

# Relationship between Portfolio Diversification and Financial Sustainability of Deposit Taking Savings and Credit Cooperative Societies in Kenya

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**Abstract:** Savings and Credit Cooperative societies are key players in the financial sector of a country through provision of savings and credit advancements thus they are an important part of a financial system. Deposit Taking Savings and Credit Cooperative Societies are SACCOs that take demand deposits, and thus offer withdraw-able savings accounts services similar to those offered by Banking Institutions. In Kenya, DT-SACCOs are struggling in serving their members' financial needs consistently partly due to weak financial governance. Inability to adapt to financial market dynamics meant that many DT-SACCOs have not been able to survive in the long-term. According to SACCO Societies annual report of the year 2016, 7 DT-SACCOs were unable to maintain the prescribed core capital of Kshs. 10 Million. Only 69 DT-SACCOs were able to maintain and comply with the prescribed institutional capital to total assets ratio of 8% meaning that majority of DT-SACCOs failed to comply with this key regulatory minimum. Moreover, the ratio of non-performing loans to gross loans increased from 5.12% in year 2015 to 5.23% in year 2016 as a result of increase from Kshs.13.21 billion to Kshs.15.57 billion in the same period. This implied that DT-SACCOs had financial sustainability problems. It is against this problem that the researcher decided to establish the relationship between portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies in Kenya. The specific objectives of the study were based on income optimization and risk management. The study was guided by theories; financial theory of investment and modern portfolio theory. This study applied qualitative descriptive research design and purposive sampling design. Content analysis was used to analyze the data. Findings from the reviewed empirical studies related to portfolio diversification and financial sustainability of deposit taking Savings and credit cooperative societies indicated that financial sustainability was influenced by income optimization and risk management.

**Key words:** Financial sustainability, portfolio diversification, income optimization, risk management

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## I. Introduction

Savings and Credit Cooperative Societies are incorporated for the purposes of mobilizing savings, advancing credit facilities and offering financial advisory services to its members (Sebhatu, 2012). Savings and Credit Cooperative Societies are key players in the financial sector of a country through provision of savings and credit advancements. Apart from the aforementioned roles, SACCOs engage in economic growth based activities such as security investments and housing functions meant to provide more returns to the members. SACCOs are principally divided into two major classifications that are differentiated by the nature of savings and deposits they mobilize from their members (Ndiege, Qin, Kazungu, & Moshi, 2014). SACCOs are either non-deposit-taking or deposit-taking institutions. The non-DT-SACCOs are those that mobilize deposits from their members which are strictly utilized as collateral for credit facilities. The DT-SACCOs are those that apart from SACCO general services, they take demand deposits and withdraw-able savings accounts similar to the ones offered by banking institutions.

Conventional financial institutions such as commercial banks consider the poor and low income earners as high risk and difficult to serve because the small loans they need are costly to make and maintain (Ndiege *et al.*, 2014). Therefore, they are perceived as low profitable and high risk, hence the reason for being ignored. SACCOs provide a variety of services to the poor, low income households and small enterprises to enable them to be economically empowered. Access to savings and credit services as a strategy of improving livelihoods and mechanism for poverty alleviation has gained prominence particularly in the developing countries. This has resulted to the emergence of DT-SACCOs that have increased access to financial services. However, some DT-

SACCOs have struggled to continue operating consistently for significant number of years in Sub-Saharan Africa.

DT-SACCOs ought to be sustainable in the long-run in order to effectively continue mobilizing savings, giving credit and investing for the common benefit of members (Ndiege *et al.*, 2014). Sustainability entails ability to continue any given activity into the future within the likely existing resources of an organization. An Organization is termed sustainable if it is able to operate consistently in the long-term despite business environmental challenges. A DT-SACCO is considered sustainable if operating income from loans and other investing activities are sufficient to cover all the operating costs and able to retain part of earnings in a consistent manner.

Financial sustainability is a goal that all deposit taking savings and credit cooperative societies strive for since it enables them to consistently cover costs and prioritize activities so as to accomplish missions without undue struggles (Sebhatu, 2012). It is usually attained when organizations pursue income-generating opportunities that yield returns above market conditions. Need for financial sustainability calls for adoption of portfolio diversification. With changing business needs and customer preferences, financial sustainability has remained low due to slow embrace to portfolio diversification among deposit taking savings and credit cooperative societies in developing countries. This is due to lack of response to dynamism through portfolio diversification. In some cases, financial sustainability of DT-SACCOs is deterred by market risks that lead to significant financial losses.

Portfolio diversification involves organization's engagement in different activities and investing in different financial securities in an attempt to reduce overall investment risk and to avoid damaging a portfolio's performance by the poor performance of a single security (Essendi, 2013). The spread of capital amongst different activities and investments to avoid relying on a single activity or investment for returns is an important undertaking that enhance financial sustainability. Portfolio diversifications are achieved through capital spread among different assets and investments such as shares or property and generally provide longer term capital gains. On the other hand, cash or fixed interest generally has a lower level of volatility and risk that makes organization sustainable. For instance, during periods of increased share market volatility, share portfolio may suffer losses. For organizations that hold investments in other asset classes such as fixed interest or direct property that may perform better over the same period, the returns from these investments can enhance the returns of the overall investment portfolio. Therefore, organization with more consistent investment returns over the medium to longer term is the one that has adopted portfolio diversification.

Kenya is a developing country where most citizens are middle and low income earners. DT-SACCOs in the country engage in savings mobilization, provision of credit loans and improving financial deepening among the members. DT-SACCOs are struggling in serving their members' financial needs consistently partly due to weak financial governance and sustainability problems. Many of them have been unable to meet and maintain minimum capital requirements meaning that they cannot survive in the turbulent financial market. According to SACCO Societies annual report of the year 2016, 7 DT-SACCOs were unable to maintain the prescribed core capital of Kshs. 10 Million. It was also indicated that only 69 DT-SACCOs were able to meet prescribed ratio 8% in institutional capital to total assets. The ratio of non-performing loans to gross loans increased from 5.12% in year 2015 to 5.23% in year 2016 due to increase from Kshs.13.21 billion to Kshs.15.57 billion in the same period indicating existence of financial sustainability problems among DT-SACCOs.

## **II. Research Problem**

Deposit taking Savings and Credit Cooperative Societies are expected to contribute towards financial transformation of a country through savings and provision of credit facilities particularly to the middle and low income earners. In Kenya, DT-SACCOs are struggling in serving their members' financial needs consistently partly due to weak financial governance. Inability to adapt to financial market dynamics mean that many DT-SACCOs have not been able to survive in the long-term. According to SACCO Societies annual report of the year 2016, 7 DT-SACCOs were unable to maintain the prescribed core capital of Kshs. 10 Million. Only 69 DT-SACCOs were able to maintain and comply with the prescribed institutional capital to total assets ratio of 8% meaning that majority of DT-SACCOs failed to comply with this key regulatory minimum. Moreover, the ratio of non-performing loans to gross loans increased from 5.12% in year 2015 to 5.23% in year 2016 as a result of increase from Kshs.13.21 billion to Kshs.15.57 billion in the same period. Portfolio diversification is an important response to changing financial needs of the SACCOs' members. It is a requisite for risk management and income diversification. However, in Kenya, portfolio diversification in DT-SACCOs is yet to be fully adopted and those who have embraced do not manage it effectively thus most are financially unsustainable. Previous studies are yet to link portfolio diversification to financial sustainability in deposit taking savings and credit cooperative societies. It is against this knowledge gap that the researcher sought to establish the relationship between portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies in Kenya.

### **III. Objectives of the study**

The general objective of the study was to establish the relationship between portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies in Kenya. The specific objectives of the study included the following;

- i. To determine the effect of income optimization on financial sustainability of deposit taking savings and credit cooperative societies in Kenya.
- ii. To establish the influence of risk management on financial sustainability of deposit taking savings and credit cooperative societies in Kenya.

### **IV. Research Questions**

1. What is the effect of income optimization on financial sustainability of deposit taking savings and credit cooperative societies in Kenya?
2. Does risk management affect financial sustainability of deposit taking savings and credit cooperative societies in Kenya?

### **V. Review of Literature**

Literature review outlines the theories, conceptual framework, literature on study variables and empirical studies. It provides more insights and understanding of portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies.

#### **5.1 Theoretical Review**

The researcher has reviewed theories that are relevant to the study. They include: financial investment theory and modern portfolio theory.

##### **5.1.1 The Financial Theory of Investment**

The financial theory of investment was first developed by James Duesenberry in 1949. It is also known as the cost of capital theory of investment. Financial theory of investment states that the supply of funds in any time period at the market rate of interest is scarce (Nell & Forstater, 2003). When more funds for investment spending are required, the rate of interest rises. Therefore, to finance investment spending, the organization may borrow in the market at whatever interest rate funds are available. Sources of funds available to the organization include; retained earnings, debt and equity. Retained earnings are the cheapest source of funds because the cost of using these funds is very low in the short run. There is no risk involved in spending these retained earnings or to repay debt. Cost of using retained earnings is the opportunity cost which is the return that the firm could obtain to repay debt or to buy the shares of other companies (Nell & Forstater, 2003).

Opportunity cost of internal funds will be less than the cost of external funds. When an organization needs funds more than the retained earnings, it borrows from the banks or through the bond market. The cost of borrowed funds rises with the amount of borrowing. As the ratio of debt service to earnings from investment of funds rises, the marginal cost of borrowed funds rises. This is because the opportunity cost of not repaying debt increases. The imputed cost of equity funds is more costly than the opportunity cost of retained earnings or borrowed funds. The financial theory of investment explains the portfolio diversification and financial sustainability. The aspect of cost has implications on the income optimization of DT-SACCOs. Use of debt subjects DT-SACCOs to risks thus affecting their financial sustainability.

##### **5.1.2 Modern Portfolio Theory**

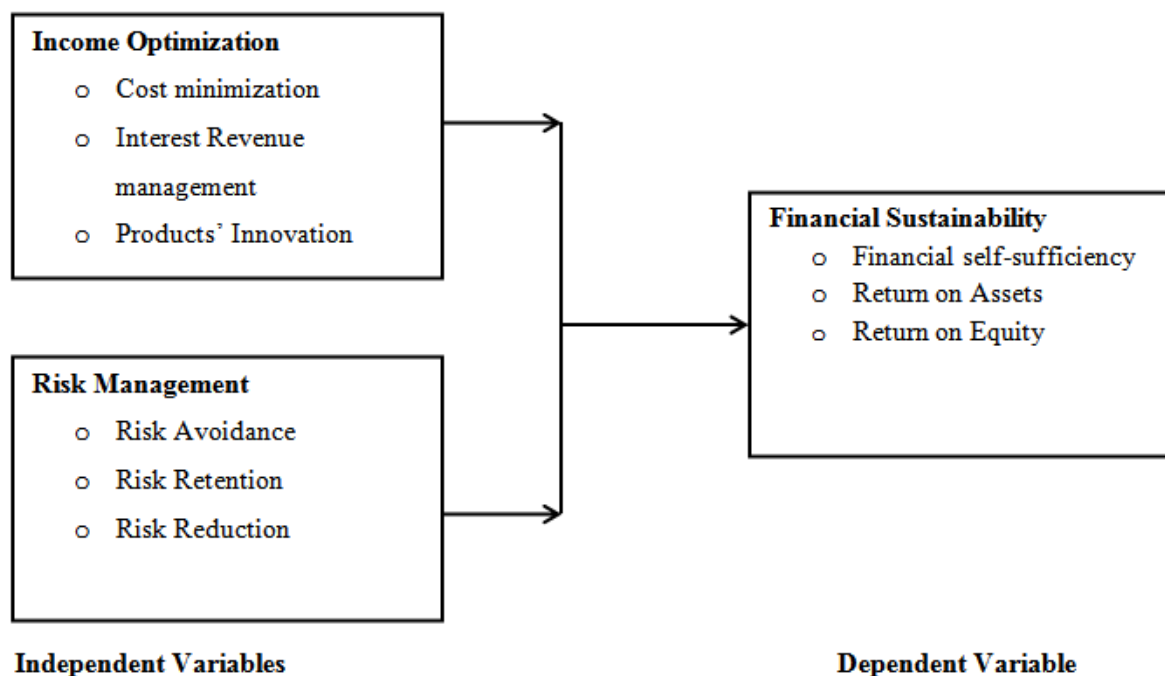
Modern portfolio theory was introduced in a 1952 essay by Harry Markowitz in the Markowitz model. Modern Portfolio Theory describes the selection of investments that comprise a portfolio in an organization. Modern Portfolio Theory (MPT) is an investing model where the investor attempts to take minimal level of market risk to capture maximum-level returns for a given portfolio of investments. It suggests that investment securities should be combined in such a way as to reduce market risk through diversification while achieving optimal returns in the long run. At the core of investment philosophy, every investor would like to achieve the highest possible long-term returns possible without taking extreme levels of short-term market risk (Haugen & Haugen, 2001).

According to MPT, an investor can hold a particular asset type or security that is high in risk individually but, when combined with several other asset types or investments, the whole portfolio can be balanced in such a way that its risk is lower than some of the underlying assets or investments. MPT assumes that an investor wants to maximize a portfolio's expected return contingent on any given amount of risk. For portfolios that meet this criterion, known as efficient portfolios, achieving a higher expected return requires

taking on more risk, so investors are faced with a trade-off between risk and expected return (Haugen & Haugen, 2001).

## 5.2 Conceptual Framework

Conceptual framework indicates the association between the independent and dependent variables. Figure 2.1 illustrates the relationship between portfolio diversification (income optimization and risk management) and financial sustainability.



**Figure 1:** Conceptual Framework

## 5.3 Literature on study Variables

The researcher has discussed the study variables income optimization, risk management and financial sustainability.

### 5.3.1 Income Optimization

Income optimization entails investment in many assets or engaging in various different activities with a purpose of generating optimal returns and reducing risks (Mathuva, 2016). Income optimization is achieved through cost minimization which is the task of trying to reduce costs. Cost minimization aims to achieve the most cost-effective way of delivering services to the required level of quality. Cost minimization requires an organization to maintain profitability without compromising the quality of services (Mathuva, 2016). As such, businesses always want to operate at lower costs and generate high levels of returns. Cost minimization increase asset turnover and reduce cost of transaction processing. Benefits to cost minimization include lower unit costs, higher profit margin, higher operating profits, improved cash flow, and higher return on equity that improves financial sustainability.

Financial sustainability in DT-SACCOs is determined by interest rates revenues that are part of income optimization. Interest rate is the proportion of the amount of money borrowed from a deposit taking savings and credit cooperative society (Essendi, 2013). Interest is charged on loans, to cover the interest cost on savings and the cost of administration. The level of interest indicates whether the income of the SACCO is at optimal level or not. As such, interest rates have a direct link to the financial sustainability of deposit taking savings and credit cooperative societies.

Innovation involves creation of more effective processes, products, and ideas that are important in achieving financial sustainability of DT-SACCOs (Lagat, Mugo, & Otuya, 2013). Innovation in the context of Saccos could mean implementing, improving services or creating dynamic products for the members in order to optimize income. It acts as catalysts that can make business grow and adapt in the market in which saccos operates thus determine their survival. Making changes in the existing environment to deliver better products or services is a requisite for financial sustainability. Successful innovation creates a culture of innovation and makes a way for creative thinking. It also creates more efficient processes that can result in better productivity and

performance (Lagat *et al.*, 2013). Adopting and creating new ideas leads to growth beyond competition and environmental dynamism.

### **5.3.2 Risk Management**

Risk management is the identification, assessment, and prioritization of risks or uncertainties followed up by minimizing, monitoring and controlling the impact of risk realities or enhancing the opportunity potential by applying coordinated and economical resources (Essendi, 2013). It lays foresight for returns on investments and projects. Risk management makes organizations sustainable. Risks in DT-SACCOs can be managed through avoidance, reduction, sharing and retention. The best case scenario for DT-SACCO to achieve sustainability is to avoid risk repercussion altogether (Essendi, 2013). However, in forfeiting all activity that carries risk, a Sacco can also forfeit all associated potential return and opportunity. Risk reduction is an element that implements changes to reduce the weight of both risk and reward. It requires some process and plan manipulation to save DT-SACCO from a severe loss in the case of a high-risk manifestation. Risk retention involves assuming the loss or gain, entirely in an organization. However, is suitable for little risks where the losses can be easily absorbed.

Financial risks affect financial sustainability of deposit taking savings and credit cooperative societies. Financial risks are in the form of high inflation, volatility in capital markets, recession, and bankruptcy (Allen & Maghimbi, 2009). So, in order to minimize and control the exposure of investment to such risks, managers and investors practice risk management. Not giving due importance to risk management while making investment decisions might wreak havoc on investment in times of financial turmoil in an economy. Different levels of risk come attached with different categories of asset classes in deposit taking savings and credit cooperative societies.

### **5.3.3 Financial Sustainability**

Financial sustainability is the degree that an institution is capable of generating sufficient revenue from offered services to meet full operating costs and retain some earnings (Quayes, 2012). Financial sustainability is achieved when organization earns sufficient income from its own earned revenue sources to cover all administrative or operational expenses but relies on wholly or partially subsidized capital base. Importance of financial sustainability in DT-SACCOs is critical for expanding outreach to achieve the primary objective of reaching the poorer segments of society. Financial sustainability may require higher interest rates and more diverse loan portfolios that include larger loans and loans to more affluent borrowers that can compensate for higher transaction costs. Sustainable organizations improve welfare, the most, and that unsustainable DT-SACCOs inflict costs on the poor in excess of the gains they enjoy. Financial sustainability is indicated by operational self-sufficiency, financial self-sufficiency, Return on Assets and Return on Equity (Marwa & Aziakpono, 2015).

### **5.4 Empirical Review**

Past empirical studies that are related to portfolio diversification and financial sustainability have been reviewed. Ndiege, Qin, Kazungu, and Moshi (2014) did a study on the impacts of financial linkage on sustainability of less-formal financial institutions. They used Tanzania SACCOS' financial statement data, for the period of 2004–2011, and panel data regression model to examine the relationship between financial linkage of less-formal financial institutions. Their findings indicated that financial sustainability of SACCOs was reduced by increased financial linkage. Use of external funds in the loan portfolio and failure to manage them well made SACCOs more unsustainable.

Mbewa and Jagongo (2012) did a study on financial practice as a determinant of growth of savings and credit co-operative societies' wealth. According to their findings, growth of SACCOs was determined by financial stewardship, capital structure and funds allocation strategy. Failure to comply with existing laws meant that they were not able to adequately cover their costs. Financial unsustainability was contributed by lack of review credit policies, irrecoverable loan provision policies, sound staff recruitment policies and inappropriate financing mix. It was also revealed that Government did not adequately review legal framework to ensure that institutional capital is used to grow Sacco's wealth sustainably.

Sebhatu (2012) investigated management of savings and credit cooperatives from the perspective of outreach and sustainability. Findings revealed that there was strong positive correlation between Return on Asset and the asset utilization. There was a relationship between operational efficiency and assets size of SACCOs. There existed association between financial performance and the operational efficiency. Findings showed that lack of awareness and poor saving culture, weak organizational arrangement and governance, policy and regulatory environment, weak institutional capacity, low capital base, lack of differentiated products, inappropriate loan security requirements affected the outreach and sustainability of SACCOs.

Kinde (2012) did a study on financial sustainability of microfinance institutions (MFIs) in Ethiopia. The study used a quantitative research approach using a balanced panel data set of 126 observations from 14 MFIs over the period 2002-2010. The study found that microfinance breadth of outreach, depth of outreach, dependency ratio and cost per borrower affect the financial sustainability of microfinance institutions in Ethiopia. However, the microfinance capital structure and staff productivity had insignificant impact on financial sustainability of MFIs in Ethiopia for the study periods.

Absanto and Aikaruwa (2013) did a study on credit rationing and loan repayment performance. Findings revealed that major factors used by SACCOS for credit rationing were Savings, deposits, group guarantee, asset collateral, guarantors, sex and age. It was also revealed that among the factors that were used for credit rationing in SACCOS age influenced loan repayment performance. From the findings, it was concluded that SACCOS's credit rationing process was weak since it failed to discriminate between credit worthy and non-credit worthy borrowers and thus resulting into poor loan repayment performance.

Alufohai (2006) did a research study on sustainability of farm credit delivery by Cooperatives and NGOs in Edo and Delta states, Nigeria. They employed descriptive and quantitative statistics as well as financial analysis in analyzing the data. Findings indicated low capital formation rate of 0.1815 and 0.123 for cooperatives and NGOs respectively. Cooperatives had zero SDI, having no subsidies throughout the period while NGOs had an SDI of 0.7642 which is considered too high for them to sustain the credit delivery function on the withdrawal of subsidies. Though with low loan volumes, the study showed cooperatives more likely to sustain the credit delivery function than the NGOs, but they may need to improve their capital formation rate.

Musafiri-Papias and Ganesan (2009) undertook a study on repayment behaviour in credit and savings cooperative societies using empirical and theoretical evidence from rural Rwanda. The results from the tested empirical model show that age, gender and size of the household, purpose for credit, interest rate charges and number of official visits to the credit societies, had a strong effect on loan repayment performance that was statistically significant at  $p < 0.05$  while size of credit disbursed, credit processing and disbursing time, borrowers' market place and income transfer from relatives and friends are more or less statistically significant at  $p < 0.20$  level.

Nyambere (2013) carried out a study on the effect of credit risk management on financial performance of deposit taking savings and credit co-operative societies in Kenya. Findings indicated that there was positive relationship between return on equity and all the tested independent variables at 0.179, 0.063, 0.240, 0.003 and 0.160 for Capital Adequacy, Asset Quality, Management Efficiency and Earnings Liquidity respectively.

Barus, Muturi, Kibati, and Koima (2017) did a study on the effect of capital adequacy on the financial performance of savings and credit societies in Kenya. Their findings showed that capital adequacy influenced the financial performance of savings and credit societies in Kenya. Regression results showed that relationship between capital adequacy and financial performance was positive and significant. The coefficient of determination was 0.86 implying that capital adequacy explained 86% of the financial performance of SACCOS in Kenya. Moreover, findings indicated that the overall model was statistically significant as supported by a p value of 0.000 thus capital adequacy was good predictor of financial performance as supported by an F statistic of 565.18 and the reported p value (0.000) which was less than the conventional probability of 95% confidence level.

## **VI. Research Methodology**

This section outlines research design, sampling design and data analysis.

### **6.1 Research Design**

Research design is the framework of methods and techniques chosen by a researcher to combine various components of research in a reasonably logical manner so that the research problem is efficiently handled (Bryman, 2016). It provides insights about how to conduct research using a particular methodology. This study applied qualitative descriptive research design. It aided comprehensive summarization of journal articles leading to establishment of the relationship between portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies in Kenya.

### **6.2 Sampling Design**

Sampling is the process of selecting a representative group from the population under study (Bryman, 2016). It is also a process of selecting a sample of the respondents for the study in such a way that the individuals selected represent the population from which they were selected from. This paper applied purposive sampling design. Therefore, journal articles and books were selected based on the information they had concerning portfolio diversification and financial sustainability of DT-SACCOS in Kenya.

### **6.3 Data Analysis**

Data analysis is the process of evaluating data using analytical and logical reasoning to examine each component of the data provided (Punch & Oancea, 2014). It can also be termed as the process of extracting, compiling, and modeling raw data for purposes of obtaining constructive information that can be applied to drawing conclusions about a problem or need. In this paper, content analysis was used to analyze data. It is a suitable data analysis method for manifestation of content information sources such as journals. It helped in analyzing the already existing data related to portfolio diversification and financial sustainability.

## **VII. Findings**

Findings from the reviewed empirical studies related to portfolio diversification and financial sustainability of deposit taking savings and credit cooperative societies indicated that financial sustainability was influenced by income optimization and risk management.

### **7.1 Income Optimization**

The researcher aimed at establishing the relationship between income optimization and financial sustainability. Therefore, the first research question was; What is the effect of income optimization on financial sustainability of Deposit taking Savings and credit cooperative societies? From the reviewed empirical studies, income is optimized when a SACCO is able to adequately manage its available funds, utilize them and generate sustainable returns. Ndiege *et al* (2014) found that SACCOs failed to utilize the external funds in the loan portfolio leading to financial unsustainability. Mbewa and Jagongo (2012) showed that SACCOs failed to achieve financial sustainability due to inability to optimize income by minimizing costs. Their research showed that SACCOs were not able to adequately cover their costs to be sustainable.

Findings further showed that income optimization as an element of portfolio diversification is promoted by products innovation and asset utilization. Sebhatu (2012) found strong and positive correlation between Return on Asset as a measure of financial performance and the asset utilization. Financial sustainability is also indicated by operational efficiency and the study found a significant relationship between operational efficiency and assets size of SACCOs. Financial sustainability is dependent on the interest revenue management by DT-SACCO.

### **7.2 Risk Management**

The study sought to determine the relationship between risk management as an element of portfolio diversification and financial sustainability. As such, the second research question was; Does risk management affect financial sustainability of deposit taking savings and credit cooperation societies? From the empirical findings of various researchers, risk management was found to have a significant relationship with financial sustainability. Absanto and Aikaruwa (2013) found that asset collateral and guarantors affected credit rationing and loan repayment performance. Weak credit rationing process exposed SACCOs to risks leading to unsustainability due to failure to advance credit based on credit worthiness. Alufohai (2006) found low capital formation rate of 0.1815 and 0.123 for cooperatives and NGOs respectively that made them unsustainable. Though with low loan volumes, the study showed cooperatives more likely to sustain the credit delivery function than the NGOs, but they may need to improve their capital formation rate.

Musafiri-Papias and Ganesan (2009) found that purpose for credit, interest rate charges and number of official visits to the credit societies, had a strong effect on loan repayment performance which is an element of risk that was statistically significant at 95% confidence level. Nyambere (2013) indicated that credit risk management determined financial sustainability and performance of SACCOs. He found positive relationship between return on equity and Capital adequacy, asset quality, management efficiency and earnings liquidity risks.

## **VIII. Conclusions**

It can be concluded that portfolio diversification has a direct link to financial sustainability of Deposit Taking Savings and Credit Cooperative Societies in Kenya. Based on the findings of reviewed empirical studies, income optimization and risk management elements of portfolio diversification have been found to determine whether the DT-SACCO is sustainable or not. Portfolio diversification aims at minimizing risks and maximizing returns. Sustainable DT-SACCOs have reduced risks and maximize returns on consistent basis. Therefore, the findings have showed that the problem facing financial sustainability of DT-SACCOs can be attributed to lack of appropriate portfolio diversification hence inability to adequately reduce risks and optimize returns in the long run.

## IX. Recommendations

Based on the findings from empirical studies related to portfolio diversification and financial sustainability on DT-SACCOs, the researcher makes the following recommendations:

- ✚ Deposit taking savings and credit cooperative societies should establish and implement appropriate revenue optimization strategies to ensure consistent income generation.
- ✚ Deposit taking savings and credit cooperative societies are recommended to adopt effective risk management approaches to avoid unnecessary losses in order to be financially sustainable.

## X. Suggestions for further studies

The researcher suggests that further studies should be undertaken on the influence of credit management practices on financial sustainability of DT-SACCOs and effect of SACCO regulations on financial sustainability of Deposit taking savings and credit cooperative societies.

## References

- [1]. Allen, E., & Maghimbi, S. (2009). *African cooperatives and the financial crisis*. Geneva: ILO.
- [2]. Alufohai, G. O. (2006). Sustainability of Farm Credit delivery by Cooperatives and NGOs in Edo and Delta states, Nigeria. *Educational Research and Reviews*, 1(8), 262-266.
- [3]. Barus, J. J., Muturi, W., Kibati, P., & Koima, J. (2017). Effect of Capital Adequacy on The Financial Performance of Savings and Credit Societies in Kenya. *American Journal of Finance*, 1(4), 1-12.
- [4]. Bryman, A. (2016). *Social research methods*. Oxford university press
- [5]. Essendi, L. K. (2013). The effect of credit risk management on loans portfolio among Saccos in Kenya. *Unpublished MBA Research Project, University of Nairobi*.
- [6]. Flaschel, P., Greiner, A., & Luchtenberg, S. (2012). Labor market institutions and the role of elites in flexicurity societies. *Review of Political Economy*, 24(1), 103-129.
- [7]. Kinde, B. A. (2012). Financial sustainability of microfinance institutions (MFIs) in Ethiopia. *European Journal of Business and Management*, 4(15), 1-11.
- [8]. Lagat, F. K., Mugo, R., & Otuya, R. (2013). Effect of credit risk management practices on lending portfolio among savings and credit cooperatives in Kenya.
- [9]. Marwa, N., & Aziakpono, M. (2015). Financial sustainability of Tanzanian saving and credit cooperatives. *International Journal of Social Economics*, 42(10), 870-887.
- [10]. Mathuva, D. (2016). Revenue diversification and financial performance of savings and credit cooperatives in Kenya. *Journal of Co-operative Organization and Management*, 4(1), 1-12.
- [11]. Mbewa, M. O., & Jagongo, A. (2012). Financial practice as a determinant of growth of savings and credit co-operative societies' wealth. *International Journal of Business and Social Science*, 3(24).
- [12]. Musafiri Papias, M., & Ganesan, P. (2009). Repayment behaviour in credit and savings cooperative societies: Empirical and theoretical evidence from rural Rwanda. *International Journal of Social Economics*, 36(5), 608-625.
- [13]. Ndiege, B. O., Qin, X., Kazungu, I., & Moshi, J. (2014). The impacts of financial linkage on sustainability of less-formal financial institutions: Experience of savings and credit cooperative societies in Tanzania. *Journal of Co-operative Organization and Management*, 2(2), 65-71.
- [14]. Nyambere, F. K. (2013). Effect of credit risk management on financial performance of deposit taking savings and credit co-operative societies in Kenya. *Unpublished MBA Project, University of Nairobi*.
- [15]. Punch, K. F., & Oancea, A. (2014). *Introduction to research methods in education*. Sage.
- [16]. Qin, X., & Ndiege, B. O. (2013). Role of financial development in economic growth: Evidence from savings and credit cooperative societies in Tanzania. *International Journal of Financial Research*, 4(2), 115.
- [17]. Quayes, S. (2012). Depth of outreach and financial sustainability of microfinance institutions. *Applied Economics*, 44(26), 3421-3433.
- [18]. SASRA. (2016). Annual report on supervision of Deposit Taking Savings and Credit Cooperative Societies for the year 2016.
- [19]. Sebhata, K. T. (2012). Management of savings and credit cooperatives from the perspective of outreach and sustainability: Evidence from Southern Tigray of Ethiopia. *Research Journal of Finance and Accounting*, 2(7-8), 10-23.