

**EFFECTS OF FINANCIAL INNOVATION ON GROWTH OF
SAVINGS AND CREDIT COOPERATIVES IN KENYA**

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DECLARATION

STUDENT'S DECLARATION

I declare that this project is my original work and has never been submitted for a degree in any other university or college for examination/academic purposes.

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God bless you all.

DEDICATION

I dedicate this research study to my beloved wife and daughter, for their love and moral support and to my dear parents for the sacrifices they made in educating me and for the support they provide in life that makes me who I am today.

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ABBREVIATIONS

ATM	-	Automated Teller Machines
BOSA	-	Back Office Service Activity
CBK	-	Central Bank of Kenya
DTM	-	Deposit Taking Microfinance
EFT	-	Electronic Record Keeping
EFTPoS	-	Electronic Funds Transfer at Point of Sale
FOSA	-	Front Office Service Activity
GDP	-	Gross Domestic Product
KUSCCO	-	Kenya Union of Savings and Credit Cooperatives
MFI	-	Microfinance Institution
NPL	-	Non-Performing Loans
PC	-	Personal Computer
R&D	-	Research and Development
ROA	-	Return on Asset
ROE	-	Return on Equity
RoK	-	Republic of Kenya
SACCO	-	Savings and Credit Cooperative
SASRA	-	SACCO Societies Regulatory Authority
SME	-	Small and Medium Enterprises
SPSS	-	Statistical Package for Social Sciences
TTF	-	Task-Technology Fit
USA	-	United States of America

ABSTRACT

In a new generation of models studying the impact of innovative activities on firm growth, the focus has shifted to the complex innovation process and channels through which the innovation inputs are transformed into better performance. Due to complex and dynamic environment SACCOs operate from, there is evident force that contributes to collapse of some of them and deteriorating growth for those that survive. This is due to numerous challenges and these challenges are unique and specific to the sector in general its micro economic and macro-economic factors like deficiency in contemporary skills, stiff competition from their competitors, Economic liberalization and regulation of business. Therefore this study sought to fill this gap by answering the question; what are the effects of financial innovation on growth of SACCOs in Kenya? The study adopted a descriptive research design. The population of the study was 150 SACCOs licensed by Sacco Societies Regulatory Authority (SASRA) and that have been in operation during the period 2011 to 2015. Census method was used in this study since the target population was not large. The study was facilitated by use of secondary data that was extracted from published financial reports of the SACCOs, articles and papers relating to relationship between effects of financial innovation on growth of savings and credit cooperatives five-year period commencing 2011 up to 2015. The data collected was therefore cleaned, coded and systematically organized in a manner that facilitates analysis using the Statistical Package for Social Sciences (SPSS). Quantitative analysis was used through descriptive statistics such as measure of central tendency to generate relevant percentages, frequency counts, mode, and median and mean where possible. Regression analysis was also used to determine the relationship between effects of financial innovation on growth of savings and credit cooperatives. The study found that the five variables contribute to 78.1% of growth of SACCOs. The study concludes that value transacted using ATM positively and significantly affects the growth of SACCOs in Kenya. The study also concludes that value transacted using mobile banking positively and significantly affects growth of SACCOs in Kenya. The study further concludes that the coefficient for value transacted using internet banking was 0.795, meaning that value transacted using internet banking positively and significantly affects growth of SACCOs in Kenya. The study also concludes that the coefficient for value transacted using EFT was 0.701, meaning that value transacted using EFT positively and significantly affects growth of SACCOs in Kenya. The study finally concludes that volume of lending to group positively and significantly affects growth of SACCOs in Kenya. The study recommends that local researchers and academicians should increasingly study the financial innovation to add on to the limited literature in the area. This will ensure that there will be adequate local literature that can be used to relate to local situation. The study recommends that SACCOs should relate their monetary policy instruments to their financial reports. The study recommends that SACCOs should put more emphasis on the internal factors to efficiency. Included in the internal factors are asset quality, capital adequacy, earnings ability, management efficiency and liquidity management.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Financial innovation, broadly viewed as a vital constituent of competitiveness, entrenched in the organizational models, processes, products and services within a financial institution (RoK, 2013). Financial innovations refer to creation of new products, establishment of new institutions, adopting new technology and other facets that depict originality in the financial markets (Schumpeter, 2008). Strategic decision making, system readjustment, institutional arrangement, bringing new management, moving to new markets are some of the actions that depict financial innovation. Financial innovation boosts faster distribution of information and its more fast incorporation into financial market prices (Mosongo, 2013).

Financial innovations also refer to creation of new products like telephone banking, establishment of new services like internet banking, newfangled production process like electronic record keeping (EFT) or new organizational systems (Frame & White, 2014). As financial intermediaries, SACCOs channels savings into loans, providing saving opportunities for the poor especially in the rural areas. They are a major player in the financial sector managing to mobilize above Kshs.200 billion, which is approximately 31% of the total savings in the country (CBK, 2015). Over 81% of Kenyans rely on SACCOS to access financial services, making SACCOS a critical player in the financial sector in Kenya. SACCOs have grown at a speedy rate compared to other similar co-operatives. The introduction of the Savings and Credit Cooperative Societies Act of 2008 places the responsibility of licensing, regulation and management of deposit taking under SASRA (Mwanahawa, 2012).

1.1.1 Financial Innovation

Financial innovation is a means of getting and making public new devices of financial services and technologies, organizations and markets. It includes organizational, product and method innovation. Policymakers in developing countries have long considered the value of offering financial services to the unfortunate and near-poor. The global ‘microcredit’ program that has appeared in the last decade contrasts with earlier credit programs in being more demand-driven, charging bigger interest rates, regulating costs, and emphasizing savings mobilization as a requirement for viable credit provision (Mwangi, 2013).

With respect to the implications of the recent wave of innovations for the stability of the financial system, several points of concern are often mentioned. They include an over-leveraging of the capital, the apparent under-pricing of new instruments, the scope for undue concentration of risks, and the possibility that the apparent liquidity of marketable securities could prove illusory under adverse circumstances. In specific case of the banking industry where microfinance institutions are included, it has been claimed that the adoption and diffusion of financial innovation has allowed banks to operate on much thinner margins of safety (Mwega, 2011).

Innovation always alters the status quo, though some innovations result in bigger interruption as compared to others. Radical inventions primarily alter society and brood additional innovation forms. Incremental innovations assist in distinguishing amongst company rivals; provide continual rounds of valuable developments to current services, processes and products in addition to minimizing of prices (Wyman, 2012).

1.1.2 Growth of Credit Unions

Over the past four decades, credit unions have been vibrant especially in rural areas, as the banks left a gap when they withdraw from service provision to the rural poor. The membership of rural credit unions grew from 500,000 in 1975 to 1.2 million in 2005. During these four decades credit unions were primary closed cooperatives dealing only with active members of specific organizations dealing with a particular line of services or products. Many credit unions still continue to offer limited services to members only, but a few others, which are larger, have opened up to non-member clients by establishing FOSA which offer a broader range of financial services to both members and non-members. Larger credit unions in terms of capital base began offering FOSA's in their head during the economic liberation period of 1990's when commercial banks withdrew their services from less profitable areas. Thus the FOSA's attract former bank customers who were left un-banked (Turtiainen, 2015).

The credit unions sub-sector encompasses the deposit taking (FOSA) and non-deposit taking Sacco's. These have separate regulators whilst non deposit taking credit unions are regulated, supervised by the Commissioner in charge of Co-operatives, the credit unions that take deposits are licensed, supervised and regulated by the Sacco Societies Regulatory Authority. SASRA only gives licenses to credit unions that are fully registered under the Act CAP 490. All credit unions operate BOSA, but few have gone into FOSA. FOSA offers basic banking services such withdrawals that can be withdrawn, debit cards' issuance, deposits, loans, transfers money, automated teller machines, salary processing and so on. Members of credit unions operating FOSA enjoy semi-banking services unlike BOSA where member's savings are only accessible upon exit from the credit unions. Thus in credit unions FOSA members

primarily save enhance their access to loans and earn returns on savings (Gweyi & Karanja, 2014).

The cooperative enterprise has provided an important model as a majority of world's disadvantaged and poor are subject to social exclusion and lack of access to opportunities. As the negatives effects of globalization has been the rise of unregulated informal economy, people in the informal sector have formed cooperatives to aid them in their self-employment. Thus in rural areas credit unions are the means of accessing banking services which are lacking in many local areas and too many classes of people. Credit unions have been able to constantly reach the poor and marginalized by offering their banking services and helping form small and micro businesses (Makori, Munene & Muturi, 2013).

There has been a transformation of credit unions to offer banking like services to its customers. The membership definition has also been expanded to net in traditional non-members. This has brought additional risks to an industry that was initially conservative and closed. This transformation has also created the systematic importance of deposit taking organizations. Which now account for over half of the assets and deposits in credit unions Sub-sector. While this is true it is vital to investigate the underlying key factors that are driving the FOSA activity among Sacco's (Makori, 2013). Growth of credit unions in this study will be measured in terms of the value transacted using ATMs, mobile banking, internet banking, EFTs and the volume of lending to groups.

1.1.3 Financial Innovation and Growth of Credit Unions in Kenya

The traditional innovation-growth view shows an affirmative relationship between Financial Innovation and growth of credit unions. The view proposes that financial innovation raises the variety and value of credit union services, facilitates risk sharing, completes the market and improves allocative efficiency (Merton, 2011). Nyathira (2012) propose that financial innovation has facilitated the reduction and the instability in economic activities in the early 21st century. Additionally, financial innovation has led to credit unions opening many branches in several part of the country as some grow to become micro finance institutions. Therefore new products like the securities regarding new practices that include credit scoring, new monetary institutions and markets including Internet banks are cases in point. Consequently, financial innovation is reason for economic and financial growth (Sinani, Jones & Mygind, 2007).

Most of the innovations that have happened have been caused by new delivery channel methods such as automatic teller machines (ATMs) and debit card technologies, which have enabled banks to differentiate the way in which consumers transfer cash, payments of bills and purchase services and goods away from cash usage or cheques. In essence, technological innovation in the financial institutions has decreased costs per transaction and brought processing competences by minimizing the time taken for making a transaction and cutting down the likelihood of human faults (Theuri, 2013) Technological advance as embodied in method innovation increases productive effectiveness by adding the efficiency of inputs and minimizing average total costs, similarly technological advance as embodied in product (or service) innovation improves efficiency by offering society a more favorite blend of

goods and services. These two types of innovation have a significantly positive effect on efficiency (Chege, 2012).

1.1.4 Credit Unions in Kenya.

A cooperative organization is a voluntary organization which is established by some persons on the basis of cooperation and equality to safeguard their common economic interests. For example, Credit cooperatives are formed with the purpose of providing short-term loans and develop the habit of saving. Members of these organizations benefit from favorable terms catered to their needs as compared to other large financial institutions like commercial banks (Akello, 2011).

The credit unions subsector is part of the immense Kenyan Co-operative association encompassing both Financial and non-financial cooperatives. Credit unions are the financial cooperatives while non-financial cooperatives comprise Dairy, livestock, coffee, fishermen, housing, versatile and others which have made their positive impact to the lives of Kenyans (King'ori, 2013). The exclusivity of credit unions movement is its geographical spread across Kenya. In all the 47 counties, there are several credit unions offering financial access to financially exclude. The fact that credit unions are widely distributed across the counties has been responsible for financial inclusion. Credit unions despite their uniqueness have recently been experiencing member reduction, because other financial institutions started targeting the same market (Kimaru, 2013).

This has made credit unions to remodel themselves competitively from the classical to modern methods of business and efforts to remain viable. They have had to change the way of doing things bringing in new procedures including marketing, creation of

new products, adoption of new technology and a different market approach to attain competitive advantage (Maina, 2011). Adoption of the new approaches has improved the credit unions capacity to control risk, impose leading contracts and decrease the transaction costs of offering credit. Some of the innovative products adopted by credit unions in Kenya are; automated teller machines (ATM's), consolidated forms of banking by use of nationwide network of branches, one tariff current accounts, debit cards and credit, low priced bank cheques, local/international transfers of money, trading internationally, collective lending MFIs, personal loans that are unsecured and mobile banking for utility settlements, top up of air time, enquiry of balances, transfer of funds and requests of statement (Chege, 2013).

1.2 Research Problem

The value garnered from financial innovation is observed by Merton (2011) as a method transforming to a competitive advantage, superior financial growth and consequently growth of a company. Despite the implication of financial innovation in elucidating performance in financial institutions, the impact of innovation on growth is misinterpreted in two ways; insufficient comprehension about the innovation triggers and poor testing of innovations' impact on development (Mabrouk & Mamoghli, 2010).

Due to complex and dynamic environment SACCOs operate from, there is an evident force that contributes to failure of some of them and deteriorating growth for those that survive. This is due to numerous challenges that are unique and specific to the sector in general (Makori, 2013). The following are some of the innovations that have enhanced the Sacco sector, these comprise the institutional, product and process innovation. Peter & Raphael (2010) in their study on Australia banks found no

evidence that the propensity to ore first into new initiative has significant impact on growth. This view is contrary with Sinha & Chandra (1992) who are of the opinion that early adopters of financial innovation have improved growth of SACCO (Frame & White, 2014).

Majority of SACCOs growth in Kenya is decimal. Many of them still do not have FOSA services. How to strategize for financial innovation basing on the available resources to attain growth has become a great challenge. There is clear inadequacy of financial innovation among SACCOs in Kenya. More than 81% of Kenyans rely on SACCO's to access financial services (Mwanahawa, 2012). However, the use of SACCOs by Kenyans as a financial service provider has been declining over the last five years. The decline has been from a high of 13.5% in 2009 to as low as 9.1% by the end of the year 2013. During the same period, customers accessing commercial banks for financial services has grown from a low of 13.5% in 2006 to 29.2% in 2013 (Mwega, 2011). This trend in loss of customers is accredited to the rivalry from banks in the pre-emptive outreach and delivery of easy access transactions accounts as well as consumer loans through financial innovations (FinAccess, 2009). SACCOs have been losing their market share irrespective of their geographical location in the country compared to other financial institutions (Nyaga, 2012).

Locally, several studies regarding effects of financial innovation have been carried out. For instance, Nyathira (2012) in her study assessed the impact of innovation financially on the financial performance of commercial banks. Otieno (2011) also did a study on how financial innovation and financial performance relate among savings and credit co-operative societies in Mombasa county Kenya while Mutuku (2014) did a study on how financial innovation and SACCO's efficiency related. Onduko (2011)

worked on how financial innovation and the SACCO's financial performance related in Nairobi County while Njeri (2012) assessed the impact occasioned by financial innovation on deposit taking SACCO's financial performance in the County of Nairobi in addition to a study by Gatimu (2014) that focused on the impact that financial innovation had on the administration of credit as administered by SACCOs in Kenya. While these studies looked at financial innovations on different dependent variables such as financial performance, financial efficiency and credit provision, none of them looked at the financial effects on the growth of SACCOs. Thus this study pursued to take care of this gap as to the effects of financial innovation on growth of SACCOs in Kenya.

1.3 Research Objectives

The objective of the Study was to find out the effects of financial innovation on the growth of SACCOs in Kenya.

1.4 Value of the Study

To the regulators, this research work will provide useful information regarding innovations and its effects on the financial inclusion and deepening and hence provide a clear framework on supervision and regulation of SACCOs. It will also benefit the policy makers in creation of a conducive environment to encourage innovations at different levels in the SAACO sector. This is because; this study will encourage the various stakeholders to conduct training through seminars to educate SACCO trustees on the innovation importance and how to go about it.

Sacco's managers will benefit from this study to improve on their market share as they will gain knowledge on effects of financial innovation on growth, what specific

financial innovations will be of value and hence allocate more funds on them. SACCO Managers will be able to know that they can use financial innovation to seek an alternative source of funds instead of only relying on the contribution of their members. This will enable them to provide members with financial services at lowered interest rates tailored to their specific needs.

Theoretically, the study will be helpful to researchers and academicians who seek to develop theories on financial innovations which will help them understand the relationships that exist between financial innovations and growth of SACCOs. It will help them build up their research work since this study provides a keen look at the financial innovations that influence the growth of SACCOs. Academicians will use this study as source of their study materials especially those that are specializing in SACCO and Cooperative banking studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter discusses theories surrounding the study of effects of financial innovation and growth of SACCOs in Kenya. Empirical literature related to financial innovation and growth of SACCOs is reviewed as presented by various scholars and researchers per both global and local perspectives. This chapter also presents the theoretical review, determinants of Sacco's growth, empirical studies in addition to the summary of literature review.

2.2 Theoretical Review

The study was anchored on the theory of task-technology fit, Rogers' innovation diffusion theory, limitation induced financial innovation theory and circumvention innovation theory.

2.2.1 The theory of Rogers Innovation Diffusion

Rogers (1995) outlining the diffusion of innovation theory explains how financial innovations (new) are accepted. This theory outlines five features that affect acceptance of an innovation to include; complexity, compatibility, testability, observability and relative advantage. Complexity refers to the innovation's comprehension hardness and its use (Greenhalgh, 2014).

Therefore, any financial innovation that is compatible and presents relative advantage will be seen as a competitive advantage by SACCOs in Kenya. If the SACCOs implement and put them into practice, many customers/clients are bound to become

members thus increasing customer base to these SACCOs which eventually translate into growth (Otieno, 2011).

2.2.2 Task-Technology Fit Theory

As stated by Goodhue & Thompson (1995), the task-technology fit (TTF) addresses the appropriateness of the job at hand and the technology in question. The task-technology fit models have four major constructs, Technology Characteristics, Task Characteristics, which jointly affect the third one Task- Technology Fit, which later influences the outcome variable, either Performance or Usage. TTF models hypothesize that IT will be utilized if, and only if, the IT functionality are appropriate to the user tasks. Rational, knowledgeable users will choose those tools and methods that will help them complete the task with the maximum net benefit. IT that does not offer satisfactory benefits will not be used (Mosoti & Masheka, 2010). Information systems are modeled to assist users carry out tasks more efficiently and competently. SACCOs spend millions of dollars on information systems to add value to performance that eventually would translate into growth (Wyman, 2012).

IT is an important factor to SACCOs operations in achieving growth. Customers rationally would prefer being served quickly and sufficiently. Therefore, SACCOs that embrace technology in their daily operations aiming at attaining efficiency usually attract and impress their customers who intern become point of referrals leading to the growth of their customer base hence growth. Sufficient efficiency on tasks performed. Consequently, for efficiency of operations the IT technology must align with the errands that the specific technology is meant to support (Muthui, 2013).

2.2.3 Constraint Induced Financial Innovation Theory

The constraint-induced financial innovation theory was developed by Silber (1977). In this theory he suggested that the key reason of innovation in financial services is to enhance the growth and profitability of financial institutions. Pointing out limitations in both the external and internal environments of a firm to profit maximization efforts, Silber (1977) observed that the management of the institution in question could either enhance or hamper growth of the firm in question.

2.2.4 Circumvention Innovation Theory

The circumvention innovation theory was pioneered by Kane (1981). To elevate losses incurred due to poor management of the firm in question and government regulation like taxation measures, technological innovation comes in handy to bridge the gap to keep the institutions in question afloat financially in terms of profitability (Devlin, 2015). Financial innovation is therefore an effort for making financial gains to evade stiff government regulations (Gweyii & Karanja, 2014).

2.3 Determinants of Growth of Credit Unions

Financial innovations are key factors to the growth of financial institutions. In this section Automated Teller Machines, mobile banking, internet banking, electronic fund transfer and group lending microfinance are discussed in light of the effects they have towards growth of the SACCOs.

2.3.1 Automated Teller Machines

Automated Teller Machines are of two types. They range from those that allow for withdrawals of cash in addition to account statements to those that accept deposits and allow for a line of credit payments. To get to the inbuilt innovative features, one

should own an ATM card and account that belongs to the bank that operates the ATM in question. The tomorrows ATMs are those that are complete-service terminals (Abernathy & Utterback, 2015).

Most banks and credit unions own ATMs. Many institutions and individuals purchase or lease ATMs in which case profit models are anchored on charging fees to the machine's users in which case, they help eliminate the burden of customer service by bank tellers being a cost cutting measure on payroll costs. Consequently, SACCOs serve many clients due to efficiency and effectiveness of the services (Devlin, 2015)

2.3.2 Mobile Banking

Wyman (2012) observed that though the use of mobile phones in banking services had been around for years but it's till recent that new modalities spread speedily to those that had earlier on been unbanked. The main impetus towards this position is the cheap mobile banking services but with a wide coverage due to mobile networks as opposed to services as offered by the classical retail bank outlets. Coetzee, Kamau & Njema (2013) observed that mobile banking services reached formally unbanked lots thought to have created a transition towards formal from informal transactions in which case triggering growth economically.

It is anticipated that Kenya's biggest retail M-banking firms will attain significant leads in customer satisfaction versus midlevel and local banks by 2020 (Mwega, 2011), a condition that renders midsize Savings and Credit Cooperatives at a jeopardy.

Coupled with the above, costs of the regulatory environment are anticipated to merging of midsize Savings and credit cooperatives unless they take stern actions for urgent changes to redirect their course (Sichei & Kamau, 2012).

2.3.3 Internet Banking

E-banking as is commonly referred is the use of internet and networks of telecommunications networks to provide a broad array of better services and products to the clients of the banking sector. Hence internet as a medium of offering banking is a significant delivery avenue for a better reach to the continuously growing clientele hence being in a position to create and sustain good incomes to the SACCOs (Wyman, 2012). Online banking therefore does enable SACCOs' clientele conduct routine banking activities conveniently (Devlin, 2015). Therefore financial institutions should embrace information systems to meet the clients expectations since they are well cognizant of technological happenings (Devlin, 2015).

2.3.4 Electronic Fund Transfer

Oluwatolani, Joshua & Philip (2011) explained that electronic networks that enhance funds transfer support large piles of data incorporating other technical challenges like switching EFT messages and terminal requirements,

Gonzalez (2008) also observed that the e-banking has undergone real speedy developments altering traditional banking practices. Discussing the matter, Mosongo (2013) observed that thanks to the computerization of banking practices, the financial sector has become intense since the initial ATM was used - USA in 1968 that was a *mere* cash vending machine (Jabnoun & Al-Tamimi, 2013).

2.3.5 Group Lending Microfinance

Microfinance is composed up of a selection of financial services typically accessible to low-income businesspersons. Microcredit is the most extensively used constituent of microfinance but there are other micro financial tools such as micro insurance and micro energy, which are gradually becoming reachable to persons in disadvantaged areas. The benefit to these programs is that they are principally dispersed without the need for prior credit history, security or bank approval. The term microcredit means the advancement of small loans to destitute quarters in a bid to support entrepreneurship. This lot therefore does not have security, unstable employments, poor credit history and even not in possession of basic requirements to access loans in a traditional banking system. This notion has been observed by Akello (2011) citing that microcredits of microfinance institutions are meant to provide wide arrays of financial services to the poor of the poor.

When SACCOs introduce and encourage group microfinance lending in Kenya, many customers including those that do not have collateral to offer to obtain a credit facility usually subscribe to the credit facilities available. This way SACCOs tend to grow at high rate since majority of Kenya's are poor. This group lending innovation strategy would be able to encourage many poor borrowers who would otherwise not have borrowed. Therefore a wider customer base is able to be achieved by the SACCOs (Kimaru, 2013)

2.4 Empirical Studies

The number of researchers dealt with the subject of financial innovation and its impact on business organizations from several different directions. Akingbade (2011) in assessing how financial innovation and the performance of commercial banks

related the results showed a strong positive correlation between technological innovation and the banks' employees' performance a relationship seen to boost banks' profits and satisfaction of customers.

Malhotra & Singh (2013) in their study on internet banking, it was found out that these banks were better banks having a higher efficacy in their operations as compared to traditional banks. It was also found that Internet banks had negative relationship with the risk profiles of the banks.

Heffernan (2008) found that financial innovations led to increases in the size of the finance institutions and that research and development and cooperation are some of the main variables that spear headed financial innovation as measured by the share of percentage innovations as sold.

Beck, Chen & Song (2012), observed that high levels of financial innovation had a high association with a strong relationship on a country's development opportunities and capital and that finance innovations are connected with high growth within industries.

Abor (2005) in his study found that technological innovation had assisted positively in providing banking services and the eventual development of the Ghanaian industry of banking.

Magali (2015) revealed that 70% of non-urban SACCOSs had operated on losses occasioned by lack of reliable techniques and financial innovations that could prevent credit risk. Additionally, the aspect of management of credit risk hampered the profitability of rural SACCOs.

Mugo (2012) in his study, it was exhibited that MFIs had innovated new services including mobile banking, SME loans, business accounts, school fees loans, partnerships and financial trainings. It was therefore noted that financial innovations in MFIs led to growth of firms in terms of product numbers, share of markets, general profitability and loan sales.

In his study, Omondi (2013) found that there was a strong positive correlation between technological innovation and the performance of MFIs in Kenya financially. Hence variability of the dependent (financial performance) was explained to a large extent by the technological innovation.

Njeri (2012) doing her study on the impact of financial innovation on deposit taking SACCOs in Nairobi's financial performance reported that there was increased usage of money transfers in forms like Airtel money and Mpesa and so concluding that there was a strong positive correlation between technological innovation and financial performance of this SACCOs in Nairobi, Kenya.

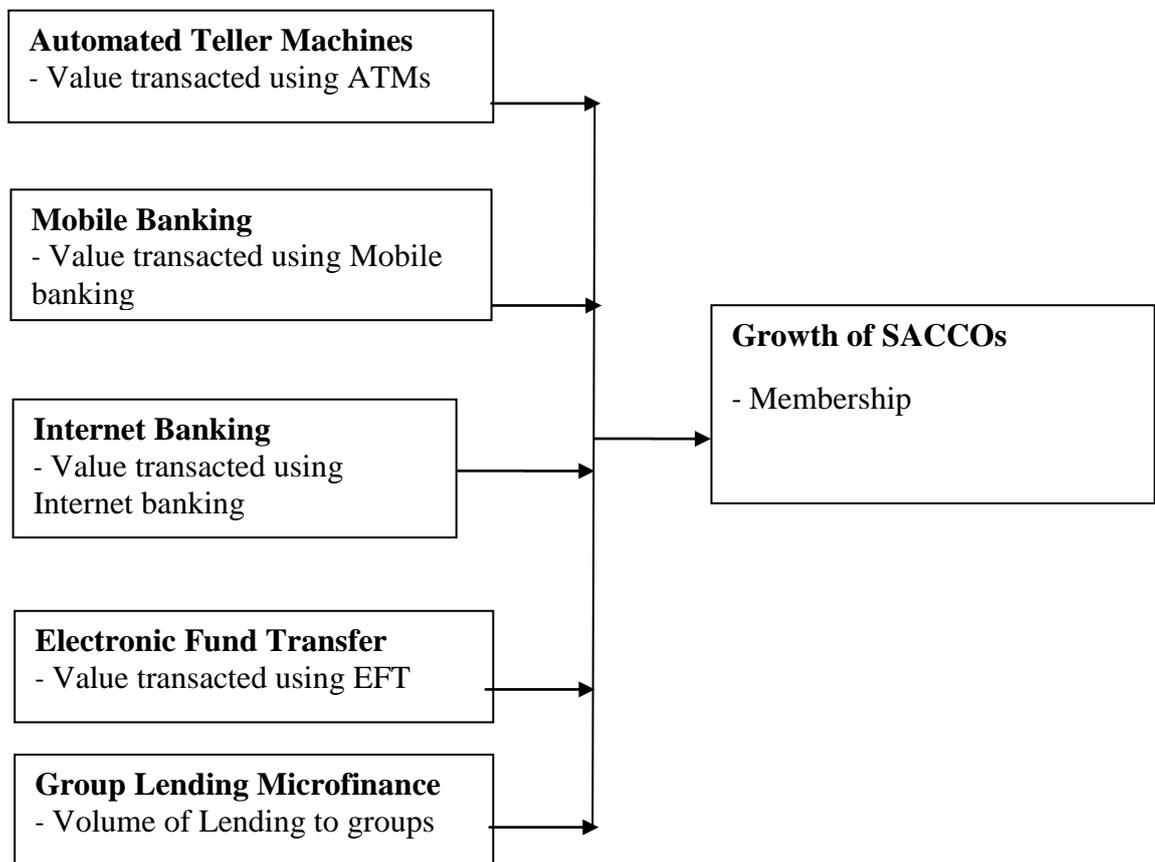
Kimaru (2013) in his study observed that ROA indicator in line with Return on Equity were on a growth trend and that diversification of services and products of the Deposit Taking Institutions explained the 62.11% variability on financial performance for the DTMS.

Kanzi (2011) additionally found that there was a vital relationship in terms of adoption of financial innovations and the profitability levels of the commercial banks operating in Kenya.

Nyathira (2012) the study found out the effect of financial innovation was not always obvious and that there were cases of negative relationships between innovation and financial performance.

Otieno (2011) the results indicated a positive correlation between financial innovation and performance. Product innovation emerged as the most influential of the independent variables used in the study.

2.5 Conceptual Framework



Independent variables

Dependent variables

Source: Author (2016)

The conceptual framework shows the relationship between the variables - independent (ATMs, M-Banking, e-Banking, e-Fund Transfers and Group Lending Microfinance)

and the dependent variable (Growth of SACCOs). It was expected that all the independent variables would positively and significantly effect on the growth of SACCOs.

2.6 Summary of Literature Review

This chapter dealt with reviews of literature on the effect of financial innovation on growth in SACCOs. The study is anchored on Rogers' innovation diffusion theory, task-technology fit theory, constraint induced financial innovation theory and circumvention innovation theory. The researchers have different views on the subject of how financial innovation affects growth of SACCOs, and while some do not seem to find a direct relationship between financial innovativeness and eventual growth, the studies done on innovation and efficiency find a positive relationship between financial innovation and productivity of firms (Nyathira, 2012). Studies done locally have concentrated on commercial banks, and found a relationship that is positive between performance and financial innovation as well as a positive relationship between efficiency and performance, but not a direct relationship between financial innovation and efficiency. These studies have not however been extensive on SACCOs. This paper therefore addressed the effects of financial innovation on the efficiency of savings and credit cooperatives in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter dealt with the various stages that were followed to complete the study with the following subsections: research design, target population, data collection and data analysis and eventually the presentation.

3.2 Research Design

The study adopted a descriptive research design. A descriptive study does describe the subject by generating a profile of problems of a group of people, events by the gathering of data and eventual tabulation of frequencies on the variables of the research indicated by the study of Cooper & Schindler (2003). The choice of the design has been made as the researcher is concerned with the state of affairs currently prevailing and no variable manipulation was done. Descriptive researches portray accurate profiles of events, persons and situations (Kothari, 2004). Descriptive design also allows for the gathering of sizeable amounts of data from large populations in more economical ways.

3.3 Target Population

In this study, the population was 150 SACCOs licensed by Sacco Societies Regulatory Authority (SASRA) and that have been in operation during the period 2011 to 2015. Census method was used in this study since the target population was not large.

3.4 Data Collection

The study was carried out by the use of secondary data as extracted from the financial reports as published by SACCOs, papers and articles relating to a relationship

between effects of financial innovation on growth of savings and credit cooperatives five-year period commencing 2011 up to 2015. The secondary data was collected by the use of data collection form designed to record data concerning values transacted using automated teller machines, mobile banking, internet banking, Electronic Fund Transfer and volume of lending to groups.

3.5 Data Analysis

Data, as gotten in raw form from the field would be hard to interpret without cleaning, coding, and analysing (Mugenda & Mugenda, 2003). This critical role and eventual goals objectives were attained by using the Statistical Package for Social Sciences (SPSS). Quantitative analysis was then employed through descriptive statistics incorporating the measure of central tendency in generating applicable frequency counts, percentages, mode, mean and median where possible. The tables interface was also utilised to make the work more interactive in addition to the use of regression models to facilitate the determination of relationships between the variables.

3.5.1 Analytical Model

A regression model was employed to find out the relationships amongst the variables;

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Whereby Y = Growth of SACCOs (Measured in terms Membership)

α = Constant

X_1 = Automated Teller Machines (Value transacted using ATMs)

X_2 = Mobile Banking (Value transacted using Mobile banking)

X_3 = Internet Banking (Value transacted using Internet banking)

X_4 = Electronic Fund Transfer (Value transacted using EFT)

X_5 = Group Lending Microfinance (Volume of Lending to groups)

β_i (i= 1, 2, 3, 4, 5) = Regression Coefficients.

e = Error Term

3.5.2 Test of Significance

R^2 (coefficient of determination) was also employed to measure the extent to which the variation in interest rate spread is explained by the financial innovation variables. F-statistic and t-statistics was also computed at 95% confidence level to test whether there was any significant relationship between automated teller machines, mobile banking, internet banking, electronic fund transfer and group lending microfinance on growth of SACCOs registered by SASRA in Kenya. This analysis was done using SPSS software and the findings were presented in form of a research report.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND INTERPRETATION

4.1 Introduction

This chapter dealt with the analysis of data gathered during the study on the effects of financial innovation on growth of SACCOs in Kenya. This chapter comprise of the following sub-section; descriptive statistic, inferential statistics and interpretation of the findings.

4.2 Descriptive Statistics

This section focused on the general description of the study variables' characteristics plus the maximum (Max), minimum (Min), standard deviation, Mean, Kurtosis and Skewness.

Table 4. 1: Descriptive Statistics

	Minimum	Maximum	Mean		Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Std. Error	Statistic	Std. Error
Membership (no.)	1,015	130,720	35,541.644	3,492.7	40,581.6	1.187	0.209	-0.11	0.414
Value transacted using ATMS(ksh)	2,600,000	1,987,000,000	316,420,019	36,596,360.7	425,211,286.1	1.745	0.209	2.99	0.414
Value transacted using mobile banking(ksh)	380,000	560,000,000	56,254,877	9,223,374.6	105,968,506.1	3.356	0.211	11.925	0.419
Value transacted using internet banking(ksh)	563,000	109,000,000	28,606,711	3,344,455.5	32,597,719.5	1.165	0.247	-0.072	0.49
Value transacted using EFT(ksh)	358,000	5,679,000,000	482,569,703	84,840,578.4	948,546,503.1	3.526	0.217	14.519	0.43
Volume of lending to groups	3,300,000	5,679,000,000	49,052,2295	84,500,004.0	944,738,765.4	3.549	0.217	14.677	0.43

Source: Research Findings

The results in Table 4.1 showed that value transacted using ATM had a mean score of 316,420,018.9852, value transacted using mobile banking had a mean score of 56,254,877.3788, value transacted using internet banking had a mean score of 28,606,711.4737, value transacted using EFT had 482,569,702.8800, volume of lending to groups had a mean score of 490,522,294.8800 and membership (No.) had a mean score of 35,541.6444. Analysis of skewness shows that value transacted using ATM, value transacted using mobile banking, value transacted using internet banking, value transacted using EFT and volume of lending to groups and membership (No.) are asymmetrical to the right around their mean.

4.3 Inferential Statistics

The study did Pearson correlation analysis and a multiple regression analysis in establishing the relationships amongst the variables of the study.

4.3.1 Correlation Analysis

Pearson's correlations, conducted at 95% CI (confidence interval) and confidence level 2-tailed at 5%.

Table 4. 2: Correlation Matrix

		Growth of SACCOS	Value transacted using ATMS	Value transacted using mobile banking	Value transacted using internet banking	Value transacted using EFT	Volume of lending to groups
Growth of SACCOS	Pearson Correlation	1					
	Sig. (2-tailed)	.					
Value transacted using ATMS	Pearson Correlation	.638	1				
	Sig. (2-tailed)	.029	.				
Value transacted using mobile banking	Pearson Correlation	.764	.523	1			
	Sig. (2-tailed)	.017	.016	.			
Value transacted using internet banking	Pearson Correlation	.622	.743	.597	1		
	Sig. (2-tailed)	.031	.012	.028	.		
Value transacted using EFT	Pearson Correlation	.529	.533	.720	.531	1	
	Sig. (2-tailed)	.047	.009	.002	.014	.	
Volume of lending to groups	Pearson Correlation	0.598	0.602	0.814	0.600	.742	1
	Sig. (2-tailed)	0.046	0.009	0.002	0.014	0.042	.

The table above indicates the correlation matrix between the financial innovations (Value transacted using ATMS, Value transacted using mobile banking, Value transacted using internet banking, Value transacted using EFT and volume of group lending) and growth of SACCOS. According to the table, there is a positive

relationship between growth of SACCOs and Value transacted using ATMS, Value transacted using mobile banking, Value transacted using internet banking, Value transacted using EFT and Volume of lending to groups of magnitude 0.638, 0.764, 0.622, 0.529 and 0.598 respectively. The positive relationship indicates that there is a correlation between the financial innovations and the growth of SACCOs.

4.3.2 Regression Analysis

Coefficient of determination shows the degree of change in the dependent variable that is elaborated by the changes in the variables (independent) as explained by all the five independent variables (Volume of lending to groups, Value transacted using EFT, Value transacted using internet banking, Value transacted using mobile banking, Value transacted using ATM).

Table 4. 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.888	0.788	0.781	7919.9

- a. Predictors: (Constant), Volume Of Lending To Groups, Value Transacted Using Mobile Banking, Value Transacted Using EFT, Value Transacted Using Internet Banking, Value Transacted Using ATMS
 b. Dependent Variable: Membership (No.)

The five independent variables as studied explain 78.1% of the growth of SACCOs as shown by the adjusted R^2 . This therefore means the five variables contribute 78.1% of growth on SACCOs, while the rest of the factors not studied in the research contribute 21.9% of growth on SACCOs.

4.3.3 ANOVA

ANOVA statistics were also computed to find the fitness of the model in predicting the relationship between the study variables.

Table 4. 4: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3.479E10	5	6.958E09	107.961	.000 ^b
Residual	9.346E09	144	6.445E07		
Total	4.414E10	149			

a. Dependent Variable: Membership (NO.)

b. Predictors: (Constant), volume of lending to groups, value transacted using mobile banking, value transacted using EFT, value transacted using internet banking, value transacted using ATMS

The statistics on ANOVA per table 4.4, the data as processed, being the factors on the population, had a level of significance of 0.000 that depict that the data is good for conclusion purposes as regards the factors of the population. At 5%, the calculated F's Level of significance was 107.961 and so, that the F calculated > F critical (value at 2.9582), it signifies the significance of the model overall, i.e. weighty impact of financial innovation on growth of SACCOs in Kenya.

4.3.4 Regression Coefficient

Table 4. 5: Regression Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	6.202	2.5		2.481	0.0143
Value transacted using ATMS	0.843	0.374	0.784	2.254	0.0257
Value transacted using mobile banking	0.802	0.296	0.695	2.709	0.0076
Value transacted using internet banking	0.795	0.272	0.586	2.923	0.0040
Value transacted using EFT	0.701	0.246	0.537	2.850	0.0050
Volume of lending to groups	0.679	0.279	0.501	2.434	0.0162

The model below is resultant of the regression coefficients in table 4.4

$$Y = 6.202 + 0.843ATM + 0.802MB + 0.795IB + 0.701EFT + 0.679VLG$$

Where ATM is value transacted using automated teller machines, MB is value transacted using mobile banking, IB is value transacted using internet banking, EFT is value transacted using electronic funds transfer and VLG is volume of lending to groups). From the model, taking all factors (Volume of lending to groups, Value transacted using EFT, Value transacted using internet banking, Value transacted using mobile banking, Value transacted using ATM) constant at zero, growth of SACCOs in

Kenya was 6.202. The outcomes also portray that taking all other independent to be zero, a unit growth in value transacted using ATM makes a 0.843 upsurge in growing of SACCOs in Kenya; a unit growth in value transacted using M-banking makes a 0.802 rise in growth of SACCOs in Kenya; Further, a unit increase in value transacted using e-banking will translate to 0.795 growth surge of SACCOs in Kenya; a unit increase in value transacted using EFT will lead to 0.701 increase growth of SACCOs and a unit increase in volume of lending to groups will lead to 0.679 increase in growth of SACCOs in Kenya. Consequently, the variables were so significant ($P < 0.05$).

4.4 Interpretation of the Findings

The regression model in the study revealed that, Value transacted using EFT, Value transacted using internet banking, Value transacted using mobile banking and Value transacted using ATM and volume of lending in groups had a positive effect on growth of SACCOs in Kenya. The study concluded that the intercept was 6.202 for all the years.

The independent variables of the study as studied (Volume of lending to groups, Value transacted using EFT, Value transacted using internet banking, Value transacted using mobile banking, Value transacted using ATM) explain a substantial 78.1% of growth of SACCOs in Kenya as denoted by adjusted R^2 (0.781). This consequently means the five variables add to 78.1% of growth of SACCOs in Kenya, while the rest of the factors missing in the study account for 21.9% of growth of SACCOs in Kenya. This is in agreement with Otieno (2011)'s study findings in which case results indicated a positive relationship between financial innovation and the performance of SACCOs within Mombasa County financially. The most influential

variable was product innovation followed by process innovation and lastly institutional innovation. The coefficient of determination (R^2) showed that that 23.2% of the financial performance of SACCOs in Mombasa County was influenced by financial innovation. Several studies conducted under the same topic by the Abor (2005, Magali (2015), Mugo (2012), Omondi (2013), Njeri (2012) Kanzi (2011) found positive results in the relationship between innovativeness financially and growth of SACCOs in Kenya.

The study also established that the coefficient for value transacted using ATM was 0.843, meaning that value transacted using ATM positively and significantly influenced the growth of SACCOs in Kenya. This is in line with Abernathy and Utterback (2015) that the future ATMs would provide banking services with completeness. Devlin (2015) also established that customer prospects with regard to service would be key to be put into perspective prior to implementation structural changes which are met by the use of ATMs. This way, SACCOs are able serve many customers leading to SACCO growth since customers will keep streaming in as they find services are effectively and quickly met.

The study established that the coefficient for value transacted using mobile banking was 0.802; meaning that value transacted using mobile banking positively and significantly influenced the growth of SACCOs in Kenya. This correlates to study of Coetzee, Kamau & Njema (2013) with close findings. Furthermore, Sichei & Kamau, (2012) in their findings anticipated mergers of SACCOs if no strategies are put in place to enhance competitiveness with larger ones.

The study also established that the coefficient for value transacted using internet banking was 0.795, meaning that value transacted using internet banking positively

and significantly influenced the growth of SACCOs in Kenya. According to Devlin (2015), banking online as a concept does enable clients to perform most of the banking transaction including application of loans. Wyman (2012) also adds that e-banking is a complementary avenue through which banking services can be offered. This therefore is seen by SACCOs as a better means to serve its wide and ever-growing customer base with quality service, fast, efficient and convenient manner. It is also believed to create good revenue to SACCOs thus leading to profitability and growth.

The study also established that the coefficient for value transacted using EFT was 0.701, meaning that value transacted using EFT positively and significantly influenced the growth of SACCOs in Kenya. This agrees with Gonzalez (2008) observed that e-banking had exponentially grown and revolutionized the traditional practices of banking. Mosongo (2013) also indicated that due to computerization, most manual labor would be replaced by computers.

Finally the study found that volume of lending to groups had coefficient of 0.679, meaning that volume of lending to groups positively and significantly influenced the growth of SACCOs in Kenya. This is in agreement with Akello (2011) regarding the advancements of small loans.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter puts forward the findings' summary, study conclusions, recommendations, limitations on the relationship between financial innovation and growth of SACCOs in Kenya in addition to suggestions for further studies.

5.2 Summary

Growth of a firm is very vital as it shows the results attained over a time period. Growth can be influenced by factors that can be controlled by the firm, as well as by factors that are not under the control of such firms. Controllable factors include everything related to management of inputs and outputs or transforming inputs into outputs.

The study sought to bring to the fore the impact of financial innovation on the growth of SACCOs in Kenya. The study having employed a descriptive research design with a population of 150 SACCOs as licensed by SASRA have been in operation during the period 2011 to 2015, performing a census survey. The study used secondary data as extracted from financial reports as published by the SACCOs, articles and papers relating to relationship between effects of financial innovation on growth of savings and credit cooperatives five-year period commencing 2011 up to 2015. The data gathered was cleaned and coded, analytically arranged in a method that facilitates analysis using SPSS. Regression analysis was used in a bid to test for relationships amongst variables. The study found that the five variables contribute to 78.1% of

growth of SACCOs and that a unit increase in value transacted using ATM leads to 0.843 increases in growth of SACCOs.

From the study results and discussion, the study concludes that financial innovation instruments affect the level of growth of SACCOs in Kenya. The conclusion is that financial innovation had a positive and vital impact on growth of SACCOs in Kenya for the period of this study. The study recommends that SACCOs in Kenya ought to approve strategy and substantial strategies related to the control of liquidity risk in both normal and stressed circumstances and review and esteem these strategies frequently as need arise. Also, it was recommended that a structure should be put in place to effectively execute financial strategies and also create methodologies and strategies to assess the level of earn marked liquid assets.

5.3 Conclusions

The study concludes that value transacted using ATM has significantly impacted the growth of SACCOs in Kenya. This position is per findings by Abernathy & Utterback (2015).

The study also concludes that value transacted using mobile banking positively and significantly affects growth of SACCOs in Kenya, a position held by Coetzee, Kamau & Njema (2013). The study additionally settles that the coefficient for value transacted using internet banking was 0.795, meaning that value transacted using internet banking positively and significantly affects growth of SACCOs in Kenya in line with findings by Devlin (2015) on e-banking.

The study also concludes that the coefficient for value transacted using EFT was 0.701, meaning that value transacted using EFT positively and significantly affects

growth of SACCOs in Kenya. This agrees with Gonzalez (2008) that electronic banking has seen massive progress and has changed traditional practices in Banking. The study finally concludes that volume of lending to group positively and significantly affects growth of SACCOs in Kenya. This is in agreement with Akello, (2011)'s findings.

5.4 Recommendations for Policy and Practice

The study recommends that local researchers and academicians should increasingly study the financial innovation to add on to the limited literature in the area. This will ensure that there will be adequate local literature that can be used to relate to local situation. Foreign studies may not be reliable to explain the case of the effect of growth of SACCOs in Kenya. The study further recommends that there should be a policy set to standardize the presentation of growth of SACCOs in Kenya. This will make it easier for all the parties interested in using the data from these statements. Further studies can also use primary data to collect data from the SACCOs in Kenya. The study also recommends that future studies should allocate more time to the data collection process and sponsors step in to support the studies. This will make it possible for researchers to study other factors that have an impact on the growth of SACCOs in Kenya that the study did not address.

The study recommends that SACCOs should relate their monetary policy instruments to their financial reports. This should indicate the appropriate effect of each financial innovation. This will make it easier for other researchers to collect and relate data on central bank monetary policy instruments.

The study recommends that SACCOS should put more emphasis on the internal factors to efficiency. These internal factors comprise capital adequacy, asset quality, management efficiency, earnings ability and liquidity management. Monetary policy tools effect will be handled by the management through risk management policies for the firms.

Having established that many of the financial innovation significantly impact on the growth of SACCOs in Kenya, management of SACCOs should still look beyond financial innovation to enhance their growth.

5.5 Limitations of the Study

The major limitations of this study with relative to data availability, the data was tedious to collect and compute as it was in its very raw form. Due to lack of standardization of financial statements from various Saving and Credit Cooperatives in Kenya, data computation was made even harder. In addition, time and resources allocated to this study could not allow the study to be conducted as deeply as possible in terms of other predictor variables for growth of SACCOs in Kenya.

The study had a draw back from most SACCOs which lacked proper reports that showed records of the benefits directly accrued from the central bank monetary policy instruments. This posed a challenge on data collection process.

Another limitation is limited data availability and the uncertain quality of the data used in addition to the fact that the study considered the period between 2011 and 2015, a period of 5 years. Within this period many changes occurred in the money market that the study did not account for such as share splits for some of the SACCOS considered in the study. These unaccounted for issues may have in one way or another

affected the outcomes of the study. However, this effect was not expected for the study since the occurrence of such cases is rare and none was recorded throughout the span of the study, though one share split was observed in the market for a firm not involved in the study. Therefore, the study was limited to the study factors only.

Finally, there was a limitation in developing a model which would enable a researcher to study the relationship between the various variables. Further, the model may not be reliable due to some shortcoming of the regression models. Due to the shortcomings of regression models, other models can be used to explain the various relationships between the variables. When developing this model, there was a great need to define the dependent variables and independent variables. If the model is not correct, the process of analysis may not give the right results. In this case, multiple linear regressions were used since there were multiple variables which required to be studied.

5.6 Suggestions for Further Studies

This study was generalized to SACCOs in Kenya. Therefore, there is a need to narrow down to specific sectors to look at the effect of financial innovation in other sectors, for example manufacturing, agriculture, and construction among others. Studies should also be conducted on the topic using fairly longer time periods (more than 5 years) and small time intervals (say quarterly) of data collection as such studies may be useful in showing the trends as well as the long terms relationship between monetary policy tools and expansion of SACCOs in Kenya.

The study also recommends that further studies explore the link between financial innovation and efficiency of SACCOs in Kenya. The variables in the study influences

the growth of SACCOs in Kenya by only 78.1% leaving an error term of 21.9%.So future studies should be done to involve other variables not tackled in this study.

The study only looked at deposit taking SACCOs registered and licensed by SASRA, further studies should be done to find out the link between financial innovation and performance of non deposit taking SACCOs in Kenya.

REFERENCES

- Abernathy, W. J., & Utterback, J. M. (2015). *Innovation and the Evolution of Technology in the Firm*. Harvard University Press, Cambridge, MA.
- Abor, J. (2005), Effects of Technological Innovations on Banking Services in Ghana. *Journal of Risk Finance*, 5(2), 22-31.
- Akello, J. (2011). Determinants of Financial Innovation and its Impact on Financial Performance of Microfinance Institutions in Nairobi Kenya. Unpublished MBA project, UoN
- Akingbade, G. K. (2011). Relationship between Financial Innovation and Commercial Banks Performance in Nigeria. *Journal of Banking and Finance* 1,277-296
- Arsyad, H. J. (2015). Financial and Nonfinancial Performance Metrics in the Measurement of Performance of Village Credit Institutions and the Determinant Factors in Bali Province Indonesia. *International Journal of Quality and Reliability Management*, 20(4), 458-172.
- Bartle, P. (2012). *Group Formation and Development*. New York: Oxford University Press.
- Beck, Chen & Song (2012). Relationship between Financial Innovation In The Banking Sector And (I) Real Sector Growth, (Ii) Real Sector Volatility, And (Iii) Bank Fragility in Turkey. *Journal of Banking and Finance*, 5(45), 237-239.
- Bryman, A., & Bell, E. (2014). *Business research methods*. New York: Oxford University Press.
- Byrne, N., Power, C., McCarthy, O., & Ward, M. (2010). *The Potential for Impact of Credit Unions on Members' Financial Capability: An Exploratory Study*. Combat Poverty Agency. Working Paper Series.
- Chege, B. K. (2012). *Competitive Strategies Adopted by Equity Bank Limited*, Unpublished MBA project: University of Nairobi
- Coetzee, G., Kamau, K., & Njema, A. (2003). *Taking Banking Services To The People*. Nairobi: Equity bank unit. *Commercial Banks in Kenya*. University of Nairobi unpublished MBA.

- Cooper, D., & Schindler, P. S. (2003). *Business Research Methods*, 9th Edition, New Delhi.
- Devlin, J. F. (2015). A Detailed Study of Financial Exclusion in the United Kingdom, *Journal of Consumer Policy*, 28(56), 75-108.
- Frame, W. S., & White, L. J. (2004). Empirical Studies of Financial Innovations: Lots of Talk, Little Action? *Journal of Economic Literature*, 47, 116–44.
- Goodhue, Dale & Thompson, Ronald. (1995). "Task-Technology Fit and Individual Performance," *MIS Quarterly*, 19(2), 58-92
- Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of Innovations in Service Organizations, *Systematic Review And Recommendations. Journal of Consumer Policy*, 28, 75-108.
- Gweyiii, M. O., & Karanja, J. (2014). Effect of Financial Leverage on Financial Performance of Deposit Taking Savings and Credit Co-operative in Kenya. *International Journal of Finance and Management Sciences*, 4(2), 180-188.
- Heffernan, K. (2008). *Effects of Financial Innovation on Sales Growth Of Financial Firms in UK*. Unpublished MSC project, Natighum University.
- Jabnoun, N., & Al-Tamimi, H. (2013). Measuring Perceived Service Quality at UAE Commercial Banks. *International Journal of Quality and Reliability Management*, 20(4), 458-172.
- Kane, E. J. (1981). Accelerating Inflation, Technological Innovation, and the Decreasing Effectiveness of Banking Regulation. *Journal of Finance*, 36(2), 355-367.
- Kanzi, M. (2013). The Relationship between Adoption of Financial Innovation and Profit Levels of Commercial Banks in Kenya. Unpublished MBA project, UoN.
- Kimaru, J., M. (2013). *The Effect of Product Diversification on the Financial Performance of Microfinance Companies in Kenya*. Unpublished MBA project. University of Nairobi.
- Kothari, C. R. (2004). *Research methodology methods and techniques*. (2nd revised ed.). New Delhi, India. New Age International (P) limited publishers.
- Mabrouk, A., & Mamoghli, C. (2010). Dynamic of financial innovation and performance of banking firms: Context of an emerging banking industry. *International Research Journal of Finance and Economics*, 5(3), 302-347.

- Magali, J. (2015). *Dependent and Independent variables of SACCOs growth in Tanzania*. Dongbei University Press: China.
- Maina, J. M. (2011). *The role of Savings and Credit Cooperatives Societies (SACCOS) in financial Intermediation in Nairobi County*. University of Nairobi unpublished MBA project.
- Makori, J., Munene, C. & Muturi, W. (2013). The challenges facing deposit taking Savings and Credit Cooperative Societies' regulatory compliance in Kenya. A case of the Gusii Region, *Interdisciplinary Journal of Contemporary Research in Business*, 4(12)
- Malhotra, K. F., & Singh, J. J. (2013). The Impact of Internet Banking in India and Discussed Its Implications for the Indian Banking Industry. *Journal of Banking and Finance*, 45(67), 277-296. McGraw Hill.
- Merton, R. C. (1992), Financial innovation and economic performance. *Journal of Applied Corporate Finance* 4(4), 12-22.
- Mosoti, Z., & Masheka, B. (2010). Knowledge Management: The Case of Kenya. *The Journal of Language, Technology, and Entrepreneurship in Africa*, 56(54), 345-370.
- Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative approaches*. Nairobi, Acts Press.
- Mugo, J. G. (2012). *The Effect of Financial Innovation on The Growth of Micro-Finance Institutions in Kenya*. Unpublished MBA project: University of Nairobi.
- Muthui, A. N. (2013). *Effects of Information and Communication Technology on Corporate Strategy Of SACCOs in Nyeri County*. Unpublished master's project. Kenyatta University. Nairobi, Kenya.
- Muthui, A. N. (2013). *Effects of Information and Communication Technology on Corporate Strategy of SACCOs in Nyeri County*. Unpublished Master's Project. Kenyatta University. Nairobi, Kenya.
- Mutuku, B. M. (2014). *The relationship between financial innovation and efficiency of SACCOs in Kenya*. University of Nairobi unpublished MBA project.

- Mwanahawa, L. M. (2012): *The Role of Sacco towards Achieving Millennium Development Goal. The case of Mwalimu SACCO Kenya*. University of Nairobi unpublished MBA Project.
- Mwega, F. (2011). The Competitiveness and Efficiency of the Financial Services Sector. Unpublished MBA project, UoN.
- Njeri, K. O. (2012). *Effects of Financial Innovation on the Financial Performance of Deposit Taking SACCOs in Nairobi County*. Unpublished MBA Thesis, UoN.
- Nyaga, J. (2012). *Cooperatives as Potential Channel for Enhancing Financial Inclusion*. During the Financial Innovation. University of Abuja, Nigeria.
- Nyathira, C. N. (2012). *Financial Innovation and its Effect on Financial Performance of Research in Management*, 5(45), 237-239.
- Oluwatolani, O., Abah, J., & Achimuga, P. (2011)- The Impact of Information Technology in Nigeria banking industry. *Journal of Computer Science and Engineering*. 7(2), 63- 67
- Omondi, B. (2013). Effects of Technological Innovations on the financial performance of the Micro Finance Institutions in Kenya. Unpublished MBA project, UoN
- Onduko, G. (2011). The relationship between Financial Innovation and Financial Performance among Savings and Credit Co-operatives Societies in Nairobi County, Kenya. Unpublished MBA project, UoN.
- Otieno, D. J. (2011). Relationship between Financial Innovation and Financial Performance among Savings and Credit Co-operative Societies in Mombasa County, Kenya. Unpublished MBA project, UoN.
- Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of internet banking services. *International Journal of Bank Marketing*, 19(4), 156-65.
- Rogers, R. (1995). *Agricultural co-operative and market performance in food manufacturing*. USA Co operation Policy Journal
- Schumpeter, J. (2008). *Business Cycles: A Theoretical, Historical, and Statistical Analysis of Capitalist Process*. New York: McGraw Hill.
- Sichei, M. M., & Kamau, A.W. (2012). Demand for Money: Implications For the Conduct of Monetary Policy in Kenya, *International Journal of Economics and Finance*, 56(54), 345-370.

- Silber, L. (1977). Financial Innovation: A Linear Programming Approach. *Journal of Banking and Finance* 67(45), 277-296.
- Sinani, E., Jones, D. C. & Mygind, N. (2007). *Determinants of Firm Level Technical Efficiency: A Stochastic Frontier Approach*. Copenhagen Business School.
- Sinha, N., & Chandra, A. (1992). The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender Participation Matter? *Journal of Political Economy* 106(5), 958-996
- Theuri, Z. (2013). *The Effect of Financial Innovation on Banks Performance: A Case Study of Listed Banks in Kenya*. University of Nairobi Unpublished MBA Project.
- Wingers, D. K., & Albert, U. H. K. (2015). *Impact of Information Technology on the Organization of Companies*. MIT Press, Cambridge, MA.
- Wyman, O. (2012). *Rethinking Financial Innovation: Reducing Negative Outcomes*. New York: Oxford University Press.

APPENDICES

Appendix I: Secondary data Collection sheet

	2011	2012	2013	2014	2015
Membership (number of members)					
Value transacted using ATMs					
Value transacted using Mobile banking					
Value transacted using Internet banking					
Value transacted using EFT					
Volume of Lending to groups					

Appendix II: List of Sacco Societies registered with SASRA as at 31st December 2015

NO.	NAME OF SOCIETY
1.	AFYA
2.	AIRPORTS
3.	ALL CHURCHES
4.	ARDHI
5.	ASILI
6.	BANDARI
7.	BARAKA
8.	BARATON UNIVERSITY
9.	BIASHARA
10.	BINGWA
11.	BORESHA
12.	CAPITAL
13.	CENTENARY
14.	CHAI
15.	CHUNA
16.	COSMOPOLITAN
17.	COUNTY
18.	DAIMA
19.	DHABITI
20.	DIMKES
21.	DUMISHA
22.	EGERTON
23.	ELGON TEACHERS
24.	ELIMU
25.	ENEA
26.	FARIDI
27.	FARIJI
28.	FORTUNES
29.	FUNDILIMA
30.	GITHUNGURI DAIRY & COMMUNITY
31.	GOODWAY
32.	GUSII MWALIMU
33.	HARAMBEE
34.	HAZINA
35.	IG
36.	ILKISONKO
37.	IMARIKA
38.	IMARISHA
39.	IMENTI
40.	JACARANDA
41.	JAMII
42.	JITEGEMEE
43.	JUMUIKA
44.	KAIMOSI
45.	KENPIPE

46. KENVERSITY
47. KENYA ACHIEVAS
48. KENYA BANKERS
49. KENYA CANNERS
50. KENYA HIGHLANDS
51. KENYA MIDLAND
52. KENYA POLICE
53. JOINAS
54. KIMBILIO DAIMA
55. KINGDOM
56. KIPSIGIS EDIS
57. KITE
58. KITUI TEACHERS
59. KMFRI
60. KOLENGE TEA
61. KONOIN
62. KORU
63. KWALE TEACHERS
64. KWETU
65. K-UNITY
66. LAMU TEACHERS
67. LAINISHA
68. LENGO
69. MAFANIAKIO
70. MAGADI
71. MAGEREZA
72. MAISHA
73. MARSABIT TEACHERS
74. MENTOR
75. METROPOLITAN NATIONAL
76. MILIKI SACCO SOOCIETY LTD
77. MMH
78. MOMBASA PORT
79. MUDETE TEA GROWERS
80. OLLIN
81. MURATA
82. MWALIMU NATIONAL
83. MWINGI MWALIMU
84. MWITO
85. NACICO
86. NAFKA
87. NANDI FARMERS
88. NANYUKI EQUATOR
89. NAROK TEACHERS
90. NASSEFU
91. NATION
92. NAWIRI
93. NDEGE CHAI
94. NDOSHA

95. NG'ARISHA
96. NOBLE
97. NRS
98. NUFAIKA
99. NYAHURURU UMOJA
100. NYAMBENE ARIMI
101. NYATI
102. ORIENT
103. PATNAS
104. PRIME TIME SACCO
105. PUAN
106. RACHUONYO TEACHERS
107. SAFARICOM
108. SHERIA
109. SHIRIKA
110. SIMBA CHAI
111. SIRAJI
112. SKYLINE
113. SMARTLIFE
114. SOLUTION
115. SOTICO
116. SOUTHERN STAR
117. SHOPPERS
118. STAKE KENYA
119. STIMA
120. SUKARI
121. SUBA TAACHERS
122. SUPA
123. TAI
124. TAIFA
125. TARAJI
126. TEMBO
127. TENHOS
128. THAMANI
129. TRANSCOUNTIES
130. TRANS NATIONAL
131. TIMES U
132. TOWER
133. UFANISI
134. UKRISTO NA UFANISI WA ANGALICANA
135. UKULIMA
136. UNAITAS SACCO SOCIETY LTD
137. UNI-COUNTY
138. UNITED NATIONS
139. UNISON
140. UNIVERSAL TRADERS
141. VISION POINT
142. WAKENYA PAMOJA
143. WAKULIMA COMMERCIAL

144. WANANCHI
145. WANAANDEGE
146. WANAANGA
147. WASHA
148. WAUMINI
149. WINAS
150. YETU