THE EFFECT OF ICT ADOPTION ON THE FINANCIAL PERFORMANCE OF SAVINGS AND CREDIT CO-OPERATIVE SOCIETIES IN WESTERN KENYA

BY

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DECLARATION

I, the undersigned hereby declare that this project proposal is my original work and has not been submitted in the same form or any other form to this or any other university or college for any examination.

Anna Ayoro **Sign……** **Date……**

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This project proposal has been submitted for examination with my approval as the University Supervisor.

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ABSTRACT

The World Council of Credit Unions (WOCCU) statistical report for 2014, recorded a total of 57,000 Credit Unions (SACCOs), spread across 105 countries and 6 continents. The worlds Credit Union system has a combined savings of $ 1.5 trillion (US dollars), and an asset base of $ 1.8 trillion (US dollars) out of which $ 1.2 trillion (US dollars) constituted the loan portfolio. Past research studies have been done on how Cooperative movement could harness awareness regarding the power of ICT's in improving the livelihoods and also incorporate the same in theory and practice within its operations. ICT is a basic infrastructure that can transform the performance of business sectors. Therefore there is need to exploit ICT to strategically position the organizations to benefit from an increasingly information driven global economy. The general objective of this study is to establish the effect of ICT adoption on the financial performance of savings and credit co-operative societies in Western Kenya. Specific objectives are; to determine the effect of ICT innovation on the financial performance of savings and credit co-operative societies in western Kenya, to examine the effect of ICT infrastructure on the financial performance of savings and credit co-operative societies in western Kenya and to assess the effect of ICT Training on the financial performance of savings and credit co-operative societies in western Kenya. Technology acceptance model will be adopted for the study. A correlational research design will be used in this study. The population for the study will be made up of 16 SACCOS in western Kenya. The study will adopt purposive sampling, stratified random sampling technique and Simple random sampling method. The study will use questionnaires to collect data from respondents. The study will use both primary and secondary data. Content validity of the instrument will be ascertained through peer review and scrutiny by research experts. This study will use internal consistency technique to ensure reliability. Data will be analysed using both inferential and descriptive statistics. The information acquired from this study will be useful to policy-makers both in the government and SACCOs, especially in strengthening policy considerations in this sector. Further, the study will act as an impetus to reignite interest in this critical area of study.

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ABBREVIATIONS AND ACRONYMS

ACCOSSA	Africa Confederation of Co-operative Society Savings and Credit Association
FOSA	Front Office Service Activities
ICT	Information Communication Technology
KUSCCO	Kenya Union of Saving and Credit Co-operatives
PEoU	Perceived ease-of-use
PU	Perceived usefulness
SACCO	Savings and Credit Co-operative Society
SASRA	SACCO Societies Regulatory Authority
TAM	Technology acceptance model

OPERATIONAL DEFINITION OF TERMS

Cooperative	In this study refers to a legal entity owned and democratically controlled by its members. member often have a close association with the enterprise as producers or consumers of its products or services, or as its employees (mungai,2015).
ICT Policy	This is a road map of actions to be adopted by an organization involving issues of ICT.
ICT Infrastructure	This refers to the overall name used to describe all the Computer and Communication hardware used to manage clerical, administrative and management task in the organization.
Net Interest Margin	is a measure of the difference between the interest income generated by banks or other financial institutions and the amount of interest paid out to their lenders (for example, deposits), relative to the amount of their (interest-earning) assets.
Return on Assets	is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. ... It is commonly defined as net income divided by total **assets**. Net income is derived from the income statement of the company and is the profit after taxes.
Return on Equity	is the amount of net income returned as a percentage of shareholders equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested.

1.0 INTRODUCTION

This section presents a preview to the concept and effects of the effect of ICT adoption on the financial performance of savings and credit co-operative societies in Western Kenya, in this section, purpose of the study, objective of the study, and statement of the problem and the limitation of the study will also be presented.

1.1 Background of the Study

The World Council of Credit Unions (WOCCU) statistical report for 2014, recorded a total of 57,000 Credit Unions (SACCOs), spread across 105 countries and 6 continents. The worlds Credit Union system has a combined savings of $ 1.5 trillion (US dollars), and an asset base of $ 1.8 trillion (US dollars) out of which $ 1.2 trillion (US dollars) constituted the loan portfolio. The average worldwide penetration rate of the Credit Union system stood at 8.2 percent. According to the 2014 International Co-operative Alliance's World Cooperative Monitor, the turnover of the largest 300 cooperatives in the world grew by 11.6% to reach $2.2 trillion in 2012, equivalent to the gross domestic product (GDP) of Brazil. The overall turnover of nearly 2,000 cooperatives in the 65 countries surveyed by the Monitor totals $2.6 billion. The top 300 cooperatives are active in three leading sectors: insurance (41%), agriculture and food (27%), and wholesale and retail (20%). Next come industry and utilities (5%), banking and financial services (4%), health and social care (1%), and others (2%). Of the 1,926 co-operatives included in the Monitor, 1,313 have a turnover of over $100 million and are spread across 50 countries. The first Savings and Credit Co-operative Society was started in Germany in 1849 by Herman Schulze and William Raiffersen. The SACCO Society was introduced to assist people overcome economic problems during the time of famine that prevailed there during that time. In 1850 in England, workers in a mill factory started savings and making loans, to help each other. Later, in the twentieth century,

the idea was moved to North America. As a result, the first SACCO Society was started in Canada in 1901 by Alphonse Desjardine and then in the USA by E. Filen, a Boston merchant for his employees. This resulted to a vast establishment of the movement in Europe, Canada, United States, Australia and Ireland. In fact, in many regions of these countries, SACCOs are much larger than the commercial banks. In 1970, the World Council of Credit Unions was formed with their Headquarters in Madson Wisconsin, USA, to provide an International Forum for discussion and association, provide assistance to new and developed movements, offer insurance and training on a large scale. Globally there are almost 100 million individual members in over 60 countries around the world (Savings Plus, 2010).

In Africa the first SACCO Society was introduced by Father John Mcnulty in Ghana, the SACCO was intended to assist villagers improve their economic conditions (Ng'ombe & Mikwamba, 2004). English speaking nations were the first to adopt SACCOs. The first entrants into SACCO community include Ghana, Uganda, Nigeria, Tanzania, and Kenya. Most of the Non-English speaking nations in Africa started appreciating SACCOs in 1960s, with major influx into SACCO community in 1970s (Mwakajumilo, 2011). The formation of SACCO in Africa grew tremendously to the extent that the African countries formed a continental association of SACCOs, Africa Confederation of Cooperative Society Savings and Credit Association (ACCOSSCA), in 1965. ACCOSSCA was formed with the principal objective of promoting the SACCO principles, offer SACCO insurance, and educate members on SACCO issues (Ng'ombe and Mikwamba, 2004). SACCOs in Africa are still crawling as they are newcomers, among those offering savings and credit. In fact they small share in providing financial services, their market share is insignificant when compare to other player in financial

service provision (Mwakajumilo, 2011). There are 28 countries in Africa that have established SACCOs (Savings Plus, 2010).

In Kenya the first Co-operative Society was Lumbwa Co-operative Society formed in 1908 by the European Farmers with the main objective of purchasing fertilizer, chemicals, seeds and other farm inputs and then marketing their produce to take advantage of economies of scale (Kenya Union of Saving and Credit Co-operatives (KUSCCO), 2006). In 1930, Kenya Farmers Association was registered as a Co-operative Society to take over the role of supply of farm inputs played by Lumbwa Co-operative Society (Gardeklint, 2009). Important to mention is that co-operatives were introduced, recognized and controlled by the government of Kenya (KUSCCO, 2006). At independence in 1963, the number of co-operative societies had grown to 1,030 with 655 active SACCOs with a total membership of 355,000 (Gardeklint, 2009). In 1965, the Africa Confederation of Co-operative Society Savings and Credit Association (ACCOSSA) was formed in Nairobi, Kenya as a Pan African body. It was formed to promote the SACCO Society principles, provide a forum for discussion, offer insurance to SACCO Society members on life savings and loan protection and educate affiliate members on a wide variety of credit union issues (Ng'ombe & Mikwamba, 2004).

Notably, after independence, the Government of Kenya recognized co-operatives as suitable vehicles with appropriate framework to achieve their aspirations and participate in the economic development of the nation. Accordingly, steps were taken by the Government which saw the rapid growth and expansion of the SACCO Society movement in the country. These SACCOs offered a range of financial services, most significantly loans against members share capital (Gardeklint, 2009). More specifically, in the period between 1964 and 1993, the general policy

was to use SACCOs as a means of accelerating the country's economic development particularly in the rural areas. In this regard, the government provided grants and subsidies but controlled the operations of SACCOs to ensure that they were properly managed to achieve the government's development goals (KUSCCO, 2006). Indeed, there are SACCO societies in almost all sectors of the economy (Khumalo, 2008). In fact, the Kenyan co-operative movement is considered by the government as one of the economic pillars of the nation. This is in view of the very significant role it plays in the development of the economy and in raising the living standards of the majority of the Kenyan population, both in the rural and urban areas. More precisely, the co-operative movement contributes over 30 per cent of the country's national savings (Ndung'u, 2010; Republic of Kenya (RoK), 2008). By the year 2010, Kenya had over 5,000 registered SACCOs with a membership of about 7 million. These SACCO societies had mobilized savings of over Ksh.200billion (Ndung'u, 2010).

ICT adoption in the banking sector for example, internet banking allows customers to access financial services conveniently, this reduces cost of transaction and improves efficiency. This in turn leads to a positive impact on financial performance. Agboola (2001) studied the impact of computer automation on the banking services in Lagos and discovered that electronic banking has tremendously improved the services of some banks to their customers in Lagos. He made a comparative analysis between the old and new generation banks and discovered variation in the rate of adoption of the automated devices between automated banks and those that failed to automate their services.

The rapid Adoption in ICT has made some of the functions of the banks more efficient and cheaper; this has increased deposits, sales and performance of these firms. Most microfinance

banks in the developing countries are adopting internet banking, customers can now transfer money, access their accounts, online shopping, get bank statement, pay bills, and conduct other transactions that took a long time of process in the past. Adoption of ICT has brought changes that are attributable to saving costs, efficiency and convenience to customers (Musyoka, 2014).

Adoption in ICT allows customers to access their bank accounts to make cash withdrawals, credit card cash advances, and check their account balances as well as purchase prepaid cellphone credit. This improves convenience since customers can withdrawal money from their point of reach without necessarily visiting the bank. This increases efficiency and mitigates the costs of transactions leading to financial performance. This is in line with a study conducted by Shawkey (1995) who investigated the contribution of automated teller machines on bank's financial performance. The results revealed that Adoption in ATMs led to an increase in both volume and value of deposit accounts, this led to reduced banking transaction costs, red ruced number of staff and the number of branches and consequently bank's profitability.

1.2 Statement of the Problem

The enhanced regulatory framework in the sector is not the panacea for inadequacies in the sector. SACCO management challenges include increasing returns to shareholders and such come at a cost of increases in risks. In September 2012 SASRA issued a communication to SACCO's to comply with capital adequacy requirements. SASRA developed a web-based electronic submission of financial returns (CAMELS) for objective analysis of the financial returns submitted by the licensed SACCO's. The electronic system is a means to achievement of prudent financial management; promoting sound financial and business practices in the SACCO sector. This performance rating framework however has had a fair share challenges. Many

different financial ratios and rules of the thumb have been promoted for financial institutions worldwide and few consolidated into an evaluation program. The World Council of Credit Unions, Inc. has a set of financial ratios "PEARLS" developed to measure key areas of Sacco's operations: Protection, Effective financial structure, Asset quality, Rates of return and cost, Liquidity and Signs of growth. Kamwere (2013) looked at the Challenges of Strategy Implementation at Kimisitu SACCO Society Ltd. Jamhuri (2012) did a research on Marketing Strategies Adopted by Deposit Taking SACCOs in Kenya. Olunja (2013) researched on the Adoption of Marketing Concept and Growth of Savings and Credit SASRA). Biomndo (2012) studied management of Strategic Change in Deposit Taking Savings & Credit Co-operatives in Kenya. Kilonzi (2012) conducted a study on the Impact of SACCO Societies Regulatory Authority (SASRA) Regulations on the Financial Performance of SACCOs in Kenya. Mathenge (2008) looked at the responses of Afya Co-operative Society Ltd to Non-Performing Loans. This study will therefore form a springboard for other studies because it will provide information that is specific to ICT adoption on the financial performance of SACCOs in Western Kenya. The model used in this study will give an estimation of the financial performance of SACCOs looking at adoption of an ICT system.

1.3 Objectives of the Study

The general objective of this study is to establish the effect of ICT adoption on the financial performance of savings and credit co-operative societies in Western Kenya

This study is guided by the following specific objectives;

i. To determine the effect of ICT innovation on the financial performance of savings and credit co-operative societies in western Kenya

ii. To examine the effect of ICT infrastructure on the financial performance of savings and credit co-operative societies in western Kenya

iii. To assess the effect of ICT Training on the financial performance of savings and credit co-operative societies in western Kenya

1.4 Research Hypotheses

Ho_1. There is no significant effect between ICT innovation and financial performance of savings and credit co-operative societies in western Kenya

Ho_2. There is no significant effect between ICT infrastructure and financial performance of savings and credit co-operative societies in western Kenya

Ho_3. There is no significant effect between ICT Training and financial performance of savings and credit co-operative societies in western Kenya

1.5 Justification of the Study

The information acquired from this study will be useful to policy-makers both in the government and SACCOs, especially in strengthening policy considerations in this sector. Such policy improvement may be handy in enhancing the guidelines on how to improve the performance and effectiveness of SACCOs in an effort to enhance their efficiency for the benefit of the members. Further, the study will act as an impetus to reignite interest in this critical area of study. Lessons learnt from this study as well as the recommendations for the future will help the SACCOs management to understand the strategic and tactical ways of dealing with challenges in the adoption and implementation ICT systems which will finally boost organization success, profitability and market potential. The study will also provide the background information to

research organizations and scholars who will want to carry out further research in this area. The study will also facilitate individual researchers to identify gaps in the current study and research in this area. The study will enhance the researchers' professional knowledge and skills that will enable practical ways of enhancing profitability in the competitive sub sector. The study will also provide results that can have significant impact of improved profitability and create more excellent opportunities that can be adopted by other institutions.

1.6 Scope of the Study

The scope of the study is examined in terms of subject, geographical, variable and time scopes. In terms of subject scope, this study is limited to the broad business field of business administration and its subfields of strategic management. Geographical scope is the second aspect of scope in this study. The research will be carried out in Western Kenya. In terms of variable scope, the research will be based on two variables these are; ICT adoption and financial performance of SACCO's. This study will take six months (March 2018 –August 2018).

1.7 Conceptual Framework

Conceptual Framework is a diagrammatic explanation of the research problem hence an explanation of the relationship among several factors that have been identified as important to the study (Ngechu, 2006). The conceptual framework provides a basis for understanding the multiple connections between the variables under study.

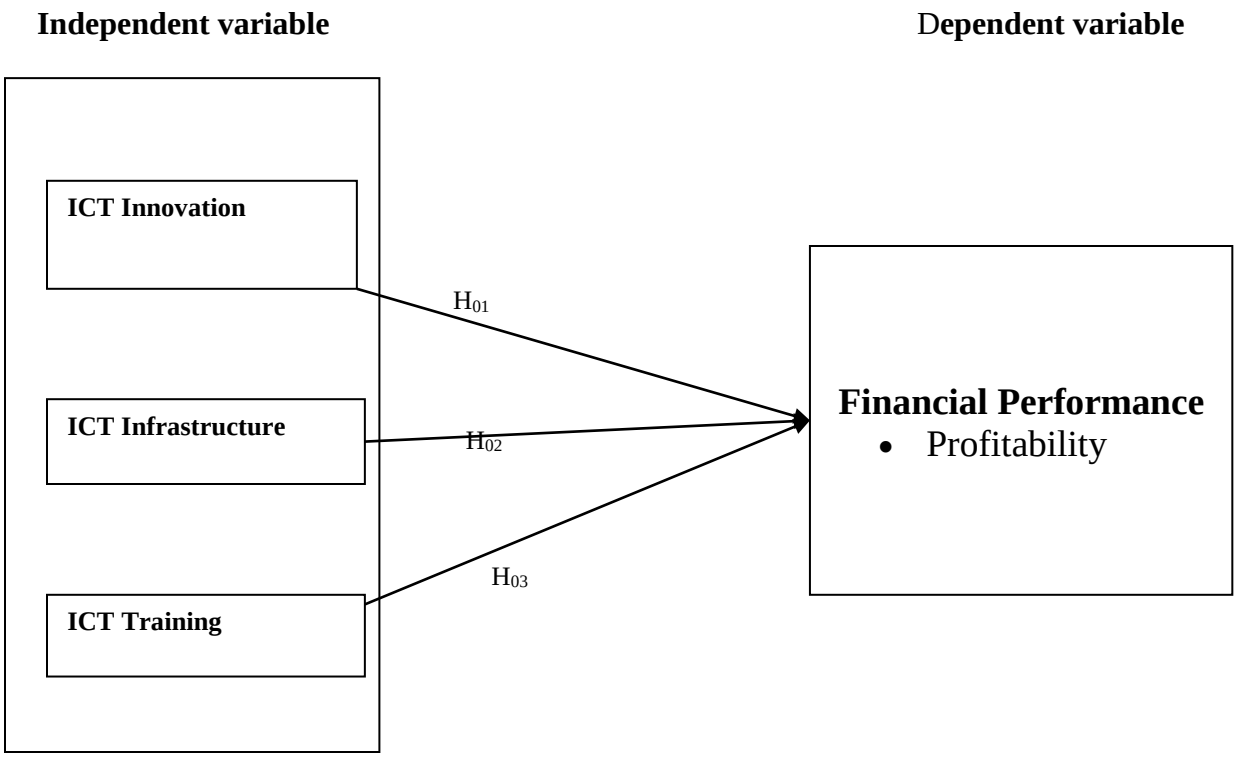

Figure 1. 1: Conceptual Framework on ICT adoption on the financial performance of savings and credit co-operative societies in Western Kenya

Source: (Author, 2018)

2.0 LITERATURE REVIEW

This chapter will review literature from book, journals and working reports. The specific contents of this chapter will be theoretical review and empirical literature review for the study.

2.1 Theoretical Framework

2.1.1 Technology Acceptance Model

Technology acceptance model (TAM) was originally proposed by Davies in 1986. This model was designed to forecast the user's acceptance of information technology and usage in an organizational setting. Cracknell (2004) posits that firms are adopting technology to cope with the dynamics of the external environment. This model has been tailored in a manner that can accommodate changes for improved costs reduction and efficiency. Technology Acceptance Model deals with perceptions as opposed to real usage, the model suggest that users , the key factors that influence their decision on how, where and when they will use it (Davis, 1989).

The factors to consider are: Perceived usefulness (PU). According to Davis, it is the degree to which a person believes that using a particular system will lead to improved performance. Perceived ease-of-use (PEoU) is explained as the degree to which a person believes that using a particular system would results to improved productivity.

The TAM was proposed by Davis *et al*. (1989), this model expounds on the attitude behind the objective to use technology or a services. This theory is relevant to this study since it explains user's acceptance of information technology and usage in an organizational context. Acceptance is the first process in technology use and has a bipolar implication. Acceptance firstly, is a precursor to adoption. Secondly, acceptance dictates the attitude and perception of the users which eventually affects efficiency of use and hence performance. The supporters of this theory; Britton and McGonegal (2007), argue that strategic adoption as well as operational efficiency

and hence productivity of systems are a function of acceptance of the technology. It is thus plausible to conclude that without acceptance, ICT adoption would be redundant and invalid. Though acceptance is an initial phase, it is also an attitude shaping facet that influences adoption and effectiveness of use.

2.2 Theoretical Literature Review

2.2.1 The Concept of ICT Adoption

Today, Information and Communication Technology (ICT) as an excellent prospect of technology plays a vital role in efficiency resulting in profitability of SACCOs through components such as cost reduction, cheaper distribution channels, and reduction in supply time, good customer services, production innovation, entering new markets, and increase in market share. Due to broad and deep ICT impact on global market and according to the importance of monetary and credit transactions in every economic and commercial activity, it requires that the tools and infrastructure of money and exchange are synchronized and be consistent with the growth of information technology.

Spanos et al. (2001) ICT Adoption covers the acquisition of equipment and computer software that is used in production for more than one year. ICT has three components: information technology equipment (computers and related hardware), communications equipment, and software. Software includes acquisition of pre-packaged software, customized software and software developed in-house.

Data availability and measurement of ICT Adoption vary considerably across countries; this may affect the comparability of ICT Adoption across countries depending on how they differentiate between intermediate consumption and Adoption in practice (Ashrafi and Murtaza, 2008). Adoptions in ICT in the financial sector enable increased efficiency and accessibility to

information this improves coordination of activities within the organizational boundaries. Examples of ICT Adoptions in the banking sector include: internet banking, use of automated teller machines (ATMS), internet banking and mobile banking (Polasik and Wisniewski, 2009). ICT Adoption in the banking sector is measured according to the ICT product. ATM is one of the ICT product in the banking sector that is allows the customers to deposit cash and make withdrawals outside the banking hall (Wisniewski, 2008). ATM transactions are measured using the number of transactions per day divided by the total number of transactions per year.

2.2.2 The Concept of Financial Performance

According to Hicks and Niehans (1998) financial performance can be defined as the accomplishment of a given task that is measured using predetermined standards of accuracy, completeness, efficiency and effectiveness. Financial performance measures are used to evaluate how well a company is using its resources to make profits. Examples of financial performance include operating income, earnings before interest and taxes, and net asset value. It is worth mentioning that no one measure of financial performance should be taken on its own. Rather, a thorough assessment of a firm's performance should take into consideration more than one measure of financial performance.

The measures of financial performance are, return on equity (ROE) and return on assets (ROA). Return on equity measures the efficiency of a firm at generating profits from each unit of shareholder equity, also known as net assets or assets minus liabilities. Return on assets expresses the net income earned by a company as a percentage of the total assets available for use by that company. With return on Assets companies with higher amounts of assets should be

able to earn higher levels of income and profitability. Return on Assets measures management's ability to earn a return on the firm's resource (Liang and Lu, 2010).

2.2.3 ICT Adoption and Financial Performance

The benefits of investing in ICT in the enhancement of Bank service is not only limited to cost reduction benefits but also found to have significant contribution to giving access to customers residing outside the branch network and create opportunities for effective cross-selling.. This improves efficiency and increases sales and hence financial performance (Gerrard and Cunningham, 2003).

Sathye (1999) argues that ICT Adoptions bring real benefits to the banks. ICT adoption in the banking sector for example, internet banking allows customers to access financial services conveniently, this reduces cost of transaction and improves efficiency. This in turn leads to a positive impact on financial performance. Agboola (2001) studied the impact of computer automation on the banking services in Lagos and discovered that electronic banking has tremendously improved the services of some banks to their customers in Lagos. He made a comparative analysis between the old and new generation banks and discovered variation in the rate of adoption of the automated devices between automated banks and those that failed to automate their services.

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Shawkey (1995) who investigated the contribution of automated teller machines on bank's financial performance. The results revealed that Adoption in ATMs led to an increase in both volume and value of deposit accounts, this led to reduced banking transaction costs, reduced number of staff and the number of branches and consequently bank's profitability.

2.3 Empirical Literature Review

2.3.1 ICT Innovation on the Financial Performance of SACCOs

Juma (2012) studied the impact of ICT adoption on financial performance of commercial banks in Kenya. The study used a descriptive survey. Data was collected with the help of a semi-structured questionnaire. Analysis was done using a regression model and the results of the analysis found that ICT improved the operations, the liquidity and the asset quality of commercial banks in Kenya.

Imran, Abdul *et. al*., (2012) investigated the role of IT on the efficiency of banks and also explored the existence of relationship between the Adoption in IT and bank efficiency measures. The result showed that Adoption in information system is contributing towards increase in market share, reducing operational costs, improved customer services and assisting the banks in introducing new products and services.

Kimata (2013) did a study on effects of ICT on the financial performance of deposit taking SACCOS in Nairobi County. The study used a descriptive survey to find out how ICT impacts on customer services system and reduction in operational costs. The population of interest was all the 44 deposit taking Sacco's in Nairobi County. Secondary data was sourced from the Sacco's annual financial reports and Sacco Societies Regulatory Authority (SASRA) supervisory reports. The data covered the period 2008 to 2012. Data analysis involved reducing accumulated

data to manageable levels, developing summaries, looking for patterns and applying statistical techniques. The study established that ICT adoption were a major contributor to financial performance of DTS.

A study by Keah (2014) investigated the effect of ICT adoption on the financial performance of savings and credit co-operative societies in Nairobi County. Descriptive survey and a cross-sectional research design were used. The population of the study involved 45 deposit and non-deposit taking Sacco's. Purposive sampling technique was used in selecting the 40 SACCOs. Secondary data was used to collect information from financial statements and records. Descriptive and inferential analysis techniques were used involving mean, standard deviation, median, minimum and maximum values. The results indicate that an increase in ICT adoption leads to an increase in Sacco's financial performance.

The study by Kimani (2007) identified the causes of inefficiency and ineffectiveness in credit administration in SACCOs; and growth and sustainability of SACCOs was related to the stewardship and legal framework.

2.3.2 ICT Infrastructure on the Financial Performance of SACCOs

Kamau (2014) carried out a study on the effect of ICT adoption on the financial performance of micro-finance institutions in Kenya. The study did a descriptive survey to find out the factors that influence ICT adoption on financial performance of micro finance institutions in Kenya. The study carried out tests on the effects of ICT adoption on the Financial Performance of MFIs for the period 2008-2012. Primary data was collected through a questionnaire. An analytical model was developed to determine the strength of the relationship between variables. Analysis of the data showed that there was a positive correlation between ICT adoption and financial performance of MFI's.

Bidley (2000) investigated the impact of ICT Adoption on financial performance of manufacturing firms. The study used a descriptive study. The study used a descriptive survey to establish whether the variables correlate. Secondary data sources were used for five years from the financial statements of manufacturing firms. A regression model was used to show the relationship between the variables. The study found that there exist a positive relationship between manufacturing firms that invested in ICT and financial performance of manufacturing firms.

Agboola (2001) conducted a study on the relationship between ICT Adoption and performance in Nigeria. A survey of 100 banks was conducted and secondary data sources from financial statements of these firms were used. The researcher did a cross-sectional study for these firms and the data was analyzed using descriptive statistics. It was concluded that there was a positive relationship between ICT Adoption and profitability of commercial banks in Kenya. Data was collected from all the 44 commercial banks in Kenya. The result indicates that ICT led to improved service quality and customer satisfaction.

Mbai (2007) concentrated on Competitive Strategies Adopted by Mwalimu SACCO Society Ltd as a result of external environmental changes since 1997. A research done by Wamalwa (2012) focused on the Effect of Regulation on Financial Performance of Savings and Credit Co-operative Societies offering Front Office Services Activities (FOSA) in Kenya. Kimotho (2013), researched on Strategic Change Management Practices Adopted by Savings and Credit Co-operative Societies in the Public Sector in Kenya.

2.3.3 ICT Training on the Financial Performance of SACCOs

Gaitho (2010) surveyed on credit risk management practises by SACCOs in Nairobi County, findings revealed that, majority of SACCOs used credit risk management practises to mitigate risks as a basis for objective credit risk appraisal. She also found out that, majority of SACCOs relied heavily on the discretion and ability of portfolio managers for effective credit risk management practises as opposed to a system that standardizes credit and credit risk decisions.

In another study by Kimani (2007), it was found that the main causes of inefficiency and ineffectiveness in credit administration were unqualified staff in SACCOs; inadequate funds to lend; inadequate training; lack of effective technology; weak internal control systems; and credit management committee is very powerful and able to manipulate the lending. The study recommends that the SACCOs should, therefore, increase the funds for lending through external borrowing; employ competent staff; restructure the organizational structure; funds should be allocated to Adoption with high returns; increase the loan products (diversify) to satisfy members; embrace teamwork; adopt modern technology; change interest rates to attract members; ensure competition with other financial institutions; ensure networking with other SACCOs; provide education and training to members and staff; change location of office; participate in corporate social responsibility.

Onchangwa and Memba (2012) explored the question “Does Sacco’s have any effect on members’ Adoption culture in Kenya? The study adopted descriptive research design, a population of 25,145 members of all the 8 registered Savings and Credit Cooperative Societies in Gucha district of Kenya. Using a simple random sampling a sample of 379 respondents who have savings accounts in various Sacco’s were selected. The study used a questionnaire to obtain primary data while secondary data was obtained from periodicals and journals. The findings of

this study indicated that Sacco's influence the Adoption culture of their members. As the data showed that members invested more after joining than before joining Sacco's at 69.85 percent. Further findings showed that good Sacco policy framework enhanced members' Adoption culture. Thus according to Onchangwa and Memba (2012), there needs to be support offered to the Sacco's in terms of management and staff training to guide in proper policy formulation to ensure members funds saved with them can be accessed when an Adoption opportunity arises.

Wamalwa (2012) studied the impact of regulation of SACCO performance and concluded that the SACCO performance has greatly improved following the compliance of the Governance rule, Prudential Regulations and Reporting requirements.

In Kenya, 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 electronic banking and financial performance of Saccos in Kenya.

2.4 Summary of Knowledge Gap

From the empirical review, most studies locally and globally have shown that there exists a positive relationship between ICT adoption and financial performance of firms. Juma (2012), Imran, Abdul *et al*., (2012) studied the impact of ICT adoption on financial performance of commercial banks in Kenya. The current study focuses on SACCOS and not commercial banks. Keah (2014), Kimata (2013) did a study on effects of ICT on the financial performance of deposit taking SACCOS in Nairobi County. The current study is focusing on SACCOS in Western Kenya. Kamau (2014) did a descriptive survey to find out the factors that influence ICT

adoption on financial performance of micro finance institutions in Kenya. The current study focuses on SACCOS and will adopt a correlation design. Bidley (2000) study used a descriptive survey to establish whether the variables correlate. The current study will focus on SACCOS and adopt a correlation design. Agboola (2001) did a cross-sectional study for these firms and the data was analyzed using descriptive statistics. The study above focused on banks and was done in Nigeria, the current study will be done in Kenya and will focus on SACCOS. Onchangwa and Memba (2012) study adopted descriptive research design, a population of 25,145 members of all the 8 registered Savings and Credit Cooperative Societies in Gucha district of Kenya. The current study will target all SACCOS in Western Kenya and will adopt a correlation design. Although extensive research has been done on ICT and financial performance; little focus has been placed within the context of SACCO's in Kenya. Therefore, this necessitates the need to investigate the effect of ICT adoption on financial performance of SACCOs in Western Kenya.

3.0 RESEARCH METHODOLOGY

This section points out the research design that will be adopted, the target population, sample and the sampling procedures, data collection, validity and reliability and data analysis methods and presentation.

3.1 Research Design

Kerlinger (1973) defines research design as an arrangement of conditions for collecting and analyzing of data in a manner that aims to combine relevance to the research purpose with economy in procedure. It is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. Orodho (2003) defines research design as the scheme, outline or a plan used to generate answers to research problems. This study will adopt a correlational design to establish the relationship between the variables. Mugenda & Mugenda (2012) describes correlational research as a study that assesses the relationship between variables whereby the researcher obtains information on one variable to estimate the variation in a related variable.

3.2 Study Area

Western Kenya is a region of Kenya and includes the former Nyanza and Western Provinces of the same name. The western Kenya has 10 Counties namely; Busia, Bungoma, Homa bay, Migori, Kisii, Nyamira, Siaya, Kakamega, Kisumu and Vihiga Counties. The region has a total of 16 SASRA registered SACCOs evenly spread across the counties, (SASRA list of SACCOs, 2018).

3.3 Target Population

Cooper & Schindler (2001), defined population as the total collection of elements about which we wish to make some inferences. The study population will constitute selected SACCO's in Western Kenya. According to Kombo and Delno, (2006) population is a group of individuals, objects or items from which samples are taken for measurement. The population for the study will be made up of 16 SACCO's in Western Kenya. The number was obtained from SASRA list of registered licensed SACCO's (2018).

3.4 Sample Size and Sampling Technique

A sample size representative of the study population will be selected. According to Gall *et al.*, (1996), a representative sample will give results that can be generalized to the study population. According to Glenn (1992) pre-determined table for population and sample size, a total population of over 10,000 will have a complete representation of 384 respondents at 5% precision. The study will select 16 Executive directors, 16 ICT managers, 16 Finance Managers and 21 Sacco members from each of the 16 SACCO's in Western Kenya.

The researcher will employ a combination of different sampling techniques in selecting the appropriate sample. According to Gay (1996), the larger the population size, the smaller the percentage of the population required to get a representative sample. For smaller populations (N<100) there is little point in sampling the population. Since the total number of SACCOs in Western Kenya is less than 100 that is 16 SACCOs, the researcher will select all the SACCO's for the study (Census) using purposive sampling technique. According to Oso and Onen (2008), purposive sampling is a technique whereby the researcher consciously decides who to include in the sample. Sacco clients will be selected using population proportional to size (PPS) sampling

technique. Under population proportional to size sampling technique, respondents will be included in the sample depending on their numerical strength. Simple random sampling will be used because the study intends to select a representative sample without bias from the accessible population (Oso and Onen, 2008). This will ensure that each member of the target population has an equal and independent chance of being included in the sample.

3.5 Data Collection Method

The study will use Likert scale questionnaires to collect data from respondents who are members of the SACCO's and receive services from the various selected institutions. It will be used to obtain information and to provide an opportunity for the researcher to capture respondent's views on a whole range of issues related to ICT Adoption and financial performance of the SACCO's. This tool will be used to collect the primary data for the study. Questionnaires in general are needed to ensure uniformity, cost savings and time savings. The questionnaire schedule comprises of questions on personal data and questions relating to the three specific objectives of the study.

3.5.1 Data Source

The study will use both primary and secondary data. Primary data which will be collected from the selected SACCO's in Western Kenya while secondary data will be collected from published documents of SACCO's such as annual reports, audited accounts and journals for a period of 3 years (2015-2018).

3.5.2 Pilot Test

According to Fraenkel and Wallen (2000) validity refers to the appropriateness, meaningfulness and usefulness of any inferences as a researcher draws based on data obtained through the use of the instrument. A high reliability for the questionnaire is necessary but not sufficient criterion for

the adequacy of an instrument, it must be valid too. For data collection instrument to be considered valid the content selected and included in the questionnaire must be relevant to the need or gap establishment (Koul 1992).Validity of research instruments will be checked by discussing the content and the structure of the instruments with the supervisors and experts in Research. Cronbach alpha statistics will be used to measure the validity of coefficient. Reliability will be checked by piloting the questionnaires in Kericho County (not participating on the study) and a test-retest process will be done for the purpose of confirming consistency in answering the questions.

Kuder-Richardson approaches will be used by adopting the following equation

$$KR_{21} = \frac{K}{K-1}\left[1 - \frac{M(K-M)}{K(SD)^2}\right]$$

Where

K = number of items on the test
M = mean of the set of test scores
SD = standard deviation of the set of test scores. For research purposes reliability coefficient of 70% and above is desired. (Fraenkel & Wallen *et al*, 2000)

The reliability coefficient value will also tested for significance at $\alpha = 0.05$ using the following *t* test formula.

$$t_{ob} = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where

$n = k$ = number of items in the questionnaire

r = reliability coefficient.

d.f= degrees of freedom

the reliability test will be done in Kericho County

3.5.3 Instrument Validity

Kothari (2004) defines validity as the degree to which an instrument measures what it is supposed to measure. Content validity of the instrument will be ascertained through peer review and scrutiny by research experts, comprising of my supervisor, to ensure that the content in the questionnaire will be appropriate and relevant to the study. Expert opinion will be sought to check the content and format of the research instrument. According to Sekaran (2006), a panel of judges can attest to the content validity of the instrument he further observes that the closer the validity coefficient gets to 1.0, the better, and further that in general, validity less than 0.60 are considered to be poor, those in the range of 0.70 acceptable, and those over 0.80 good.

3.5.4 Instrument Reliability

According to Kothari (2004), a measuring instrument is reliable if it provides consistent results. This means that the instrument should give the same results if administered repeatedly. This study will use internal consistency technique to ensure reliability. Mugenda and Mugenda (2003) state that in this approach, a score obtained in one item is correlated with scores obtained from other items in the instrument. Cronbach's coefficient alpha (KR20) is then computed to determine how items correlate among themselves. The formula is as follows:-

$$KR20 = \frac{k\,(S^2 - \Sigma s^2)}{S^2\,(k-1)}$$

Where k = Number of items used to measure the concept

S^2 = Variance of all scores

s^2 = Variance of individual items

Uma (2006) observes that the closer the reliability coefficient gets to 1.0, the better, and further that in general, reliabilities less than 0.60 are considered to be poor, those in the range of 0.70 acceptable, and those over 0.80 good.

3.6 Data Analysis

Data responses will first be coded, entered, and checked for errors. Data will be analysed using both quantitative and qualitative analysis this will be used to seek the views for in depth investigation on ICT adoption and financial performance of Sacco's, while quantitative data analysis will be done through inferential and descriptive statistics which will include frequencies and percentages. The data obtained will be edited to eliminate errors and coded in readiness for analysis. Data analysis will be done using multiple regression model since it allows simultaneous investigation of the effect of two or more variables. The model will establish the relationship between ICT Adoption and Financial Performance of Sacco's.

The regression model:

$Y= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 = €$

Where Y= measure the key indicator being Financial Performance of Sacco's

β_0 =Constant

β_1 to β_3 =Regression coefficients

X_1= ICT Innovation

X_2= ICT Infrastructure

X_3= ICT Training

€ = Coefficient of error

The quantitative data will be analysed using descriptive statistics; mean, median, mode, dispersion and the findings will be presented in tabular form, graphs, percentages, pie charts and ratios (Robson, 2003).

The coefficient of multiple determination (R^2) will be used in this analysis to estimate the percentage of variation in the dependent variable that can be explained by the set of independent variables. McClave and Sincich (2003:598), regard this coefficient of multiple determination as a statistical quantity that shows how well the multiple regression model fits the data. They state that a value close to zero indicates a weak fit whereas a value close to one implies a good fit. The error in the estimate of the dependent variable from multiple independent variables will be measured by the multiple standard error of estimate. This is a measure of variability in predicting the dependent variable from a number of independent variables (Lind, Marchal and Mason, 2002:509). A small value indicates low variability whereas a large value shows high variability. Analysis of variance (ANOVA) statistics will be used to test the significant of the regression model.

According to Mady (2009:220), the selection of appropriate statistical techniques is very crucial, especially in studies where the sample size is small. Additionally, the application of inferential statistics depends on the assumptions of normality and homogeneity of variances. Further, in the analysis of variance, the assumption when using student's *t-test* is that the samples have been drawn from a normally distributed population with equal variances. Since descriptive and inferential statistics will be used in the analysis and interpretation of data, these assumptions will be adopted in this study. The *t-test* will be used to determine the ability of each of the independent variables in explaining the behaviour of the dependent variable. The t-distribution assumes that sampling is from a normally distributed population, but it is widely used in

situations where the sample is not normally distributed (Daniel and Terrell, 1992:260). The study will use t-test to show the significance of each independent variable in the regression model.

Chi-square ($\chi 2$) will be used to determine the relationship between the independent variable and the dependent variable. The technique compares the proportion observed in each category with what would be expected under the assumption of independence between the two variables. Level of significance considered will be at $\alpha=0.05$. These will form the basis of research interpretations, discussions, conclusions and recommendations.

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APPENDIX I: CONSENT FORM

I am Anna A. Ayoro an MBA finalist at Maseno University. In order to complete my Masters degree I am carrying out a research on ***the effect of ICT adoption on the financial performance of savings and credit co-operative societies in western Kenya***

CONSENT *If you consent, please indicate so by signing this form*

Purposes: *This Survey is purely for academic purposes. This study is purely meant for academic purposes. However findings will be disseminated to relevant authorities and other stakeholders with specific recommendations for quality improvement.*

Procedure: *The research involves administration of questionnaires and Key informant interviews to the subjects.*

Benefits: *There will be no direct benefits from participating in the study. However, the findings and recommendations of the study will benefit SACCOs.*

Risk*: There is no risk whatsoever involved in choosing to participate in the study.*

Confidentiality*: All information provided during this study will be treated with total confidentiality with regard to the actual person who gave that data.*

Right to refuse or withdraw*: The subject's participation in the study is entirely voluntary and one is free to refuse to take part or withdraw at any stage of study without any consequences.*

I wilfully agree to participate in this study:

SIGNATURE …… DATE:…….....

APPENDIX II: QUESTIONNAIRE FOR SACCO CLIENTS

This questionnaire is designed to gather information on the effect of ICT adoption on the financial performance of savings and credit co-operative societies in Western Kenya. Please don't put your name anywhere on the questionnaire. Indicate response by ticking (√) appropriately in the box.

Section A: Demographic Information

1. What is your age bracket? Tick (√) in the space provided.

25 – 30 years [ ] 31 – 35 years [ ] 36 – 40 years [ ]

41 – 45 years [ ] 46 – 50 years [ ] 51 years and above [ ]

2. What is your gender?

Male [ ] Female [ ]

3. How long have you been a client of this SACCO?

0 – 5 years [ ] 6 – 10 years [ ] 11 – 15 years [ ]

16 – 20 years [ ] 24 years and above [ ]

4. State your profession? _____

5. What is your academic and professional qualification?

Certificate [ ] Diploma [ ] Degree [ ] Masters [ ]

Any other (specify) _____

Section B:

For the following statements, indicate your opinion on the effect of ICT Innovation on the financial performance of savings and credit co-operative societies in Western Kenya depending on whether you strongly agree, agree; fairly agree; disagree; or strongly disagree. Key: strongly agree (5); agree (4); fairly agree (3); disagree (2); strongly disagree (1)

ICT Innovation on the financial performance of savings and credit co-operative societies in Western Kenya

	5	**4**	**3**	**2**	**1**
1. ICT Innovation has improved services					
2. ICT Innovation has improved efficiency					
3. ICT Innovation has improved effectiveness					
4. ICT Innovation has improved on time spent in SACCO's					
5. ICT Innovation has attracted many clients					

Section C:

For the following statements, indicate your opinion on ICT infrastructure on the financial performance of savings and credit co-operative societies in western Kenya depending on whether you strongly agree, agree; fairly agree; disagree; or strongly disagree. Key: strongly agree (5); agree (4); fairly agree (3); disagree (2); strongly disagree (1)

ICT infrastructure on the financial performance of savings and credit co-operative societies in western Kenya

	5	**4**	**3**	**2**	**1**
1. ICT Infrastructure has improved services					
2. ICT Infrastructure has improved efficiency					
3. ICT Infrastructure has improved effectiveness					
4. ICT Infrastructure has improved on client time spent in SACCO's					
5. ICT Infrastructure has attracted many clients					

Section D:

For the following statements, indicate your opinion on ICT Training on the financial performance of savings and credit co-operative societies in western Kenya depending on whether you agree; fairly agree; disagree; or strongly disagree.

Key: strongly agree (5); agree (4); fairly agree (3); disagree (2); strongly disagree (1)

ICT Training on the financial performance of savings and credit co-operative societies in western Kenya

	5	**4**	**3**	**2**	**1**
1. ICT Training has improved services					
2. ICT Training has improved efficiency					
3. ICT Training has improved effectiveness					
4. ICT Training has improved on client time spent in SACCO's					
5. ICT Training has attracted many clients					

APPENDIX III: INTERVIEW SCHEDULE FOR CEO

1. Opening

A. (Establish Rapport) [shake hands]

My name is Anna Ayoro an MBA finalist at Maseno University. In order to complete my Masters degree I am carrying out a research on ***the effect of ICT adoption on the financial performance of savings and credit co-operative societies in western Kenya*** you have been selected to participate in this study. If you consent kindly sign the consent form so that we can begin when you are ready. The interview should take about 20 minutes.

B. (Purpose)

I would like to ask you some questions about your background, your job title, some experiences you have had, and some information about this institution. (Transition: Let me begin by asking you some questions about your job)

A. General demographic information

1. What is your job title?

2. How long have you been working in this Organization?

3. How many employees does the SACCO have?

B. What is the effect of ICT Innovation on the financial performance of savings and credit co-operative societies in Western Kenya?

1. What is your level of ICT adoption?

2. What would reinforce use of the ICT adoption in your opinion?

3. Has the ICT adoption made it easier to do your job? how?

4. How is the systems interface? is it easy to use.

5. What role do you as play in ensuring continued use of the system?

C. What is the effect of ICT infrastructure on the financial performance of savings and credit co-operative societies in Western Kenya?

1. Has the information system brought any benefits to your organization?

2. What were your main reasons for supporting information systems?

3. Did you fear that the new technology may fail at some point?

4. What challenges have you experienced in using ICT?

5. How do factors like age and level of education influence the utilization of the system?

D. What is the effect of ICT Training on the financial performance of savings and credit co-operative societies in Western Kenya?

1. How would you rate your employee's computer knowledge?

2. Did you encounter any problems with the users at the time of implementing the information system?

3. Did the users have prior experience with information systems at the time of implementation?

4. Did you have IT support personnel to train the users?

5. In your view, does the system offer up to date information in time to make the necessary decisions? Give instance(s)

APPENDIX III: INTERVIEW FOR SACCO EMPLOYEES/STAFF

1. How would you rate the level of service satisfaction at the SACCO
2. What would you recommend to improve the current status
3. Electronic transactions are they reliable
4. Is the SACCO website up to date and responsive
5. Does the SACCO provide Mobile Banking services

Appendix IV
Table of Sample Size Selection

Size of population	Sample size (n) Precision (e) of:			
	± 3%	± 5%	± 7%	± 10%
500	A	222	145	83
600	A	240	152	86
700	A	255	158	88
800	A	267	163	89
900	A	277	166	90
1000	A	286	169	91
2000	714	333	185	95
3000	811	353	191	97
4000	870	364	194	98
5000	909	370	196	98
6000	938	375	197	98
7000	959	378	198	99
8000	976	381	199	99
9000	989	383	200	99
10000	**1000**	**384**	**200**	**99**
15000	1034	390	201	99
20000	1053	392	204	100
25000	1064	394	204	100
50000	1087	397	204	100
100000	1099	398	204	100
>100000	1111	400	204	100

Source: *Glenn, D. Israel (1992)*