data was acquired from SASSRA's annual banking reports, and in cases where information was lacking, the corresponding SACCOs' annual statements were used as the data source. In the study, secondary data were employed. The primary source for secondary data is the annual supervisory reports by SASSRA. The use of data collecting was consistent with earlier research like those by Githira and Nasieku (2015), Ndili and Muturi (2015), and Tarus and Omandi (2013), which used a similar methodology to combine secondary data for their study.

### **Data Collection**

Secondary data was collected from SASSRA's annual banking reports, and in cases where information was lacking, the corresponding SACCOs' annual statements were used as the data source. The primary source for secondary data is the annual supervisory reports by SASSRA.

### **Ethical Consideration**

Ethical practices were observed during the study. To be eligible to apply for a research permission from the National Council for Science Technology and Innovations (NACOSTI), the researchers needed a letter of authorization for data collection from the graduate school at KCAU

### **Conflict of interest**

The research had no conflict of interest. This enabled the researchers to be objective.

## **RESULTS AND DISCUSSIONS**

### **Kenya's Deposit taking Savings and Credit Cooperatives Performance**

Performance of Kenya's Deposit taking Savings and Credit Cooperatives Performance grew progressively between the years 2018 and 2022(SASSRA,2022). According to SACCO Supervision Annual Report, 2022, the DT-SACCOs made a solid growth. When comparing the end of 2021 to the end of 2022, the total assets of DT SACCOs increased by 9.8%, from KSh 807.1 billion to KSh 886.2 billion. By the end of 2022, capital reserves, loans and advances, and deposits were KSh 617.0 billion, KSh 677.8 billion, and KSh 174.7 billion, respectively, an increase of 9.2, 11.3, and 276.6%, respectively. Loan, investment, and other operating income all increased from KSh 93.5 billion, KSh 8.1 billion, and KSh 6.7 billion in 2021 to KSh 102.2 billion, KSh 9.6 billion, and KSh 7.5 billion as of the end of 2022, respectively, by 9.3, 18.5 percent, and 11.9%. On the other hand, as of the end of 2022, interest costs on deposits and other liabilities decreased to KSh 24.2 billion and KSh 74.5 billion, respectively (SACCO Supervision annual Report, 2022).

According to the descriptive statistics, ROA ranged between 22.94% at its highest point in 2022 to 0% at its lowest, with a mean of 12.71% over the years. The range shows that Return on Assets has risen over the period of study. The standard deviation of 3.6 shows variability in ROA, indicating a wide range in DT SACCOs performance across the years under study. This finding suggests that DT SACCOs performance was inconsistent over the study period and had a low Return on Assets. The low performance from DT SACCOs is shown by a ROA mean value of 12.71%. It is significant to remember that ROA assesses how effectively assets are being used by financial organizations to produce income and hence the higher the value the more effective the use of assets is.

The study also conducted a normality test to determine whether the sampled data has a normal distribution or not. Normality test is a prerequisite for statistical tests and may be conducted using analytical or graphical

methods. Further, normal distribution of data is an important assumption for correctly performing regression analysis. This implies that regression analysis is only possible with normally distributed data. Non-normally distributed data can result in erroneous findings. This may represent statistically significant findings as non-significant or non-significant findings as statistically significant, leading to erroneous conclusion of the subject study. Therefore, the study applied the graphical method to assess the normality of the data and the findings presented in Figure 2.0 below.

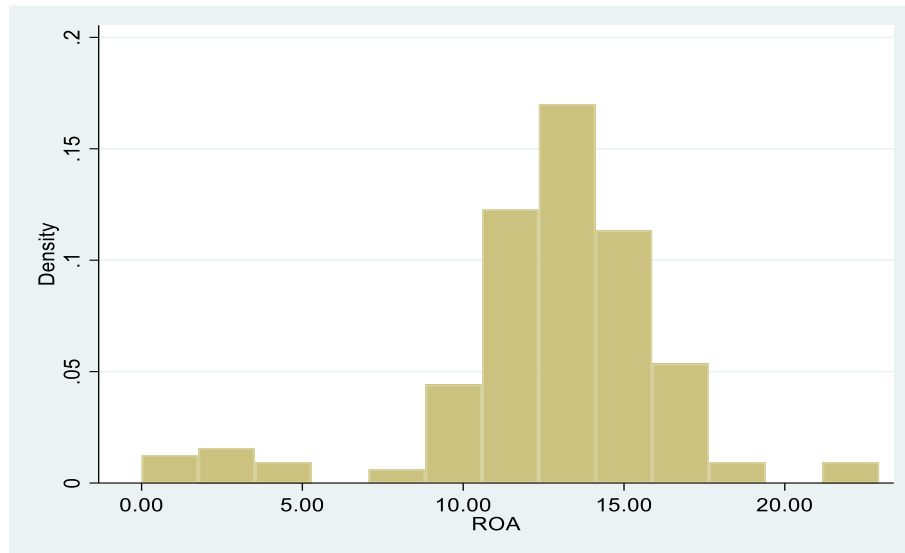


Figure 2.0 Normality test results

Source: Researcher (2023)

The findings show that the sampled data is normally distributed around the mean of 12.01 per cent. This implies that ROA was normally distributed over the sampled period and hence may be used for further analysis, without misreporting.

## EXPLORATORY DATA ANALYSIS

To examine the Return of Assets trend for the DT-SACCOs, graphs were employed for exploratory data analysis. The ROA changed in several ways between 2018 and 2022. There were few noticeable changes in ROA amongst SACCOs during the period, according to the growth plots. This conclusion states that the passing of time has no fixed effects. This is due to the lack of time-related fixed effects in the data among DT-SACCOs. The observations for ROA of DTS did not significantly differ from one another, according to additional observation. Even if it appeared that ROA had drastically altered in some circumstances, such as for Kenya Police, Telepost, United Nations SACCO, Kenpipe, Shoppers, Hazina, Sheria, National and Ukulima SACCOs, this effect has no bearing on the model of panel data analysis that was used.

### Process Innovation and performance of DT SACCOs in Nairobi City County

The null hypothesis is supported by the P-value of 0.891, which is more than 0.05 for process innovations hence the null hypotheses Ho2: There is no significant link between process innovation and Nairobi City County's deposit taking SACCOs financial performance is accepted. This indicates that there is a statistically insignificant correlation between process innovations and DT SACCO performance.

The study finding is also supported by George's (2013) findings from a different study he conducted to see how the financial innovation activities of Kenyan SACCOs affect their success. The approach adopted was a descriptive one, and 43 commercial banks were investigated. The study established that process innovation has a significant impact on the performance of Kenyan commercial banks. Muia (2017) assessed the impact of financial innovation on the operation of Kenyan commercial banks. The study found that financial innovation has a significant impact on the performance of Kenyan commercial banks. Further, Kibugo (2017) undertook a

study to establish how financial innovations impacted the performance of SACCOs in Nakuru. Financial innovation was proxied by process, product, and institutional. The findings showed that mobile banking was used by the majority of SACCOs as a type of financial innovation, which improved their performance. The study additionally demonstrated that SACCOs were successful in keeping their competitiveness through financial innovation. Using panel data from two public banks for the years between 1998 to 2009, Daneshvar and Ramesh (2012) conducted a study to determine how IT investments affected the profitability and efficiency of Indian public sector banks. For the purposes of correlation and regression analysis, the study used two statistical techniques. The findings showed that investments in IT led to higher deposit amounts, a higher return on assets (ROA) as a measure of profitability, a higher profit per employee as a measure of productivity, a lower net non-performing assets ratio, and lower staff costs. The study additionally demonstrated that public banks attempted to use cost-cutting and asset-quality initiatives in order to compete in the Indian banking industry.

### **Process Innovation and Financial Performance**

The first objective of the study was to establish the effect of process innovation on financial performance of DT-SACCOs in Nairobi City County. The study has shown that process innovations have a favorable impact on DT-SACCOs' performance in Nairobi City County. The regression model's positive coefficient serves as evidence for this. By holding all other factors constant, a single increase in the number of process innovations translates to a positive change in the financial performance of the SACCO.

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### **CONCLUSION**

Finding out how process innovations affected SACCOs' financial performance in Nairobi City County was the study's specific objective. Process innovation positively impacted the financial performance of SACCOs in Nairobi City County, according to the findings of the random effects regression model. The findings supported the notion that financial innovations had a favorable impact on SACCOs' financial performance in Nairobi City County.

The fundamental objective of the research was to demonstrate a connection between innovation and the performance of DT-SACCOs in Nairobi City County and was accomplished based on the study's findings. Most DT-SACCOs in Nairobi City County, according to the survey, have improved efficiency, reduced operating costs, and created new products that are integrated into their operations to increase profitability. The study findings established that there is a positive and strong correlation between process innovation and the performance of DT-SACCOs. The findings agree with the transaction Cost Innovation Theory which propagates that the primary driving force behind financial innovations is the reduction of financial or transaction costs; these

innovations are the responses to technological advancement that has caused transaction costs to go down. The need for reduction in transaction costs can trigger financial innovations that result in the improvement of financial services. According to the Diffusion Theory, institutions that want to flourish must be open to trying new things. This was also concurred by the findings which established that innovations had diffused and adopted by all the SCCOs across board and this translated to a higher ROI.

## RECOMMENDATIONS

The results from the study indicated that process innovations had a positive impact on the financial performance of DT-SACCOs in Nairobi City County. The study therefore recommends that it is essential to develop financial processes and products that can be accessed through mobile banking to increase the profitability of DT-SACCOs. Using numerous marketing platforms, the public should be taught how to use internet banking, which will ultimately promote quicker and easier access to commercial banking services. Agency banks should be more generally accepted by the public in order to increase the number of people who bank and, consequently, the degree of financial banking among the populace.

The concept of an agency is the most recent branchless banking innovation, and it strives to increase the accessibility of commercial banking services so they can increase their profitability. The rural unbanked population must have access to small loans that will empower them because agency banking has made it possible for them to receive services.

The report thus advises that SACCOs stay current with emerging financial market developments. These include things like the use of ATMs and other technologically advanced goods. The management of these SACCOs should allow the use of ICT funding for the acquisition of new software to fully automate their processes and products, as this is a means of enhancing financial performance. Due to effective marketing techniques, SACCOs must have the institutional capacity to increase their productivity and financial performance. This would stop customers from being discouraged due to long lines, tellers who are unaware of the products being offered, and drawn-out waiting times and application processes.

The paper highly recommends that Kenyan SACCOs adopt financial innovation strategies to boost overall productivity, profitability, and market share while also maximizing firm-specific advantages. SACCO management should embrace research and development to anticipate new and imaginative ideas to enhance their performance. The regulator and advisory body (SASRA) must create effective regulation and monitoring systems to make sure that various DTS implement financial innovation techniques that are tailored to their firm characteristics to increase their efficiency and performance. The study's scholarly conclusions link company traits, DTS performance, and financial innovations in Nairobi City County.

Banking institutions must strengthen security when it comes to using debit and credit cards to make transactions and payments online. By doing this, financial fraud linked to illegal access to personal credit card information would be reduced. Biometric identification should be used during ATM banking transactions as an alternative security measure to the usage of personal identification numbers.

Although online banking has been well embraced, there are a number of security risks. By making customers more cautious about using public internet services, the likelihood of financial losses would be reduced. Financial services that are easily accessible online should be developed by banking organizations in place of more conventional methods. This would prevent waste and lessen the impact on the environment.

According to the results, agency services have been restricted to basic transactions and auxiliary tasks like deposits and withdrawals during the time that agency banking has been in existence. A more intriguing viewpoint is that when banks permit agents to carry out essential tasks like reviewing loan applications and collecting loan repayment, it is advised that the banks impart the necessary expertise to the agents so they can carry out these additional tasks. To guarantee that all of the services provided by agents—who will be more effective and economical—are used, the banks must likewise promote the additional services that may be obtained through agency banking.

## Limitations of the study

The study had some constraints. Secondary information was gathered from the SASSRA annual reports, SACCO websites, and financial statements. The study was additionally constrained by the level of accuracy of the secondary source data. The data could still be subject to these flaws even though it was verifiable because it originated from the SACCO Societies Regulatory Authority (SASSRA) publications. The study also faced challenges in terms of financing the research and the available time frame to fully conclude the entire data collection to make the best conclusions.

The study's scope was restricted to determining how deposit-taking SACCOs in Nairobi City County fared financially and in terms of innovation in finance. Because of this, the SACCOs that operate outside the county could not be included in the study. The research was restricted to the five-year period from 2018 to 2022. SACCOs that were not registered as DTS in any of the years were excluded from the study since the gaps could have impacted the findings.

Some of the SACCOs did not meet the five-year requirement to be eligible for the research; these SACCOs included Comoco, Mageeza, Acumen, Airports, Kencream, Kimisitu, Ushuru, Wana Anga, and Nation SACCOs. Perhaps the findings of the study would have been different if these SACCOs had participated. A study with a broader time frame would have included eras with different economic significance, such boom and bust cycles. This may have given the problem a wider dimension by giving it a longer temporal focus.

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