

**DIGITAL FINANCIAL SERVICES AND FINANCIAL PERFORMANCE OF  
SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KAKAMEGA COUNTY,  
KENYA**

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D53/OL/24421/2014**

**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF BUSINESS IN  
PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF  
DEGREE IN MASTER OF BUSINESS ADMINISTRATION (FINANCE) OF  
KENYATTA UNIVERSITY**

**JUNE, 2021**

## DECLARATION

I declare that, this project is my own original work and has not been presented for award of any degree in any university.

Signed: \_\_\_\_\_ Date \_\_\_\_\_

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This research project has been submitted for the course examination with my approval as the University supervisor.

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## **DEDICATION**

This project is dedicated to my wife Stella for the moral support and encouragement she gave me. To my daughter Caira Praise Simiyu, my two sons Joseph Baraka Simiyu and Jabin John Simiyu for their co-operation during my studies. God bless them all.

## **ACKNOWLEDGEMENT**

First of all, I am honestly grateful to the Almighty God for aiding me to undertake this study.

I am also very grateful to my supervisor, Dr. Ngaba Dominic K. for his supervision, patience and excellent ideas in writing this proposal. I am similarly grateful to the department of Accounting and Finance, School of Business, Kenyatta University for their continued support. I am indebted a great deal of appreciation to the members of my family for their consistent honorable support all through my study period, and appreciating the demand of the course in regards to time and resources.

God Bless you all

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## ABBREVIATIONS AND ACRONYMS

<b>ATM</b>	Automated Teller Machines
<b>BOSA</b>	Back Office Service Activity
<b>CAMELS</b>	Capital adequacy, Asset quality, Management, Earnings ability, Liquidity management and Solvency
<b>CBK</b>	Central Bank of Kenya
<b>DTM</b>	Deposit Taking Microfinance
<b>DTS</b>	Deposit Taking Saccos
<b>EFT</b>	Electronic Funds Transfer
<b>FOSA</b>	Front Office Service Activity
<b>GDP</b>	Gross Domestic Product
<b>ICT</b>	Information Communication Technology
<b>MFI</b>	Microfinance Institution
<b>NPL</b>	Non –performing loans
<b>PEARLS</b>	Protection, Effective financial structures, Asset Quality, Rates of Return and cost, Liquidity and Signs of growth
<b>R&amp;D</b>	Research and Development
<b>ROA</b>	Return on Asset
<b>ROE</b>	Return on Equity
<b>RoK</b>	Republic of Kenya
<b>SACCO</b>	Savings and Credit Cooperative
<b>SASRA</b>	SACCO Societies Regulatory Authority
<b>SME</b>	Small and Medium Enterprises

<b>SPSS</b>	Statistical Package for Social Sciences
<b>TOE</b>	Technology, Organisational and Environmental Context
<b>WCOCU</b>	World Council of Credit Unions

## **OPERATIONAL DEFINITION TERMS**

<b>Debit card</b>	A debit card is a payment card that deducts money directly from a consumer's checking account to pay for a purchase. Debit cards eliminate the need to carry cash or physical checks to make purchases.
<b>Credit card</b>	A card issued by a financial company giving the holder an option to borrow funds, usually at point of sale. Credit cards charge interest and are primarily used for short-term financing.
<b>Digital Funds transfer</b>	Is the digital transfer of money from one bank account to another, either within a single financial institution or across multiple institutions, via computer-based systems, without the direct intervention of bank staff
<b>Digital Financial Services</b>	Broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances and insurance. Digital channels refers to the internet, mobile phones, Automated Teller Machines, Point of Sale terminals among others
<b>Financial Performance</b>	Achievement of the company's financial objectives for a certain period covering the collection and allocation of finance measured by capital adequacy, liquidity, solvency, efficiency, leverage and profitability
<b>Internet banking</b>	Is adigital payment system that enables customers of a bank or other financial institution to conduct a range of financial

transactions through the financial institution's website

**Mobile banking**

Service provided by a bank or other financial institution that allows its customers to conduct financial transactions remotely using a mobile device such as a smartphone or tablet.

**Savings and Credit**

Registered society whose principal objectives are to encourage

**Cooperative Societies**

thrift among its members and to create a source of credit to its members

## ABSTRACT

Savings and Credit Co-operative Societies (Saccos) in Kenya have realised a tremendous growth in the subsector and are investing huge amount of their scarce financial resources in digital technology to enhance services delivery and offer a wide variety of products and services range, increased membership mobilisation and size, ensure better structure and effective financial performance. Digital financial Services as used in the Saccos industry is as a result of Information Communication Technology revolution commonly referred to as digital commerce. Many Saccos are steadily changing from manual banking system of operations to providing digital Financial (e-banking) services that include internet banking, M-banking and Automated Teller machine support. The adoption of digital financial Services by the Saccos is a strategic attempt to deal with increased cut throat competition from traditional banking institutions and non-banking financial institutions, to cut costs and add value to their services in order to optimise benefits to the shareholders. Despite the fact that Saccos have rapidly adopted digital financial services to provide services, and that they drive a huge section of the financial sector savings of the economy, they have experienced various challenges such as uncertainty and risk due to digital financial services. The study sought to establish the influence of digital financial services on the financial performance of SACCOS in Kakamega County, Kenya. The specific objectives was to determine the effect of the mobile banking, internet banking, use of credit cards and digital funds transfer on the financial performance of SACCOS in Kakamega County, Kenya. The research was guided by three theories of innovation and technology: Diffusion of Innovation Theory, The Theory of Task-Technology Fit Theory and the Technological context, Organisational context and Environmental context Theory. The study used a descriptive research design. The population of study were staff at the three SACCOS operating in Kakamega County. This consisted of 162 respondents who are the staff of the SACCOS. A sample of 49 respondents was taken which forms 30% of the target population which shall be evenly spread across the three SACCOS. The primary data was collected by use of self-administered semi-structured questionnaire. Collected data was analysed through descriptive and inferential statistics by the use of SPSS. Findings were presented by use of tables, frequencies, percentages, means and standard deviation. The study found that the financial performance of the SACCOS was significantly influenced by the digital financial services instituted by the SACCO managements. They demonstrated to have reliable mobile banking system where most of their customers had enrolled on the mobile banking platform and most of customer queries and updates were sorted via the mobile platform. Given the limitations and findings of this study, the researcher recommends that since there exists a positive relationship between digital financial services and bank performance and that e-banking has brought services closer to bank customer's hence improving banking industry performance, SACCOS must also enhance the dynamics of the sector and embrace digital banking fully and extensively. Mobile banking faces various challenges among them being, system delays by the mobile money transfer service providers, slow processing of transactions, high transactions costs, limit on the amount of money that can be withdrawn in a day and fraud.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background of the Study**

Over the years and especially since the year 2000, tremendous change has occurred in the financial sector most triggered by inventions in the world of technology, financial system, legal frameworks and customer needs and preferences. Most of the big banks and SACCOs that used to adopt digital innovations in the past to meet the changing customer needs have either reexisted or rebranded; and the current sector giants are only a decade old. This reflects the role of digital banking services in ensuring firm survival, competitiveness and optimal financial performance from increased financial inclusion at the backdrop of the global financial crisis (Kimani, 2016)

According to Korir (2014) the major impetus for digital strategies such as mobile banking and online banking has been competition, globalization, deregulation and technological advancement. The survival in this sector has been majorly driven by frequent and constant adoption of digital banking services to increase financial performance. With these digital practices, financial sector players have significantly enhanced their service quality to meet the changing needs of customer, increased financial inclusion hence their survival and profitability. Given the adoption of such innovations is capital intensive, and its failure rate is very high, banks and SACCOs greatly struggle in designing and implementing the best suited digital banking services in their markets (Lawrence, 2010)

Savings and Credit Co-operative Societies (Saccos) in Kenya have realised a tremendous growth in the subsector and are investing huge amount of their scarce financial resources in

digital technology (IT) to enhance services delivery and offer a wide variety of products and services range, increased membership mobilisation and size, ensure better structure and effective financial performance (Koduk, 2015). Digital banking as used in the Saccos industry is as a result of Information Communication Technology (ICT) revolution commonly referred to as digital commerce (Ovia, 2001). Many Saccos are steadily changing from manual banking system of operations to providing digital banking (e-banking) services that include internet banking, M-banking and Automated Teller machine support (ATM). Mouawad and Kleiner (1996) posit that the adoption of digital banking by the Saccos is a strategic attempt to deal with increased cut throat competition from traditional banking institutions and non-banking financial institutions, to cut costs and add value to their services in order to optimise benefits to the shareholders.

Even though there is a rapid adoption of digital banking taking place in Saccos industry in Kenya, it is coming much later relative to the use of digital banking in the traditional banking institutions. The Saccos adopting digital banking are applauded by the citizens and the government of Kenya since digital banking is considered a way of improving productivity and a means of gaining competitive advantage (Oyugi, 2014). Saccos are also considered to have a vital economic value in terms of productivity and growth, employment generation and dynamics, community development, equity promotion or innovation. From this perspective, better financial performance of Saccos enhances the effectiveness and sustainability of Saccos (Aduda & Kingoo, 2012). It is therefore envisaged that huge benefits that include effective service delivery, cost reduction and accessibility will accrue to the many clients, firms and regulators that adopt digital banking (Koduk, 2015).



While digital banking has efficiently facilitated tasks of Saccos and made services less expensive, investment in automation consumer huge rare financial resources (Atavachi, 2015). Therefore a sound analysis of costs and risks associated with digital banking is needed to avoid harm on Sacco's financial performance.

In Kenya Saccos are registered under the Sacco Societies Act (2008). Under the Act (2008), Saccos are licensed, regulated and promoted by the Sacco Societies Regulatory Authority (SASRA). The Act (2008) provides minimum requirements for operation and prudent standards necessary for Saccos that take deposit to minimise risk and ensure stability in funds of the Saccos. The Saccos are classified into those Saccos that take deposit (DTSSs) and those that do not take deposit. Saccos that take deposit give members savings and credit services in form of basic banking services. Such Saccos accept deposit, provide payment services and operate quasi banking services known as Front Office Services Activities (FOSA). FOSAs are part of Saccos' e-banking activities which are licensed by SASRA and are aimed at improving customer services, cutting costs and ensuring effective operation of Saccos (SASRA Report 2014). As a norm, Saccos begin as non-Deposit Taking Saccos and eventually grow to deposit taking Saccos where they provide a variety of financial services to their members (Kenya Financial Stability Report, 2014).

The study aimed at assessing the relationship between digital banking and financial performance of Deposit Taking Savings and Credit Co-operative Societies in Kakamega County, Kenya. The study used three theories: Rogers's Innovation Diffusion Theory, Task-Technology Fit Theory and Technological context, Organisational context and

Environmental context theory to explain and understand the underlying factors in adoption of innovation such as digital banking by Saccos.

### **1.1.1 Digital Financial Services**

Digital financial services can be described in terms of introducing new instruments of finance, services or practice, introduction of new users for money, discovering new channels of funds, introducing new ways of handling daily operations or coming up with a new organization, while all these endeavours are becoming part of existing financial institutions and the emergence of phenomenal growth of new institutions of finance and new markets.

Digital banking strategies enable banks to advance their ability to beat competition, lower their affinity to risk and manage risk better in case it happens while at the same time responding to the needs of their clients satisfactorily and respond to the market changes (Laeven & Levin, 2010). Lawrence (2010) posits that digital banking services are concerned with designing, developing and implementing of new ideas and processes, where they result in the creation of new resolutions with regard to existing financial problems. Innovative financial technology is the creation and popularization of new financial instruments, technologies, markets and institutions (Haliassos, 2013). It includes institutional, product and process innovation. Financial innovation can be defined as a positive change in financial intermediation or financial system (Juhakam, 2003). Financial innovation can also be referred as a process of creating and marketing of new types of securities. It is the life blood of efficient and responsive capital market (Onduko, 2013).

According to Mosongo, Gichana, Ithai and Nguta (2013) financial innovations lowers the transaction cost of transferring funds from lower yielding money balances to higher yielding

alternatives. Therefore, with financial innovation market participants attempt to minimize risk and to maximize returns. Changes in international financial environment and increasing integration of domestic environment lead to financial innovation.

Product innovation refers to innovations of new or modified financial services such as the introduction of new deposit accounts, credit card, debit card, leasing and hire purchase insurance among other financial products (Haliassos, 2013). Introducing new products to the market is an important way by which organizations adapt or respond to increasing global competition, rapidly changing customer demands, technological advancements, and shorter product life cycles (Brown & Eisenhardt, 2009). Developing new products is of the highest importance for the survival of firms. This not only refers to really new products, but firms also need to invest in modifying their existing products. Small and medium-sized companies such as SACCOs are no exception to this rule. Entrepreneurs embrace product innovations in order to respond to changes in market demand or to improve organization efficiency (Maulana, 2016).

The need for convenient ways of accessing financial resources beyond the conventional norms has seen steady progress in the scope of innovations emanating from exploitation of these fairly new technologies. From the customer's perspective, internet banking facilitates a convenient and effective approach to manage personal finances, as it is accessible 24 hours a day and 365 days in a year without visiting the bank and from any locations (Rotchanakitumunai & Speece, 2003). Technology enables provision of digital services. For instance, a website can be viewed locally or internationally, enabling customers to find out more details about the products offered. It therefore reaches a larger target audience. Aduda

and Kingoo (2012) concur that with online banking, individuals can check their account balances and make payments without having to go to the banking hall. They do this at their convenience using the ATM cards or over the internet at the comfort of their homes. Venansius (2014) thus notes that this helps reduce operational costs and improve service delivery.

### **1.1.2 Financial Performance**

Financial performance is a determinant of the accountability of an organisation for the results of its activities, policies, and operations quantified for a defined financial period (VanHome & Wachowics, 2008). The World Council of Credit Unions (WCOCU) developed performance monitoring system that entails Protection, Effective financial structures, Asset Quality, Rates of Return and cost, Liquidity and Signs of growth ( PEARLS} as financial performance monitoring system that act as guidelines or standards for credit unions and other savings institutions to measure and monitor performance. PEARLS uses a set of financial ratios to measure vital areas of savings institutions and credit unions operations. The PEARLS system gives key disciplines of proper financial stewardship (Branch & Klaehn, 2008).

There are other financial monitoring and performance evaluation systems such as Capital adequacy, Asset quality, Management, Earnings ability, Liquidity management and Solvency (CAMELS) Model that help measure performance of firms. The CAMELS model utilises qualitative measures of assessment and indicators which are specific to microfinance institutions to measure performance of a given Sacco (Cifuentes, 2008).

The reason for determining financial performance of a firm is to allow decision makers judge the aftermath of an enterprise strategies and operations in unbiased monetary terms. This enables determination of a firm's overall effectiveness over a specified financial period. This can facilitate comparison with similar firms in the same industry in an aggregated fashion.

The key ratios that are utilised to assess financial performance of a business entity are Liquidity ratios, Solvency ratios, Profitability ratios and Efficiency ratios (Julie et al., 2010). Profitability ratios indicate management's ability to convert sales into profits and cash flow, financial ratios shows ability of a firm financially, because they determine a firm's leverage relative to its resources (assets) and equity (Bryn et al., 2010). Liquidity ratios measure the ability of a firm to meet its short term financial obligations. Efficiency ratios show how effectively a firm is utilising its enterprise assets. Sacco's financial performance refer to whether a Saccos has performed better over a defined period of time to achieve its targeted aims.

Financial statements of a business entity give information on the performance. Devinaga & Rahia, (2010) noted that to determine how well a banking institution is doing, the results must be considered in terms of return on assets (ROA) and return on equity (ROE). Richard Loth, (1999) ROA ratio shows how better the management is utilising the firm's assets to generate profits. The higher the return, the more efficient management is utilising its assets to generate profits.

In this study, profitability measure; the ROA will be used to assess Sacco's financial performance. These profitability ratios help indicate management efficiency and rate of returns. Financial performance of Saccos is evaluated by SASRA reports that evaluate the

Saccos' performance financially in the Sacco subsector using audited financial statements and reports provided by individual Saccos annually as part of the legal requirements.

In the study, financial performance of Saccos will be measured by way of computation of ROA over a period of two years (2014/2015). ROA will be calculated by dividing Sacco's annual earnings by their total assets. This is displayed in percentage. In the context of this indicator, e-banking in performance measurement leans mainly on operating activities of a firm. ROA puts into consideration the resources (assets) utilised to facilitate enterprise tasks. It will enable establish a company's ability to produce sufficient return on these resources rather than simply indicating returns on sales. ROE on the other hand as a performance measure focuses on returns to the shareholders of the firm. It helps obscure a lot of likely challenges as organisations may embark on approaches to uniquely retain a better ROE for a short period and obscure diminishing performance of the enterprise basics (Hagel, Brown & Division, 2010).

### **1.1.3 SACCOs in Kakamega County**

Savings and Credit Cooperative Societies in western Kenya are growing and showing improvement in performance in the region. However the greatest development has been the adoption of digital banking services in their operations, a step that has seen Saccos enhance operational efficiency and service delivery to clients, (Afubwa et al., 2013). Atavachi (2013) notes that most Saccos in Kenya are investing their scarce financial resources in digital banking services to enhance performance. This gives them a competitive advantage in the Saccos subsector in Kenya.

Majority of SACCOs' growth in Kenya and more especially in Western Kenya is dismal. 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 (SASRA, 2015). 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 (Fin Access, 2009). SACCOs have been losing their market share irrespective of their geographical location in the country compared to other financial institutions (Nyaga, 2012).

## **1.2 Statement of the Problem**

Despite the fact that Saccos have rapidly adopted digital financial services to provide services, and that they drive a huge section of the financial sector savings of the economy, they have experienced various challenges such as uncertainty and risk due to digital banking (Koduk, 2015). The financial performance has not necessarily gone up with such innovative technological overtures. There is a basic assumption that adoption of digital banking is a survival strategy by Saccos Subsector of engaging in technologically innovative ways of managing and running the sector to ensure sustainability (Ahimbisibwe, 2012). 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 (Fin Access, 2009). SACCOs have been losing their market share irrespective of their geographical location in the country compared to other financial institutions (Nyaga, 2012). This topic has not been adequately researched. Moreover the correlation between digital banking and financial performance of Saccos using digital banking is still ambiguous, perhaps understandable.

Digital transactions have facilitated efficient customer centred services globally. Sathye (2005) carried a comparative study on using internet transactions banking to enhance service delivery in order to improve major Credit Union's financial performance in Australia. He concludes that automated transactions banking have an insignificant impact on financial performance and risk, but posits that digital transactions should be exploited as an instrument to enhance service delivery in credit unions.

Mwau (2013) studied the effect of financial sector liberation in Kenya and the financial performance of Saccos. He concludes that there is no clear indication of a link between the good financial performance of Saccos and financing diversification. This study did not assess the digital banking and financial performance as digital banking may be an innovative strategy of investment. Oyugi (2014), carried out a research on the effect of automated



services on performance of SASRA licensed Saccos in Nairobi and Kiambu Counties in Kenya. He concludes that there is positive effect of automation on financial performance of Saccos that adopted internet banking. This study did not link digital banking to financial performance of Saccos in Kenya.

Digital banking enhances Sacco's performance. Koduk (2015) conducted a survey study to assess the effect of digital banking on financial performance of Saccos in Nairobi County. He established a positive correlation between digital banking and financial performance of Saccos. Notably most of these studies have not been done in Western Kenya.

The previous studies have mainly examined the effect of digital banking on banks' financial performance and not Saccos. The research did not link digital banking to financial performance of Saccos, in particular Kakamega County which has few SACCOs. The previous studies also concentrated on one year, mainly 2013. This study therefore sought to establish the digital banking services employed by SACCOs in Kakamega County and how they influenced their financial performance.

### **1.3 Objectives of the Study**

#### **1.3.1 General Objective**

The general objective of the study was to determine the influence of digital banking services on the financial performance of SACCOs in Kakamega County, Kenya.

#### **1.3.2 Specific Objectives**

The study was guided by the following specific objectives:

- i. To evaluate the influence of mobile banking services on the financial performance of SACCOs in Kakamega County.
- ii. To determine the effects of internet banking on the financial performance of SACCOs in Kakamega County.
- iii. To examine the influence of credit cards on the financial performance of SACCOs in Kakamega County.
- iv. To investigate the effect of digital funds transfer on the financial performance of SACCOs in Kakamega, Kenya

#### **1.4 Research Hypotheses**

The study sought to test the following hypotheses;

- H<sub>01</sub>: Mobile banking has no significant effect on the financial performance of SACCOs in Kakamega County
- H<sub>02</sub>: Internet banking has no significant effect on the financial performance of SACCOs in Kakamega County
- H<sub>03</sub>: Use of credit cards has no significant effect on the financial performance of SACCOs in Kakamega County
- H<sub>04</sub>: Digital funds transfer facility has no significant effect on the financial performance of SACCOs in Kakamega County, Kenya?

#### **1.5 Significance of the Study**

The results of the study provided management of Saccos with reliable information resource for effective decision making to achieve effectiveness and efficiency in Sacco's performance.

The study findings would be of value to practicing consultants in the financial sector to provide effective services to their clients from the Saccos subsector which will help enhance operations of Saccos in Kenya.

The adoption of digital banking brings risks related to digital banking tasks, which influence the overall risk profile of banking. In relation to the above, it was felt that the study findings would be useful to financial firms to formulate appropriate policy on risk management. The study findings will also provide useful information to the shareholders and customers on emerging digital banking services that improve services delivery.

### **1.6 Scope of the Study**

This study was done among 3 Saccos in Kakamega County, Kenya. These included the Wevarity Sacco, Mudete Tea SACCO and the Kakamega Teachers SACCO. The population consisted of staff in the SACCOs' headquarters in Kakamega Town. The study sought to determine the role of mobile, internet, use of cards and digital funds transfer on the performance of the SACCOs. The study assessed the performance of the SACCOs for a period of five years (2013-2017) . The study respondents were the 162 employees among the three SACCOs.

### **1.7 Limitations of the Study**

The respondents approached were reluctant in giving information fearing that the information sought would be used to intimidate them or paint a negative image about them or their SACCO. Some even turned down the request to fill questionnaires. The study had an introduction letter from the University and assured them that the information they gave would be treated confidentially and it was purely for academic purposes.

The researcher could also encounter problems in eliciting information from the respondents as the information required was subject to areas of feelings, emotions, attitudes and perceptions, which couldn't be accurately quantified and/or verified objectively. The researcher encouraged the respondents to participate without holding back the information they had since the research instruments was not bearing their names.

### **1.8 Organization of the Study**

This research project comprises of five chapters. Chapter one involve background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, and significance of the study, limitation of the study, assumptions of the study and organization of the study. Chapter two reviews literature which include theoretical review, empirical review, research gaps and the conceptual framework. Chapter three deals with research methodology which explains the research design, target population, sampling design, rationale for sample selection, data collection instruments, questionnaires, validity of the research instrument, reliability, data analysis and ethical considerations.

Chapter four deals with the research findings and discussions of the study. Chapter five gives a summary ,conclusions of the research and the study's recommendations.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter presents the literature review on digital banking services employed by various organizations and how they have contributed to financial performance. It summarizes the information from other scholars who have carried out their research in the same field of study. The chapter presents the theoretical review, empirical review, summary, the research gaps and the conceptual framework.

#### **2.2 Theoretical Review**

Theoretical framework is a collection of interrelated concepts such as in a theory to guide research work as it determines the items for measurement and the statistical relationship being studied (Kotler & Gary, 2005). The research will be guided by three theories of innovation and technology: Diffusion of Innovation Theory, The Theory of Task-Technology Fit Theory and the Technological context, Organisational context and Environmental context Theory.

##### **2.2.1 Rogers Innovation Diffusion Theory**

Rogers's innovation Diffusion Theory (Rogers, 1995), explains how new technological innovations are accepted. This theory proposes that there are five characteristics of an innovation that affect acceptance of the innovation. The features include complexity, compatibility, testability, observability and relative advantage of the innovation. Compatibility is the extent to which an innovation is perceived as difficulty to comprehend and use. Rogers posit that the meaning of the innovation may not be understood clearly by

the potential adopters or perceived as complex thereby hindering the use or adoption of the innovation (Greenhalgh, 2004). If the key users perceive an innovation as being simple to use, the innovation will be more easily adopted (Greenhalgh, 2004). With regard to digital banking, this theory is very important and applicable in modern financial services business of Saccos. Innovation is vital in order for a Sacco to improve its performance.

### **2.2.2 Task-Technology Fit Theory**

This theory explains the matching of the abilities of technology to the demands of the job, that is, IT to support a job (Goodhue and Thompson, 1995). The theory proposes that there are four major constructs that determine IT use: Technology characteristics, Task features which jointly affect the third one, Task-Technology Fit, which later on influences the outcome variable, either performance or usage. The model hypothesizes that Information technology will only be adopted if the functions necessary are accessible to the users and fit the tasks of the users. In this case, management of Saccos must act rationally to adopt IT tools and work methods that will help them accomplish the task efficiently with minimum cost and maximum net benefits.

### **2.2.3 Technology, Organisational and Environmental Context (TOE)**

Tornatzky and Fleischer (1990), developed a clear framework that identifies three key aspects of a firm that influences the adoption process of a new technology by a firm. These aspects are Technological situation, Organisational situation and Environmental situation. The technological situation refers to both internal and outside factors relevant to the company that can influence utilisation of technology. The management of an enterprise must be aware of a number of factors and take into consideration the availability of valuable competencies.

The TOE introduces a new vital component; that of the environment. The environment presents strength, constraints, opportunities and threats for technological innovation. It is therefore vital when making a decision on whether to adopt or not to adopt and innovation such as e-banking, Saccos consider Technological, Organisational and Environmental contexts.

#### **2.2.4 Financial Intermediation Theory**

The theory regarding financial intermediation was developed starting with the 60's in the XX century, the starting point being the work of Gurley and Shaw (1960). The financial intermediation theory is based on the theory of informational asymmetry and the agency theory. In principle, the existence of financial intermediaries is explained by the existence of the following attributable factors: high cost of transaction, inadequate information in useful time; and the method of regulation.

The unique factor in the studies regarding financial intermediation is constituted by the argument regarding informational asymmetry. This asymmetry can be of type: ex ante generating the so called problem of adverse selection; concomitant generating the moral hazard(principal and agent relationship); or ex post leading to the need of applying some costly verification and auditing procedures or even the forced execution of the debtor. The informational asymmetry generates imperfections of the market, deviations from the theory of perfect markets in an Arrow -Debreu sense. Arrow-Debreu perfect markets synopsis of a near heaven, which depicts that if they is an heaven, then the financial intermediaries would not be useful in the economy at large, but since we are still on earth, it is certain that there

will be imperfection and incomplete information which serve has a benefit-cost effect for intermediaries and market.

According to the model of perfect financial markets in the neo -classical theory, they fulfill the following conditions: no one participant can influence the prices; then placement/borrowing conditions are identical for all participants; there are no discriminatory fees; the lack of competitive advantages at the level of participants; all financial securities are homogeneous, dividable and transactional; there are no transaction costs for obtaining information or of insolvency; all participants have immediate aces to the complete information regarding the factors and elements that can influence the current or future value of the financial instruments.

Many of these imperfections generated by informational asymmetry lead to the emergence of some specific forms of transaction costs. The financial intermediaries have emerged exactly to eliminate, at least partially, these costs. For example, Diamond and Dybvig (1983) consider banks as being a coalition of the depositors that ensures those who save up against the risks that could affect their state of liquidity. Leland and Pyle (1977) define financial intermediaries as a coalition that deals with the distribution of information. Diamond (1984) shows that these financial intermediaries action as authorized agents of those who save up and that they can achieve scale economies. Thus those who save up trust their available funds to these intermediaries in order to be invested in whichever projects they consider viable, the depositors having the possibility to withdraw their funds at any time under the pre - established conditions.



The studies regarding informational asymmetry approach especially the problematic of relationships between bank and creditors, respectively bank and debtors. In the relationship between bank and borrower the main aspect analyzed is the function of the selection bank and the tracking of the granted loans, as well as the problematic of adverse selection and moral hazard. In the relationship between bank and depositors (creditors) a special attention is given to the factors that determine depositors to withdraw their money before due date.

The second approach for the financial intermediation is founded on the argument of transaction cost. This approach was developed by Benston and Smith Jr. (1976) and by Fama (1980). Unlike the first approach this one does not contradict the theory of perfect markets. This approach is based on the differences between the technologies used by the participant. Thus intermediaries are perceived as being a coalition of individual creditors or debtors who exploit the scale economy at the level of transaction technologies. The notion of transaction cost does not comprise just the costs regarding the transfer costs for the amounts or of foreign exchange, but also those for research, evaluation and monitoring thus the role of financial intermediaries is to transform the characteristics (due date, liquidity, etc.) of assets, the so called qualitative transformation of financial assets, offering liquidity and opportunities for diversification of placements.

The third approach of financial intermediaries is based on the method of regulation of the monetary creation, of saving and financing of economy. This approach was developed by Guttentag, and Lindsay (1968) and by Merton (1995). The method of regulation influences the liquidity and solvability of intermediaries. Diamond and Rajan (2000) show that the

regulations regarding the capital of intermediaries influence their “health”, the ability for refinancing and the method for recovering debts.

### **2.3 Empirical Literature Review**

This section analyses the studies done by other researchers in the area of digital banking services and financial performance of firms. The relationship between adoption of mobile banking, internet banking, use of credit cards and digital funds transfer are the areas of focus.

#### **2.3.1 Mobile Banking and Financial Performance**

Soroor and Toosi (2005) observed that the recognition of mobile banking service in m-commerce depended upon the cost effectiveness introduced to the traditional banking system. Mobile banking offered customers reduced service charges than traditional banking charges. This was an incentive offered by the banks to use the technology and to attract customers, to increase their profit margin. The repercussions of mobile technology were not necessarily transformed into financial profits, but often passed to the customer in the form of reduction in prices. Adoption of mobile banking enhanced the performance of a bank in terms of reduction in costs, such as transaction, administration and promotion costs.

Tchouassi (2012) sought to find out whether mobile phones really work to extend banking services to the unbanked using empirical Lessons from Selected Sub-Saharan Africa Countries. This study sought to discuss how mobile phones could be used to extend banking services to the unbanked, poor and vulnerable population. The study noted that poor, vulnerable and low-income households in Sub-Saharan Africa (SSA) countries often lacked access to bank accounts and faced high costs for conducting basic financial transactions. The

mobile phone presented a great opportunity for the provision of financial services to the unbanked. In addition to technological and economic innovation, policy and regulatory innovation was needed to make these services a reality.

Ching et al. (2011) studied the factors affecting Malaysian mobile banking adoption from the point of an empirical analysis. This study aimed at extending the Technology Acceptance Model (TAM) to investigate mobile banking acceptance in Malaysia. More specifically, the objective of this study was to examine the relationships between constructs of perceived usefulness, perceived ease of use, social norms, perceived risks, perceived innovativeness, and perceived relative advantages towards behavioural intention in adopting mobile banking. The findings of this study revealed that perceived usefulness, perceived ease of use, relative advantages, perceived risks and personal innovativeness were the factors affecting the behavioral intention of mobile users to adopt mobile banking services in Malaysia. Meanwhile, the social norms were the only factor found to be insignificant in this study.

Mutua (2011) studied the impact of mobile banking on financial performance of commercial banks in Kenya. The study concluded that there is a weak but positive relationship between mobile banking and financial performance of commercial banks in Kenya. This could be attributed to the trends which showed that financial performance of commercial banks was affected majorly by macro-economic variables like post-election violence, inflation and foreign exchange rates fluctuations among other macro-economic variables.

Aduda and Kingoo (2012) investigated the relationship between e-banking and performance of Kenyan banking systems. The study revealed that there exist a positive relationship

between e-banking and bank performance since e-banking has brought services closer to bank customer's hence improving banking industry performance.

Okiro and Ndung'u (2013) studied the impact of mobile and internet banking on performance of financial institutions in Kenya. This study focused on financial institutions as a whole. They surveyed a representative sample of financial institutions within Nairobi and found that commercial banks had the highest rate of usage of internet banking among the financial institutions sampled. SACCOs are slowly adopting internet banking, while micro finance institutions have not yet adopted internet banking. The study found that mobile banking faces various challenges among them being, system delays by the mobile money transfer service providers, slow processing of transactions, high transactions costs, limit on the amount of money that can be withdrawn in a day and fraud.

### **2.3.2 Internet Banking and Financial Performance**

DeYoung et al. (2006), carried out a study on performance of internet banking community banks in USA. He concludes that the adoption of internet banking services improves services delivery and performance. The banks that used internet services had improved bank's profitability of community banks, in particular, increased income from deposit service charges.

Santomer and Seater (1997), investigated the effect of internet use on financial services in Europe using a cross sectional survey on 55 micro finance institutions. The study findings indicated a significant positive correlation between internet use and increased accessibility to financial services. Internet use was also attributed to the movement of deposits from banks account to money market deposit account, enhanced use of higher average wage rates from

bank employees and brokered deposits. In another study on an examination into the impact of online banking on community banks (Kegan et al., 2005), the results showed that banks which provided online banking services performed better than those banks that did not use internet banking services.

Sathye (2005) did a comparative study on performance of the main Credit Unions in Australia that used internet banking and determined that internet related banking had insignificant effect on performance and risk. Cicirett Hassan and Zazzra (2009), established a significant correlation between offering internet banking services and Italian banks' performance. The results showed a significant negative correlation between the adoption of internet activities and banks' risks.

Egland et al. (1998) estimated the number of US banks offering Internet banking and analyzed the structure and performance characteristics of these banks. It found no evidence of major differences in the performance of the group of banks offering Internet banking activities compared to those that do not offer such services in terms of profitability, efficiency or credit quality. However, transactional Internet banks differed from other banks primarily by size. In contrast to the results of Egland et al. (1998), Furst et al. (2000) found that banks in all size categories offering Internet banking were generally more profitable and tended to rely less heavily on traditional banking activities in comparison to non-Internet banks.

Kegan et al. (2005) examined the impact of online banking applications on community banks performance in America. The study used a structural equation model to create an online banking index and an econometric model to evaluate bank performance. A survey of ten

community banks was conducted. The results indicated that banks that provide extensive online banking services tend to perform better than those who lag behind. In addition, online banking helps community banks improve their earnings ability as measured by return on equity and improve asset quality.

Ovia (2001) concluded that banking in Nigeria has increasingly depended on the deployment of Information Technology and that the IT budget for banking is by far larger than that of any other industry in Nigeria. He contended that On-line system has facilitated Internet banking in Nigeria as evidenced in some of them launching websites. He found also that banks now offer customers the flexibility of operating an account in any branch irrespective of which branch the account is domiciled.

Maiyo (2013) conducted a study on the effect of digital banking on the performance of commercial banks in Kenya. The study found that the adoption of e-banking has enhanced performance of commercial banks due to increased efficiency, effectiveness and productivity. The study revealed that fees and commission from debit cards, credit cards and mobile banking has a significant effect on returns on asset whereas fees and commission from internet banking as well as the amount of money that commercial banks invest in digital banking to install, train staff and maintain the platforms has no or minimal effect on return on assets.

### **2.3.3 Credit Cards and Financial Performance**

Oyugi (2014) did a research study on the effect of automated services on performance of SASRA licensed Saccos in Nairobi and Kiambu Counties, Kenya. The study sampled 45 Saccos in Nairobi and Kiambu Counties. The results of the study showed that the majority of

Saccos use internet services and the main service was ATM. The study established a significant positive relationship between digital banking and financial performance of Saccos in Kenya. Koduk (2015), conducted a research on influence of financial innovations on financial performance of Saccos in Nyeri County, Kenya. 56 operating Saccos in Nyeri County were sampled. The results of the study concluded that telephone and internet banking are the main drivers of financial performance of Saccos

The use of the credit cards in the society has affected not only traditional consumers, but also vulnerable groups, such as college students, senior citizens, and disabled citizens. College students have grown up in the age of credit, becoming independent consumers earlier in life, and constantly exposed to new products and services available through credit cards. Along with technology and the expansion of the internet, they become an appealing demographic group for credit card companies and financial institutions for a variety of reasons. Solicitation on college campuses has caused concern among college officials, consumer advocacy groups and legislators (Robb & Sharpe, 2009).

For many international travelers and conference attendees, life would be far more difficult without the ability to pay by plastic card for goods and services consumed. Most airlines, railway networks, car hire firms, hotels and restaurants now accept payment by plastic cards as do many retailers and other merchant outlets and by doing so they reduce the need for consumers to carry cash in the local currency or traveller's cheques. The major international card associations of Visa, Euro pay/ MasterCard, American Express, Diners club and JCB all seek to have their payment cards accepted in the widest possible range of merchant outlets. In need Visa and MasterCard, the largest two major card associations, each have over 12

million acceptance locations throughout the world, who take payment by the credit (Steve,1995).

#### **2.3.4 Digital Fund Transfer and Financial Performance**

Oluwatolani, Joshua and Philip (2011) explained that digital 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).

Ombati et al. (2010), tried to establish the relationship between technology and service quality in the banking industry in Kenya. A cross-sectional survey design was conducted with a sample size of 120 customers. The findings revealed that there is a direct relationship between technology and service quality which can translate to performance of the bank.

Sonja (2010) researched on the effects of computerization on saving and credit cooperatives in Uganda and found out that Technology is likely to increase the efficiency, outreach and sustainability of microfinance institutions. The study found out that technology has positively influenced SACCOs by making daily work easier and quicker and recommended that as technology evolves, more training is required to ensure necessary human resource capacity.



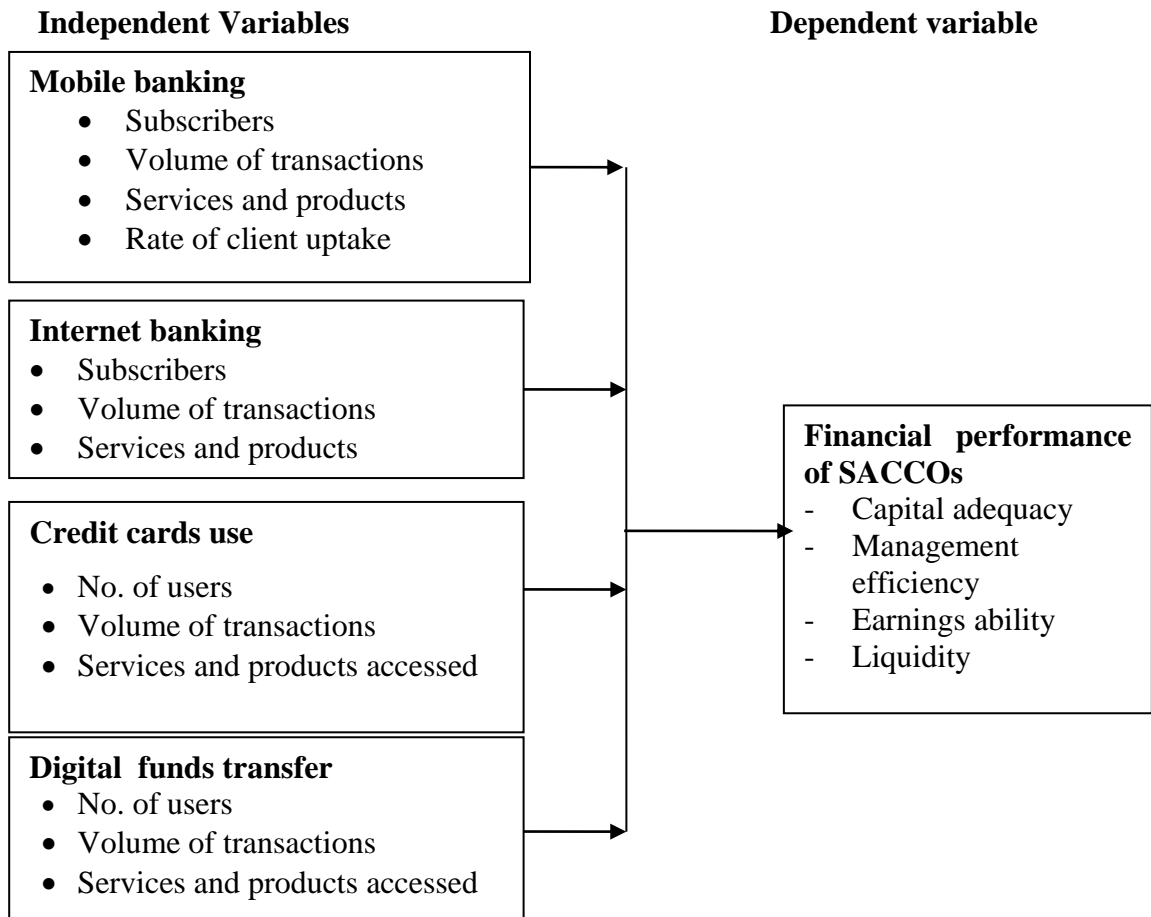
## 2.4 Research Gaps

**Table 2.1: Research Gaps**

<b>Author</b>	<b>Topic</b>	<b>Findings</b>	<b>Research gap</b>
Ching et al (2011)	Factors affecting Malaysian mobile banking adoption	Perceived usefulness, perceive ease of use, relative advantages, perceived risks and personal innovativeness affected the behaviorual intention of mobile users to adopt mobile banking services	The study focused on factors hindering mobile banking adoption in Malaysia while the current study focuses on the effect of mobile banking on financial performance of SACCOs.
DeYoung et al (2006)	Performance of internet banking among community banks in the USA	Intente banking services improve service delivery and performance of banks	The study looked at how internet banking is doing among banks whiel the current study looks at the correlational effct of internet banking on SACCO performance
Maiyo (2013)	Effects of digital banking on the performance of commercial banks in Kenya	Adoption of e-banking has enhanced bank performance due to increased efficiency, effectiveness and productivity	The study focused on commercial banks while the current looks at e-banking and performance of SACCOs in Kakamega County, Kenya
Murui (2007)	Challenges facing use of credit cards in the financial sector in Kenya	Limited marketing, and information among clients and poor pricing	The study did not focus on the influence of the use of debit and credit cards on the performance of SACCOs in Kenya but only the challenges on the use
Donner and Tellez (2001)	Mobile banking and economic development in South Africa	Mobile banking has made transactions faster, cheaper and convenient to clients hence spurring development	This study only looked at the blanket development but not specifically the SACCO sector which the current study intends .

## 2.5 Conceptual Framework

A conceptual framework is a basic structure that consists of certain abstract blocks which represent the observational, the experiential and the analytical/ synthetic aspects of a process or system being conceived. It is a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. The interconnection of independent and dependent variables completes the framework for certain expected outcomes. The independent variables include; mobile banking, internet banking, use of credit cards and digital funds transfer while the dependent variable is financial performance of SACCOs in Kakamega County.



**Figure 2.1: Conceptual Framework**

*Source: Researcher, (2021)*

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology that was used to carry out the study. It further describes the type and source of data, the target population and sampling methods and the techniques that was used to select the sample size. It also describes how data will be collected, analyzed and presented.

#### **3.2 Research Design**

Research design is the basic plan that indicates an overview of the activities that are necessary to execute the research project. This research was studied through the use of a descriptive research design. According to Cooper and Schindler (2003), a descriptive study is concerned with finding out the what, where and how of a phenomenon. According to Mugenda and Mugenda (2003), a descriptive research design main aim is to evaluate and report things the way they are about the population under study, it also help to describe some of the characteristics that the researcher has no control over.

Descriptive research aims to accurately and systematically describe a population, situation or phenomenon. It can answer what, where, when and how questions but not why questions. The goal of a descriptive research is to describe a phenomenon and its characteristics. It is therefore the most appropriate for this study.

#### **3.3 Target Population**

A population is defined as a complete set of individuals, cases or objects with some common observable characteristics, (Mugenda & Mugenda, 2003). The population for this study was the staff at the three SACCOs operating in Kakamega County, who were 162 in number

according to KUSSCO (2017) annual report and are homogenous. The target population for the study was therefore 162 respondents.

**Table 3.1: Target Population**

<b>SACCO</b>	<b>Population</b>	<b>Percentage</b>
Wevarcity SACCO	31	19.14
Mudete Tea SACCO	49	30.24
Kakamega Teachers SACCO	82	50.62
<b>Total</b>	<b>162</b>	<b>100</b>

*Source: KUSSCO, 2019*

### **3.4 Sampling Procedure**

Sampling techniques provide a range of methods that facilitate in reducing the amount of data that needs to be collected by considering only data from a sub-group rather than all possible cases or elements. According to Mugenda and Mugenda (2003), a sample of 25-30% is statistically significant to draw conclusions for a given study. This study therefore sampled 49 respondents from the population to inform the research findings which formed 30% of the target population.

**Table 3.2: Sample Size**

<b>SACCO</b>	<b>Population</b>	<b>Rate</b>	<b>Sample Size</b>
Wevarcity SACCO	31	0.3	9
Mudete Tea SACCO	49	0.3	15
Kakamega Teachers SACCO	82	0.3	25
<b>Total</b>	<b>162</b>	<b>0.3</b>	<b>49</b>

*Source: Researcher, 2021*

### **3.5 Data Collection Instrument**

With regard to the role of digital banking services on the financial performance of SACCOs in Kakamega County the study used a semi-structured survey questionnaire administered to each member of the sample population. The questionnaire was carefully designed and tested with a few members of the population for further improvements. This was done in order to enhance its validity and accuracy of data to be collected for the study.

### **3.6 Data Collection Procedure**

The researcher administered the questionnaire individually to all respondents of the study. The study exercised care and control to ensure all questionnaires issued to the respondents were received and to achieve this, the study maintained a register of questionnaires, which was sent and was received. The questionnaire was administered using a drop and pick later method.

### **3.7 Validity and Reliability of the Study**

#### **3.7.1 Reliability**

Cronbach's Alpha was applied to measure the co-efficient of internal consistency and therefore the reliability of the instrument. In order to check reliability of the results, the study used Cronbach's alpha methodology, which is based on internal consistency. Cronbach's alpha measures the average of measurable items and its correlation. SPSS software was used to verify the reliability of collected data. Overall scales' reliability of the present situation and the desirable situation was tested by Cronbach's alpha, which should be above the acceptable level of 0.70 (Hair et al., 1998). Alpha above the value of 0.7 is considered acceptable (George & Mallery, 2003). Construct validity technique will be used to test the validity of the instrument.

### 3.7.2 Validity

Validity is a measure of the degree to which data obtained from the instrument accurately and meaningfully represent the theoretical concept and in particular how the data represents the variables. Where validity has been established, any inferences made from such data will be accurate and meaningful (Mugenda & Mugenda, 2003). The validity of a study increases by using various sources of evidence (Yin, 2003). The first phase of this research was to employ the econometric technique to investigate the relationship between digital banking services and financial performance of SACCOs in Kakamega County. This issue confirmed the validity of the data and relevant results.

### 3.8 Operationalization and Measurement of Variables

**Table 3.3: Operationalization and Measurement of Variables**

Variable	Nature of variable	Operational indicators	Measurement
Mobile banking	Independent	<ul style="list-style-type: none"> <li>• Subscribers</li> <li>• Volume of transactions</li> <li>• Services and products</li> <li>• Rate of client uptake</li> </ul>	5 -point Likert-type scale Ratio
Internet banking	Independent	<ul style="list-style-type: none"> <li>• Subscribers</li> <li>• Volume of transactions</li> <li>• Services and products</li> </ul>	5 -point Likert-type scale Ratio
Credit cards use	Independent	<ul style="list-style-type: none"> <li>• No. of users</li> <li>• Volume of transactions</li> <li>• Services and products accessed</li> </ul>	5 -point Likert-type scale Ratio
Digital funds transfer	Independent	<ul style="list-style-type: none"> <li>• No. of users</li> <li>• Volume of transactions</li> <li>• Services and products accessed</li> </ul>	5 -point Likert-type scale Ratio
Financial performance of SACCOs	Dependent	<ul style="list-style-type: none"> <li>• Capital adequacy</li> <li>• Management efficiency</li> <li>• Earnings ability</li> <li>• Liquidity</li> </ul>	5 -point Likert-type scale Ratio

*Source: Researcher (2021)*

Table 3.3 below shows the variables operationalization matrix. It summarizes the indicators, measures and scale of dependent (Financial performance) and independent variables, mobile banking, internet banking, credit card use and digital funds transfer.

### 3.9 Data Analysis and Presentation

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Quantitative data collected was analyzed by the use of descriptive statistics using SPSS (Version 22) and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This was done by tallying up responses, computing the percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS (Version 22) to communicate research findings. Content analysis was used to test data that is qualitative in nature or aspect of the data collected from the open ended questions. In addition, the study conducted a multiple regression analysis. The multiple regression equation is;

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3+ \beta_4X_4+\varepsilon$$

Where;

Y= Financial Performance of SACCOs in Kakamega County

$\beta_0$  is the regression coefficient,

$\varepsilon_i$  - error term (extraneous variables)

$X_1$  – Mobile banking

$X_2$ – Internet Banking

$X_3$ –use of credit cards

$X_4$ –Digital funds transfer

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are the slopes of the regression equation,

However, qualitative data was analyzed using a likert scale of 1 to 5 based on weights for the degree of influence of independent variables on the dependent. 1 for Not at all, 2 for Low extent, 3 for moderate extent ,4 for greater extent and 5 very great extent

### **3.10 Ethical Considerations**

Informed consent was obtained from all those participating in the study. Those not willing to participate in the study were under no obligation to do so. Respondents' names weren't indicated anywhere in the data collection tools for confidentiality and information gathered was only to be used for the purposes of this academic study. The necessary research authorities were consulted and permission granted. The refereed materials and sources were cited accordingly.



## CHAPTER FOUR

### RESEARCH FINDINGS AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents data analysis, findings and discussion. The purpose of this study was to determine the influence of digital banking services on the financial performance of SACCOs in Kakamega County, Kenya. This chapter is organized into sections based on the research variables; mobile banking, internet banking, use of credit cards, digital funds transfer and the financial performance. Demographic information is also presented as well as the response rate.

#### 4.2 Response Rate

This study targeted all the staff at the three SACCOs operating in Kakamega County, who are 162 in number according to KUSSCO (2017) annual report as shown in Table 4.1.

**Table 4.1: Response Rate**

SACCO	Target Population	Achieved Responses	
		Achieved Responses	(%)
Wevarity SACCO	9	8	88.89
Mudete Tea SACCO	15	12	80.00
Kakamega Teachers SACCO	25	21	84.00
Total	49	41	83.67

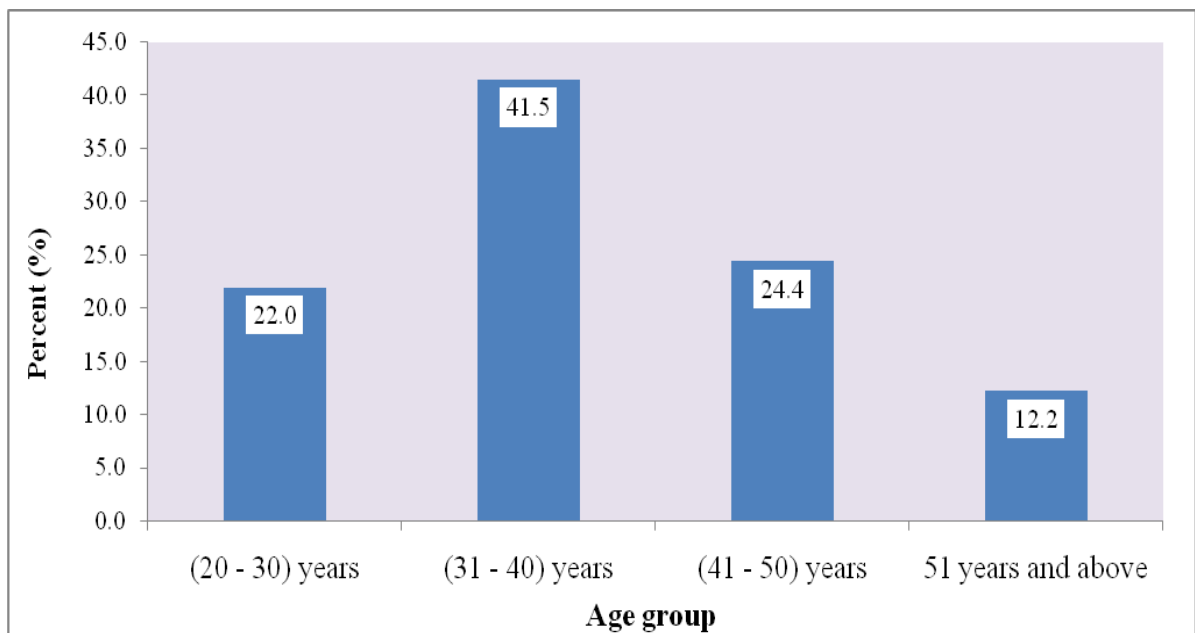
As shown in Table 4.1, the overall achieved response rate was 83.67 percent. Individually, Wevarity SACCO, Mudete Tea SACCO and Kakamega Teachers SACCO had a response rate of 88.89 percent, 80.0 percent and 84.0 percent respectively. Nulty (2008) recommends a

response rate of at least 65% for quantitative data if the responses are to be considered adequately unbiased and therefore the response rate for this study was adequate.

### 4.3 Demographic and General Information

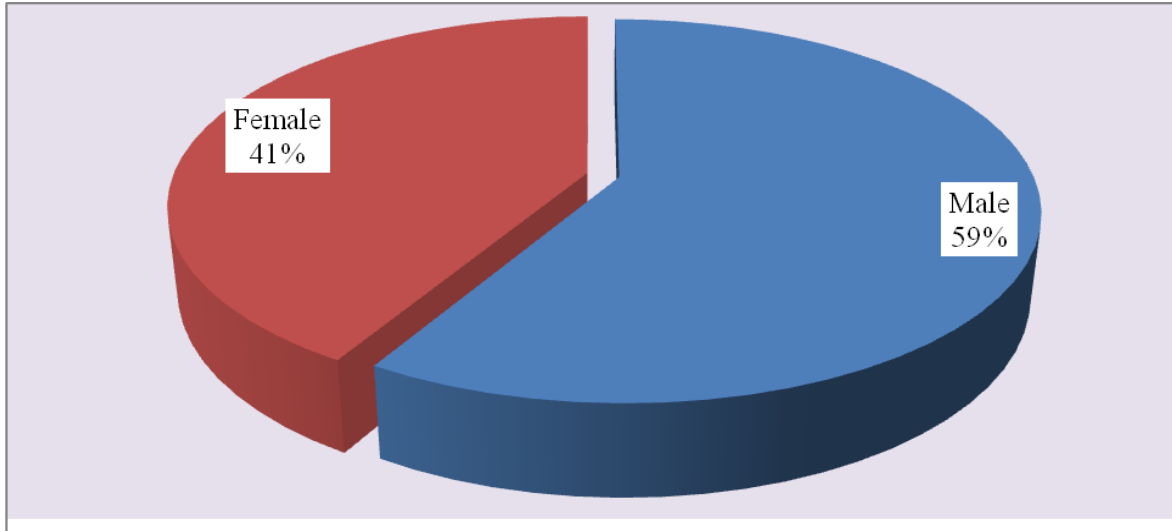
This section was based on the respondents' age distribution (Figure 4.1), gender (Figure 4.2), the period worked in the SACCO (Figure 4.3), the services offered by the SACCOs (Figure 4.4), the respective SACCOs number of employees (Table 4.2), the SACCOs main customers (Figure 4.5), and the digital banking services available in the SACCO (Figure 4.6).

**Figure 4.1: Age Distribution**



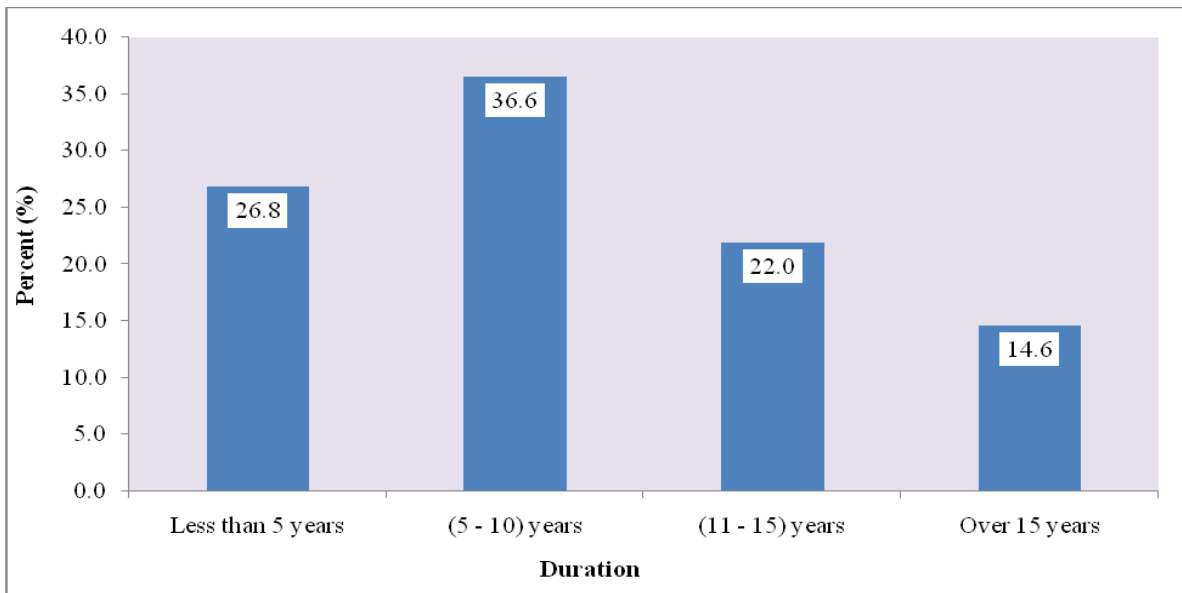
As shown in Figure 4.1, 41.5 percent of the respondents were aged between the age of 31 and 40 years, 24.4 percent aged between 41 and 50 years while 22.0 percent aged between the age of 20 and 30 years. Others (12.2%), aged 51 years and above. This indicates that majority of the staff at the three SACCOs operating in Kakamega County aged between 20 and 50 years.

**Figure 4.2: Gender of Respondents**



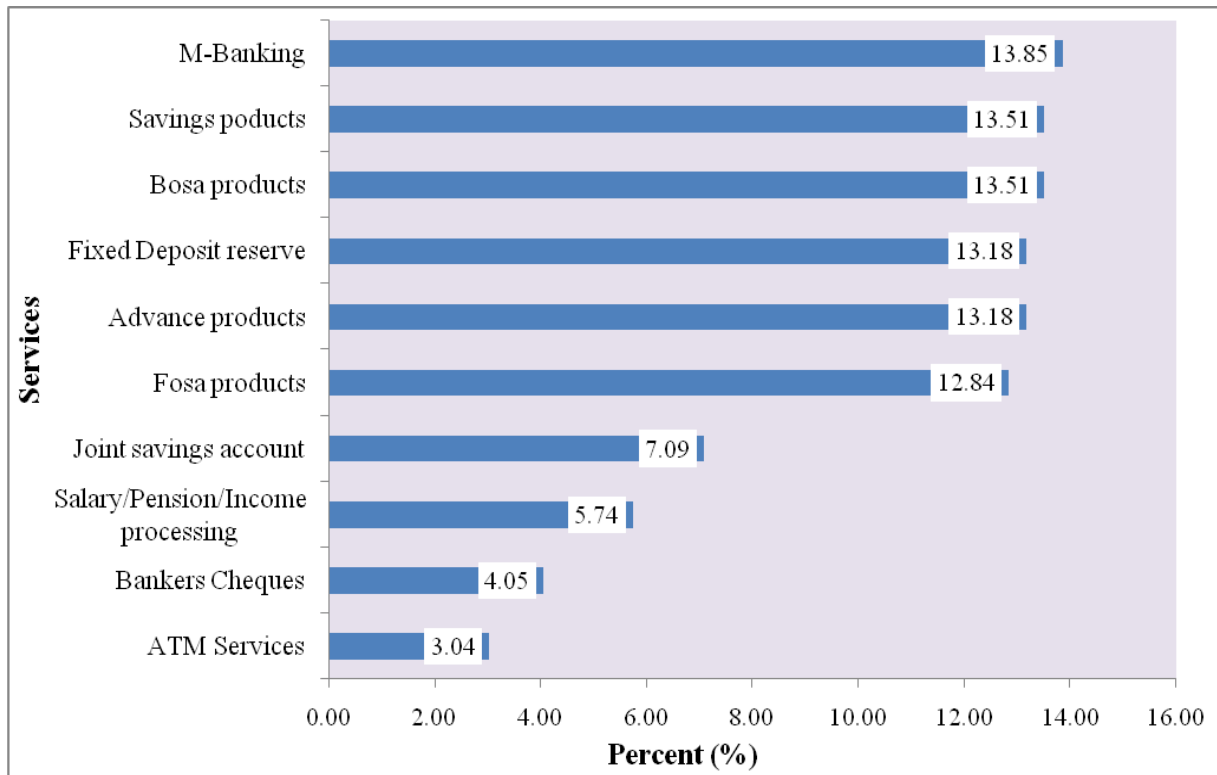
Out of the interviewed respondents, 59 percent were male while 41 percent were female as presented in Figure 4.2. This is an indication that majority of the staff at the three SACCOs operating in Kakamega County were male.

**Figure 4.3: Period Worked in the SACCO**



As depicted by Figure 4.3, 36.6 percent of the respondents had been in their respective SACCOs for a period of 5 to 10 years, 26.8 had served for a period of less than 5 years and 22.0 percent had served for a period of 11 to 15 years. Others (14.6%) had served in their SACCOs for more than 15 years. These findings have an implication that a majority of the staff at the three SACCOs operating in Kakamega County had served in their respective SACCOs for a period of less than 10 years.

**Figure 4.4: Services Offered by the SACCOs**



As shown in Figure 4.4, 13.85 percent and 13.51 percent of the services offered were M-Banking and Savings products services. Other services revealed to be offered were Bosa products (13.51%), fixed deposit reserves (13.18%), advance products (13.18%), and Fosa products (12.84%). On the other hand, 7.09 percent of the services offered were disclosed to be joint savings services while 5.74 percent, 4.05 percent and 3.04 percent disclosed were

salary/pension/income processing, banker’s cheques and ATM services. This implies that the most prevalent services offered by three SACCOs operating in Kakamega County were M-banking, Savings, Bosa products, Fosa products, and fixed deposit reserves services.

**Table 4.2: Number of Employees**

SACCO	Employees	Percent (%)
Wevarcity SACCO	31	19.14
Mudete Tea SACCO	49	30.24
Kakamega Teachers SACCO	82	50.62
Total	162	100.00

As shown in Table 4.2, Kakamega Teachers SACCO had 82 employees, Mudete Tea SACCO had 49 while Wevasity SACCO had 31 employees.

**Figure 4.5: SACCOs Main Customers**

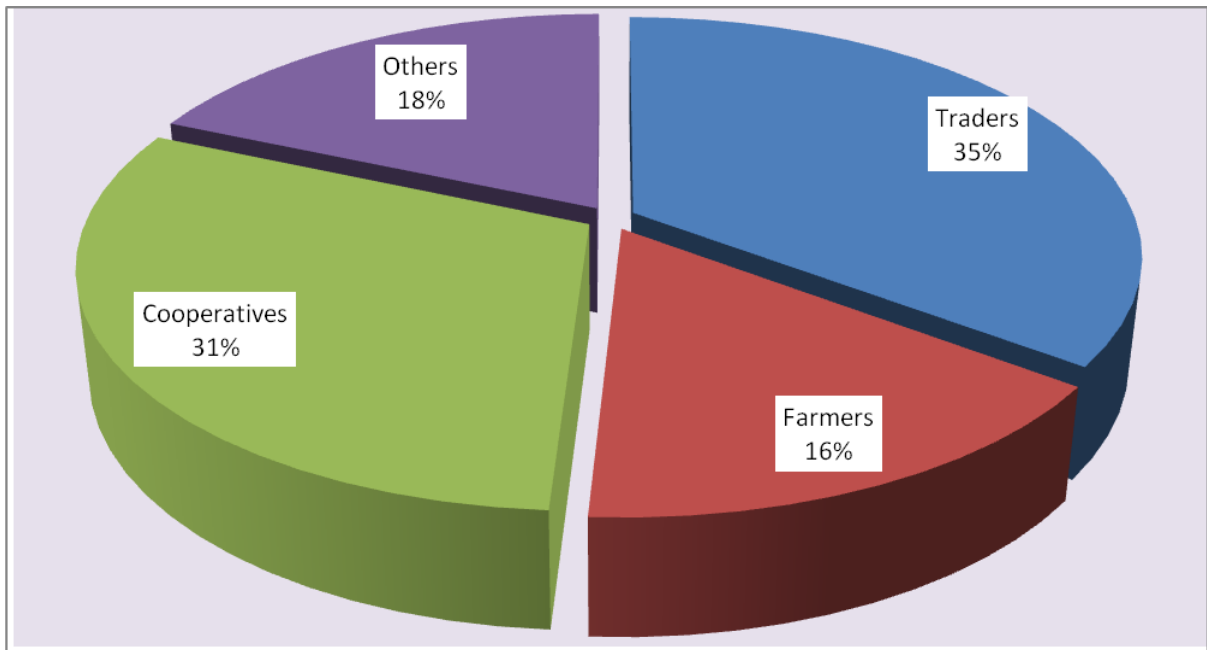
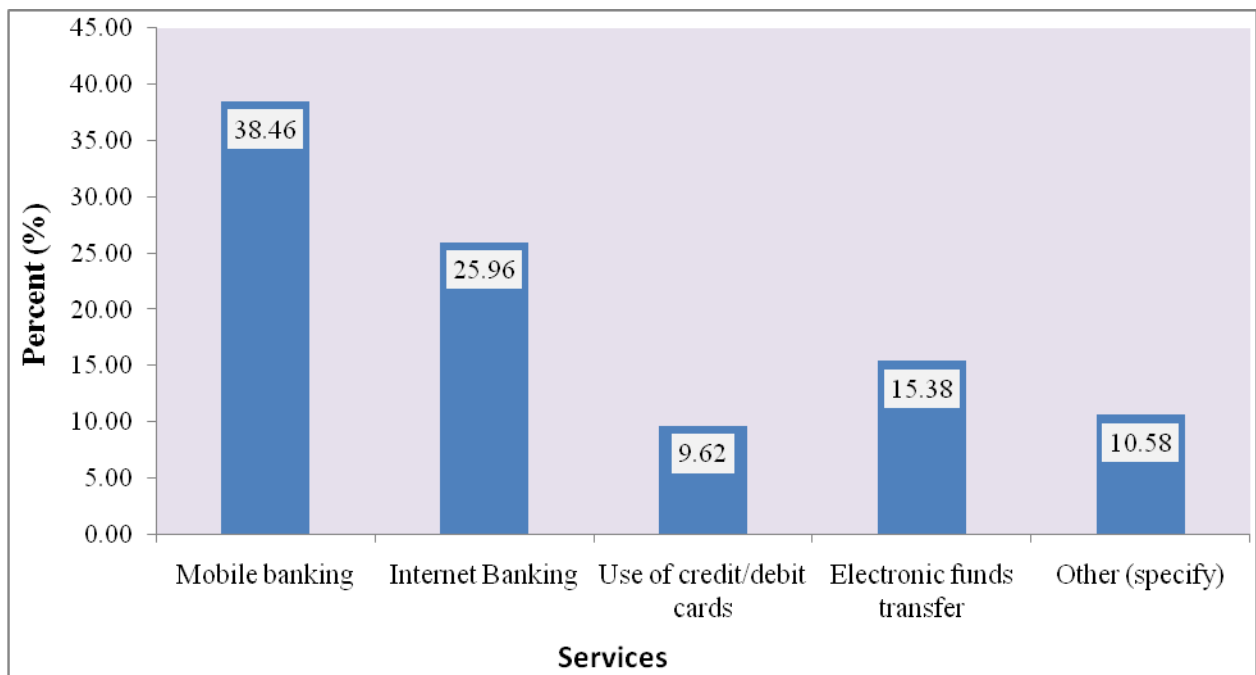


Figure 4.5 reveals that 35 percent of the major customers were traders, 31 percent were cooperatives while 16 percent were farmers. The SACCOs also had other customers at 18 percent of their pool of customers. This is an indication that majority of the staff at the three SACCOs operating in Kakamega County advocated traders, cooperatives and farmers as their **most prevalent customers.**

**Figure 4.6: Digital Banking Services Available in the SACCO**



Out of all the digital banking services as shown in Figure 4.6, 38.46 percent were the mobile banking services while 25.96 percent were internet banking services. Electronic funds transfer (15.38%) and use of credit/debit cards (9.62%) were on the other side still available digital banking services. Other digital banking services (10.58%) were also availed by the SACCOs. This is a clear indication that the most prevalent digital banking services offered by the three SACCOs operating in Kakamega County were mobile banking and internet banking.

## 4.4 Descriptive Statistics

### 4.4.1 Mobile Banking and Financial Performance

This section of the questionnaire sought to examine the influence of mobile banking on the financial performance of the three SACCOs operating in Kakamega County as shown in Table 4.3.

**Table 4.3: Mobile Banking**

<b>Indicator</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Standard Deviation</b>
a) The SACCO has a vibrant mobile banking system	0.0	0.0	7.3	46.3	46.3	4.390	0.620
b) Most customers have enrolled on the mobile banking platform	0.0	0.0	9.8	31.7	58.5	4.488	0.667
c) Most of the transactions are done via the mobile platform	0.0	0.0	2.4	56.1	41.5	4.390	0.535
d) Customer queries and updates are done via the mobile	0.0	0.0	4.9	46.3	48.8	4.439	0.586
e) The volume of transactions on the mobile platform is high	0.0	0.0	12.2	48.8	39.0	4.268	0.663
f) Most customers prefer mobile banking due to its convenience	0.0	0.0	4.9	48.8	46.3	4.415	0.583
g) Our mobile banking system is reliable	0.0	0.0	0.0	34.1	65.9	4.659	0.474
<b>Average</b>	<b>0.0</b>	<b>0.0</b>	<b>5.9</b>	<b>44.6</b>	<b>49.5</b>	<b>4.436</b>	<b>0.590</b>

As revealed in Table 4.3, the respondents disclosed that their mobile banking system was reliable (mean = 4.659, standard deviation = 0.474) and that most of their customers had enrolled on the mobile banking platform (mean = 4.488, standard deviation = 0.667). Furthermore the respondents affirmed that customer queries and updates were done via the mobile (mean = 4.439, standard deviation = 0.586) as well as most customers preferring to use mobile banking due to its convenience (mean = 4.415, standard deviation = 0.583). Soroor and Toosi (2005) observed that the recognition of mobile banking service in m-commerce depended upon the cost effectiveness introduced to the traditional banking system. Mobile banking offered customers reduced service charges than traditional banking charges. This was an incentive offered by the banks to use the technology and to attract customers, to increase their profit margin.

Additionally, the respondents agreed that their respective SACCOs had a vibrant mobile banking system (mean = 4.390, standard deviation = 0.620) and most of the transactions were done via the mobile platform (mean = 4.390, standard deviation = 0.535). They also consented that the volume of transactions on the mobile platform was high at a mean of 4.268 and a standard deviation of 0.663. On average the influence of mobile banking on the financial performance of the SACCOs had a mean of 4.436 and a standard deviation of 0.590). Ching et al. (2011) studied the factors affecting Malaysian mobile banking adoption from the point of an empirical analysis and revealed that perceived usefulness, perceived ease of use, relative advantages, perceived risks and personal innovativeness were the factors affecting the behavioral intention of mobile users to adopt mobile banking services in Malaysia.



From these findings, it indicate that majority of the staff at the three SACCOs operating in Kakamega County disclosed that they had a reliable mobile banking system and most of their customers had enrolled on the mobile banking platform. They also affirmed that customer queries and updates are done via the mobile while customers prefer using mobile banking due to its convenience to walking to the SACCO offices.

#### 4.4.2 Internet Banking and Financial Performance

This section aimed at discussing the influence of internet banking on the performance of the three SACCOs operating in Kakamega County as shown in Table 4.4.

**Table 4.4: Internet Banking**

<b>Indicator</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Standard Deviation</b>
a) The SACCO has a reliable internet connectivity	0.0	0.0	0.0	39.0	61.0	4.610	0.488
b) The SACCO has an interactive and user friendly website	0.0	0.0	31.7	43.9	24.4	3.927	0.745
c) Most transactions are done via the internet	0.0	4.9	26.8	41.5	26.8	3.902	0.850
d) The number of customers using the internet banking system is high	0.0	4.9	24.4	41.5	29.3	3.951	0.854
e) The volume of transactions over the internet system has increased	0.0	7.3	17.1	39.0	36.6	4.049	0.909
f) Internet banking platform is secure, reliable and convenient to clients	0.0	4.9	19.5	34.1	41.5	4.122	0.889
g) The SACCO interacts, updates and informs clients via the internet platform	0.0	7.3	14.6	31.7	46.3	4.171	0.934
<b>Average</b>	<b>0.0</b>	<b>4.2</b>	<b>19.2</b>	<b>38.7</b>	<b>38.0</b>	<b>4.105</b>	<b>0.810</b>

As shown in Table 4.4, the respondents strongly agreed that their respective SACCOs had a reliable internet connectivity (mean = 4.610, standard deviation = 0.488) and the SACCO interacts, updates and informs clients via the internet platform (mean = 4.171, standard deviation = 0.934). Additionally, they affirmed that internet banking platform was secure, reliable and convenient to clients (mean = 4.122, standard deviation = 0.889). DeYoung et al. (2006), carried out a study on performance of internet banking community banks in USA. He concludes that the adoption of internet banking services improves services delivery and performance. The banks that used internet services had improved bank's profitability of community banks and in particular, increased income from deposit service charges.

They also disclosed that the volume of transactions over the internet system had increased (mean = 4.049, standard deviation = 0.909), the number of customers using the internet banking system was high (mean = 3.951, standard deviation = 0.854), the SACCO had an interactive and user friendly website (mean = 3.927, standard deviation = 0.745), and most transactions were done via the internet (mean = 3.902, standard deviation = 0.850). On average, the influence of internet banking on the performance of the SACCOs had a mean of 4.105 and standard deviation of 0.810. However, Egland et al. (1998) estimated the number of US banks offering Internet banking and analyzed the structure and performance characteristics of these banks. It found no evidence of major differences in the performance of the group of banks offering Internet banking activities compared to those that do not offer such services in terms of profitability, efficiency or credit quality. However, transactional Internet banks differed from other banks primarily by size. In contrast to the results of Egland et al. (1998), Furst et al. (2000) found that banks in all size categories offering Internet banking were generally more profitable and tended to rely less heavily on traditional banking activities in comparison to non-Internet banks.

These findings imply that majority of the staff at the three SACCOs operating in Kakamega County disclosed that their respective SACCOs had reliable internet connectivity and the SACCO interacts, updates and informs clients via the internet platform while they as well affirmed that internet banking platform was secure, reliable and convenient to clients.

#### 4.4.3 Use of Credit Cards and Financial Performance

This section of the questionnaire sought to discuss the influence of the use of credit cards on the financial performance of the three SACCOs operating in Kakamega County as shown in Table 4.5.

**Table 4 5: Use of Credit Cards**

<b>Indicator</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Standard Deviation</b>
a) The SACCO has working ATMs	0.0	0.0	17.1	39.0	43.9	4.268	0.733
b) Our enterprise has rolled out credit cards	0.0	17.1	39.0	41.5	2.4	3.293	0.773
c) Most customers have credit cards	0.0	0.0	19.5	56.1	24.4	4.049	0.661
d) Use of credit cards is convenient to customers	0.0	0.0	4.9	61.0	34.1	4.293	0.552
e) The volume of transactions via credit cards has increased	0.0	0.0	2.4	26.8	70.7	4.683	0.515
f) Most SACCO products can be accessed via the credit cards	0.0	0.0	2.4	41.5	56.1	4.537	0.545
g) Customers know how to use the credit cards	0.0	0.0	0.0	43.9	56.1	4.561	0.496
<b>Average</b>	<b>0.0</b>	<b>2.4</b>	<b>12.2</b>	<b>44.3</b>	<b>41.1</b>	<b>4.240</b>	<b>0.611</b>

As shown in Table 4.5, the respondents strongly agreed that the volume of transactions via credit cards had increased (mean = 4.683, standard deviation = 0.515), customers knew how to use the credit cards (mean = 4.561, standard deviation = 0.496) and most SACCO products could be accessed via the credit cards (mean = 4.537, standard deviation = 0.545). Additionally, they affirmed that the use of credit cards was convenient to customers (mean = 4.293, standard deviation = 0.552), the SACCOs had working ATMs (mean = 4.268, standard deviation = 0.733), and most customers had credit cards (mean = 4.049, standard deviation = 0.661). They also moderately agreed that their enterprise had rolled out credit cards (mean = 3.293, standard deviation = 0.773). On average the influence of the use of credit cards on the financial performance of the SACCOs had a mean of 4.240 and a standard deviation of 0.611. Robb & Sharpe, 2009 found that the use of the credit cards in the society has affected not only traditional consumers, but also vulnerable groups, such as college students, senior citizens, and disabled citizens. College students have grown up in the age of credit, becoming independent consumers earlier in life, and constantly exposed to new products and services available through credit cards. Along with technology and the expansion of the internet, they become an appealing demographic group for credit card companies and financial institutions for a variety of reasons. Solicitation on college campuses has caused concern among college officials, consumer advocacy groups and legislators. Contrary, Koduk (2015), also conducted a research on influence of financial innovations on financial performance of Saccos in Nyeri County, Kenya where 56 operating SACCOs in Nyeri County were sampled. The results of the study concluded that telephone and internet banking are the main drivers of financial performance of Saccos

This is an indication that majority of the staff at the three SACCOs operating in Kakamega County applauded that that the volume of transactions via credit cards had increased, customers knew how to use the credit card and most of the SACCO products could be accessed via the credit cards.

#### 4.4.4 Digital Funds Transfer and Performance

This section sought to determine the influence of digital funds transfer on the financial performance of the three SACCOs operating in Kakamega County as shown in Table 4.6.

**Table 4.6: Digital Funds Transfer**

<b>Indicator</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Standard Deviation</b>
a) Our SACCO has a variety of digital funds transfer services	0.0	0.0	9.8	39.0	51.2	4.415	0.662
b) The volume of funds transacted on the digital transfer platform is high	0.0	0.0	12.2	43.9	43.9	4.317	0.679
c) Most clients use the services to send and receive funds	0.0	2.4	12.2	46.3	39.0	4.220	0.749
d) Digital funds transfer has led to increased client base	0.0	2.4	24.4	58.5	14.6	3.854	0.683
e) The frequency of digital funds transfer transactions has increased	0.0	0.0	4.9	43.9	51.2	4.463	0.588
f) Digital funds transfer services are reliable	0.0	0.0	14.6	36.6	48.8	4.341	0.719
<b>Average</b>	<b>0.0</b>	<b>0.8</b>	<b>13.0</b>	<b>44.7</b>	<b>41.5</b>	<b>4.268</b>	<b>0.680</b>

Table 4.6 shows that the respondents strongly agreed that the frequency of digital funds transfer transactions had increased (mean = 4.463, standard deviation = 0.588) and their

SACCOs had a variety of digital funds transfer services (mean = 4.415, standard deviation = 0.662). Digital banking strategies enable banks to advance their ability to beat competition, lower their affinity to risk and manage risk better in case it happens while at the same time responding to the needs of their clients satisfactorily and respond to the market changes (Laeven & Levin, 2010). Mosongo, Gichana, Ithai and Nguta (2013) argued that financial innovations lowers the transaction cost of transferring funds from lower yielding money balances to higher yielding alternatives. Therefore, with financial innovation market participants attempt to minimize risk and to maximize returns. Changes in international financial environment and increasing integration of domestic environment lead to financial innovation.

Nonetheless, they also disclosed that digital funds transfer services were reliable (mean = 4.341, standard deviation = 0.719), the volume of funds transacted on the digital transfer platform was high (mean = 4.317, standard deviation = 0.679), and most clients used the services to send and receive funds (mean = 4.220, standard deviation = 0.749) while on the other hand digital funds transfer had led to increased client base (mean = 3.854, standard deviation = 0.683). Rotchanakitumunai & Speece, 2003 argued that the need for convenient ways of accessing financial resources beyond the conventional norms has seen steady progress in the scope of innovations emanating from exploitation of these fairly new technologies. From the customer's perspective, internet banking facilitates a convenient and effective approach to manage personal finances, as it is accessible 24 hours a day and 365 days in a year without visiting the bank and from any locations. On average, the influence of digital funds transfers on the financial performance of the SACCOs had a mean of 4.268 and a standard deviation of 0.680.

#### 4.4.5 Financial Performance of SACCOs

This section of the questionnaire sought to address the general financial performance of SACCOs as shown in Table 4.7

**Table 4.7: Financial Performance**

<b>Indicator</b>	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Mean</b>	<b>Standard Deviation</b>
a) With digital banking our client base has increased	0.0	0.0	17.1	46.3	36.6	4.195	0.706
b) The volume of transactions has gone up with digital banking	0.0	0.0	0.0	51.2	48.8	4.488	0.500
c) Customer service has improved with digital banking services	0.0	0.0	7.3	51.2	41.5	4.341	0.609
d) Our capital adequacy has improved with digital banking	0.0	0.0	9.8	41.5	48.8	4.390	0.658
e) SACCO earnings have increased	0.0	0.0	22.0	39.0	39.0	4.171	0.762
f) With digital banking our liquidity has improved	0.0	0.0	14.6	43.9	41.5	4.268	0.699
g) Operational and management efficiency has improved	0.0	4.9	19.5	36.6	39.0	4.098	0.878
h) Our capacity to handle more clients has improved with digital banking	0.0	2.4	17.1	39.0	41.5	4.195	0.803
<b>Average</b>	<b>0.0</b>	<b>0.9</b>	<b>13.4</b>	<b>43.6</b>	<b>42.1</b>	<b>4.268</b>	<b>0.702</b>

As presented by Table 4.7, the respondents strongly agreed that the volume of transactions had gone up with digital banking (mean = 4.488, standard deviation = 0.500) while their capital adequacy had improved with digital banking (mean = 4.390, standard deviation = 0.658). Nonetheless they also revealed that customer service delivery had improved (mean =

4.341, standard deviation = 0.609) and with digital banking their liquidity had improved (mean = 4.268, standard deviation = 0.699). Furthermore they disclosed that with digital banking their client base had increased (mean = 4.195, standard deviation = 0.706), their capacity to handle more clients has improved (mean = 4.195, standard deviation = 0.803), SACCO earnings increased (mean = 4.171, standard deviation = 0.762) and more so the operational and management efficiency improvement (mean = 4.098, standard deviation = 0.878). Ombati et al. (2010), tried to establish the relationship between technology and service quality in the banking industry in Kenya. A cross-sectional survey design was conducted with a sample size of 120 customers. The findings revealed that there is a direct relationship between technology and service quality which can translate to performance of the bank.

Additionally, Sonja (2010) researched on the effects of computerization on saving and credit cooperatives in Uganda and found out that Technology is likely to increase the efficiency, outreach and sustainability of microfinance institutions. The study found out that technology has positively influenced SACCOs by making daily work easier and quicker and recommended that as technology evolves, more training is required to ensure necessary human resource capacity. On average, the financial performance of the SACCOs had a mean of 4.268 and a standard deviation of 0.702.

From these findings, it has the implication that majority of the staff at the three SACCOs operating in Kakamega County acknowledged that with digital banking, the volume of transactions had gone up, their capital adequacy had improved, their customer service delivery improved and their liquidity also improved.



## 4.5 Inferential Statistics

Inferential statistics were determined entailing correlation coefficient, coefficient of determination (R-Square), analysis of variance as well as regression coefficients.

### 4.5.1 Correlation Coefficient for Variables Relationship

**Table 4.8: Correlation Coefficient**

	<b>Mobile Banking</b>	<b>Internet Banking</b>	<b>Use of Credit Cards</b>	<b>Digital Funds Transfer</b>	<b>Performance of Saccos</b>
Mobile Banking	1.000	0.512	0.154	0.265	0.610
Internet Banking	0.512	1.000	0.199	0.287	0.568
Use of Credit Cards	0.154	0.199	1.000	0.401	0.446
Digital Funds Transfer	0.265	0.287	0.401	1.000	0.513
Performance of Saccos	0.610	0.568	0.446	0.513	1.000

All the variables were found to be positively correlating to each other with performance of SACCOs having correlation index of 0.610, 0.568, 0.446, and 0.513 for mobile banking, internet banking, use of credit cards, and digital funds transfer respectively. The highest correlation was between mobile banking and performance of SACCOs ( 0.610) implying that the variable is a key digital banking service in determining the financial performance of SACCOs. All correlations had p-Value < 0.05 confirming that each variable was significantly correlating with the other.

#### 4.5.2 Coefficient of Determination

Coefficient of determination ( $R^2$ ) was used to determine the extent to which explanatory variables (predictors) explained any change in the predicted variable.

**Table 4.9: Coefficient of Determination**

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.780	0.608	0.564	0.156

Results in Table 4.9 show an R-Square of 0.608 with the standard error of estimate being 0.156. This implies that collectively, mobile banking, internet banking, use of credit cards, and digital funds transfer explains the financial performance of saccos up to 60.8 percent. The remaining 39.2 percent is explained by other factors that are not foreseen in this study.

#### 4.5.3 Analysis of Variance

Analysis of variance (ANOVA) was generated to determine the spread of the mean of variables and in particular spread between variables and spread within data.

**Table 4.10: Analysis of Variance**

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1.359	4.000	0.340	13.938	0.000
Residual	<u>0.877</u>	<u>36.000</u>	0.024		
Total	<u>2.236</u>	<u>40.000</u>			

Predictors: (Constant), Digital Funds Transfer, Mobile Banking, Use of Credit Cards, Internet Banking  
Dependent Variable: Performance of Saccos

As shown in Table 4.10, F-Calculated (4, 36) = 13.938 at 2-tail test and 95% confidence level. Results also show p-Value = 0.000 < 0.05. This further confirms that at composite

level, the predictors (mobile banking, internet banking, use of credit cards, and digital funds transfer) significantly influence the financial performance of SACCOs

#### 4.5.4 Regression Model

This was done to generate a regression model as shown in Table 4.11

**Table 4.11: Regression Model**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-0.017	0.600		-0.029	0.977
Mobile Banking	0.385	0.125	0.378	3.076	0.004
Internet Banking	0.195	0.094	0.257	2.072	0.045
Use of Credit Cards	0.230	0.110	0.239	2.087	0.044
Digital Funds Transfer	0.193	0.094	0.243	2.058	0.047

Dependent Variable: Performance of Saccos

Findings as shown in Table 4.11 articulate that, when mobile banking, internet banking, use of credit cards, and digital funds transfer are individually increased by one unit, financial performance of SACCOs would increase by 0.385, 0.195, 0.230, and 0.193 units respectively. The opposite is also true. When all the explanatory variables are held constant, financial performance of SACCOs would be at -0.017 out of 5 scores. All the predictors had p-Value < 0.05 at 95% confidence level implying that they were all individually significant in influencing the financial performance of SACCOs. The model can be summarized as follows:

$$Y = -0.017 + 0.385X_1 + 0.195X_2 + 0.230X_3 + 0.193X_4$$

Where Y is the dependent variable (Financial performance of SACCOs),  $X_1$  = Mobile Banking,  $X_2$  = Internet Banking,  $X_3$  = Use of Credit Cards,  $X_4$  = Digital Funds Transfer.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents summary of findings, conclusion and recommendations. The chapter also gives suggestions for further studies.

#### **5.2 Summary of Key Findings**

##### **5.2.1 Mobile Banking**

As revealed by the findings, majority of the respondents disclosed that their mobile banking system was reliable and that most of their customers had enrolled on the mobile banking platform .Furthermore the respondents affirmed that customer queries and updates are done via the mobile phones as well as most customers preferring to use mobile banking due to its convenience .Additionally, the respondents agreed that their respective SACCOs had a vibrant mobile banking system and most of the transactions were done via the mobile platform. They also consented that the volume of transactions on the mobile platform was high.

##### **5.2.2 Internet Banking**

Majority of the respondents strongly agreed that their respective SACCOs had a reliable internet connectivity and the SACCO interacts, updates and informs clients via the internet platform . Additionally, they affirmed that internet banking platform was secure, reliable and convenient to clients.They also disclosed that the volume of transactions over the internet system had increased, the number of customers using the internet banking system was high,

the SACCO had an interactive and user friendly website, and most transactions were done via the internet .

### **5.2.3 Use of Credit/Debit Cards**

From the findings, the respondents strongly agreed that the volume of transactions via credit cards had increased, customers knew how to use the credit cards and most SACCO products could be accessed via the credit cards. Additionally, they affirmed that the use of credit cards was convenient to customers, the SACCOs had working ATMs, and most customers had credit cards. They also moderately agreed that their enterprise had rolled out credit cards .

### **5.2.4 Digital Funds Transfer**

A vast majority of the respondents strongly agreed that the frequency of digital funds transfer transactions had increased and their SACCOs had a variety of digital funds transfer services. Nonetheless, they also disclosed that digital funds transfer services were reliable, the volume of funds transacted on the digital transfer platform was high, and most clients used the services to send and receive funds while on the other hand digital funds transfer had led to increased client base.

### **5.2.5 Financial Performance**

From the findings, the respondents strongly agreed that the volume of transactions had gone up with digital banking while their capital adequacy had improved with digital banking. Nonetheless they also revealed that customer service delivery had and with digital banking their liquidity had improved. Furthermore they disclosed that with digital banking their client base had increased, their capacity to handle more clients has improved, SACCO earnings increased and more so the operational and management efficiency improvement.

### **5.3 Conclusions**

In conclusion, the financial performance of the SACCOs was significantly influenced by the digital financial services instituted by the SACCO managements. They demonstrated to have reliable mobile banking system where most of their customers had enrolled on the mobile banking platform and most of customer queries and updates were sorted via the mobile platform. Customers also preferred using mobile banking due to its convenience to walking to the banking hall for similar services. The SACCOs also interact, update and inform clients via the internet platform where they termed the platform to be secure, reliable and convenient to clients. The SACCOs had an interactive and user friendly website and the volume of transactions via credit cards, the frequency of digital funds transfer transactions, and the volume of funds transacted on the digital transfer platform had greatly increased. Their capital adequacy, liquidity and client base had improved considerably with digital banking as well as the operational and management efficiency improvement.

### **5.4 Recommendations**

Given the limitations and findings of this study, the researcher recommends that since there exists a positive relationship between e-banking and bank performance and e-banking has brought services closer to bank customer's hence improving banking industry performance, SACCOs must also enhance the dynamics of the sector and embrace digital banking fully and extensively. Mobile banking faces various challenges among them being, system delays by the mobile money transfer service providers, slow processing of transactions, high transactions costs, limit on the amount of money that can be withdrawn in a day and fraud. The management of the SACCOs should have an engagement and sort these issues for the betterment of their service delivery and create confidence with their customers. The SACCO

management must also understand that online banking helps community banks improve their earnings ability as measured by return on equity and improve asset quality and thus the adoption of e-banking would enhance the performance of the SACCOs due to increased efficiency, effectiveness and productivity.

### **5.5 Further Research**

This study considered only four research indicators which were mobile banking, internet banking, use of credit/debit cards and digital funds transfer. Given that there are other factors that explain digital financial services, a comprehensive study incorporating these other variables and more conclusive findings should be carried out.

Given that the current research was a case study of three SACCOs in Kakamega County, the researcher recommends a similar study to be carried out on a cross-sectional survey where other SACCOs in Kakamega County and the rest of the country are involved and do a results comparison.

This study should also be contextualized in rest of the counties and results compared to those of the three SACCOs operating in Kakamega County, Kenya.

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## **APPENDICES**

### **APPENDIX I: INTRODUCTION LETTER**

Kizito Simiyu Wanyonyi

Kenyatta University

Dear Respondent,

#### **RE: ACADEMIC RESEARCH PROJECT**

In partial fulfilment of the requirements for the award of Master of Business Administration of Kenyatta University, I am undertaking research entitled “**DIGITAL FINANCIAL SERVICES AND FINANCIAL PERFORMANCE OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KAKAMEGA COUNTY, KENYA.**”

This is to kindly request you to take a few minutes and fill in the attached questionnaire. All information provided was treated with strict confidentiality.

Thank you for your cooperation.

Yours faithfully,

**Kizito simiyu wanyonyi**

RESEARCHER

## APPENDIX II: QUESTIONNAIRE

Please answer all Questions by inserting a TICK where appropriate or alternatively please write in the space provided.

### SECTION A: PERSONAL DETAILS

1. Name of your SACCO.....(optional)

2. Your age in years;

a) 20 – 30 ( ) b) 30-40 ( ) c) 40 -50 ( ) d) 50 and above ( )

3. Gender Male ( ) Female ( )

4. Please indicate the number of years you have worked in this SACCO.

Less than 5 years ( ) b) Between 5-10 years ( )

c) Between (11-15 years ( ) d) Over 15 years ( )

5. What does your SACCO deal with?

.....

6. How many employees does your SACCO have?

7. Who owns your SACCO?

Traders

Farmers

Cooperatives

Other (specify)

8. What are some of the digital banking services are available in your SACCO?

Mobile banking

- Internet Banking
- Use of credit/debit cards
- Electronic funds transfer
- Other (specify)

**SECTION B: Mobile banking and financial performance**

6. Please indicate the extent to which you agree with the following statement relating to the adoption of mobile banking services in your SACCO on a scale of 1-5 where; Strongly agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1

Indicator	1	2	3	4	5
The SACCO has a vibrant mobile banking system					
Most customers have enrolled on the mobile banking platform					
Most of the transactions are done via the mobile platform					
Customer queries and updates are done via the mobile					
The volume of transactions on the mobile platform is high					
Most customers prefer mobile banking due to its convenience					
Our mobile banking system is reliable					

**SECTION C: Internet banking and financial performance**

7. Please indicate the extent to which you agree with the following statements regarding the use of internet banking services in your SACCO on a Likert scale of 1-5 where; Strongly agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1

Indicator	1	2	3	4	5
The SACCO has a reliable internet connectivity					
The SACCO has an interactive and user friendly website					
Most transactions are done via the internet					
The number of customers using the internet banking system is high					
The volume of transactions over the internet system has increased					
Internet banking platform is secure, reliable and convenient to clients					
The SACCO interacts, updates and informs clients via the internet platform					

**SECTION D: Use of Credit Cards and financial performance**

8. Please indicate the extent to which you agree with the statements with regard to the use of credit cards in your SACCO on a scale of 1-5 where; Strongly agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1

Indicator	1	2	3	4	5
The SACCO has working ATMs					

Our enterprise has rolled out credit cards					
Most customers have credit cards					
Use of credit cards is convenient to customers					
The volume of transactions via credit cards has increased					
Most SACCO products can be accessed via the credit cards					
Customers know how to use the credit cards					

**SECTION E: Digital funds transfer and performance**

9. Please indicate the extent to which you agree with the following statements regarding use of digital funds transfer in your SACCO on a scale of 1-5 where; Strongly agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1

Indicator	1	2	3	4	5
Our SACCO has a variety of digital funds transfer services					
The volume of funds transacted on the digital transfer platform is high					
Most clients use the services to send and receive funds					
Digital funds transfer has led to increased client base					
The frequency of digital funds transfer transactions has increased					
Digital funds transfer services are reliable					


**SECTION F: Financial Performance of SACCOs**

10. Please indicate the extent to which you agree to the following statements regarding performance of your SACCO on a scale of 1-5 where; Strongly agree=5, Agree=4, Neutral=3, Disagree=2 and Strongly Disagree=1

Indicator	1	2	3	4	5
With digital banking our client base has increased					
The volume of transactions has gone up with digital banking					
Customer service has improved with digital banking services					
Our capital adequacy has improved with digital banking					
SACCO earnings have increased					
With digital banking our liquidity has improved					
Operational and management efficiency has improved					
Our capacity to handle more clients has improved with digital banking					

**THANK YOU FOR YOUR COOPERATION**

## APPENDIX II: APPROVAL FOR RESEARCH PROJECT PROPOSAL

  
**KENYATTA UNIVERSITY  
GRADUATE SCHOOL**

E-mail: [gs@kenyattauniversity.ac.ke](mailto:gs@kenyattauniversity.ac.ke) P.O. Box 43004, 00100  
Website: [www.kenyattauniversity.ac.ke](http://www.kenyattauniversity.ac.ke) NAIROBI, KENYA  
TEL: 8107611 FAX: 41340

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Internal Memo

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FROM: Dean, Graduate School DATE: 09<sup>th</sup> October, 2020

TO: Kizito Simiyu Wanyonyi REF: D53/OL/24421/2014  
C/o Accounting & Finance Dept.

**SUBJECT: APPROVAL OF RESEARCH PROJECT PROPOSAL**

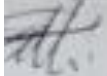
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This is to inform you that Graduate School Board at its meeting of 11<sup>th</sup> September, 2020 approved your Research Project Proposal for the MBA Degree Entitled, "Digital Financial Services and Financial Performance of Savings and Credit Cooperative Societies in Kakamega County, Kenya".

You may now proceed with your Data Collection, Subject to Clearance with Director General, National Commission for Science, Technology and Innovation.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed Supervision Tracking and Progress Report Forms per semester. The forms are available at the University's Website under Graduate School webpage downloads.

Thank you.

  
**LIJAH MUTUA**  
**OR: DEAN, GRADUATE SCHOOL**

cc: Chairman, Accounting and Finance Department.

Supervisors:

I. Dr. Dominic Ngaba  
C/o Department of Accounting and Finance  
Kenyatta University



**APPENDIX IV: NACOSTI RESEARCH LICENSE**

  
**REPUBLIC OF KENYA**

  
**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **787326** Date of Issue: **26/October/2020**

**RESEARCH LICENSE**



**This is to Certify that Mr. KIZITO SIMIYU WANYONYI of Kenyatta University, has been licensed to conduct research in Kakamega on the topic: DIGITAL FINANCIAL SERVICES AND FINANCIAL PERFORMANCE OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KAKAMEGA COUNTY, KENYA for the period ending : 26/October/2021.**

License No: **NACOSTI/P/20/7349**

**787326**  
Applicant Identification Number

  
Director General  
**NATIONAL COMMISSION FOR  
SCIENCE, TECHNOLOGY &  
INNOVATION**

Verification QR Code



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