

# Effect of Investment Portfolio Diversification on Financial Performance of Deposit Taking Savings and Credit Cooperatives in Kenya

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**Abstract:** The study seeks to determine the effect of investment portfolio on financial performance of Deposit Taking Savings and Credit Cooperatives (DT-SACCOs) in Kenya. The study used the modern portfolio theory. The study adopted descriptive survey research design. The target population was the 135 DT-SACCOs that were licensed before the study period and have operated for last five years of the study. The chief finance officers of each SACCO were required to fill the questionnaires. Data was analysed with the help of SPSS version 23. Descriptive and inferential statistics was used to analyse data. The descriptive statistics involved frequency, mean and standard deviation. The inferential statistics involved bivariate correlation and multivariate regression analysis. The study findings indicated that the Investment portfolio had a statistically significant effect on financial performance of DT-SACCOs in Kenya. Study therefore concludes that investment portfolio diversification has a significant effect on financial performance of DT-SACCOs in Kenya. The study recommends that management of Deposit taking Sacco's should continue improving on their investment portfolio diversification by bringing in more financial products to the portfolio.

**Keywords:** Deposit taking Savings and credit cooperatives, financial performance and Investment Portfolio.

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## 1. INTRODUCTION

Derek (2015) defines investment portfolio diversification as a way of managing portfolio whereby an investor diminishes instability and risks of her/his set of portfolio through holding a range of unlike investments are lowly correlated with one another. Cernas (2011) defines investment portfolio diversification as a strategy of managing portfolio through bringing together diverse investments to so as to lower the general risk associated with investment portfolio. On the other hand, asset diversification is a group strategy joining together more than one investment so as to lower the whole investment portfolio risk (Dimitriou, 2012). According to Dimitriou (2012), income diversification as a fundamental principle of sound investing. The aim of income diversification is to realize revenues for allowed risk margin by combination of different classes of investments in a way that is well calculated. This allow for smoothening the variability in returns achieved in each asset class. According to Perez (2015), bank assets include loans, financial assets, cash, other assets and premises.

### *Statement of the Problem*

Prudent management of risks ensures that the financial earning capacity of a firm is enhanced and guarantees future firm growth. Entire business activities involve some degree of risks thus must be undertaken by assuming risks. The returns from investing in a business are a compensation for the risk born by the owner of the business. Investment portfolio diversification can enable DT-SACCOs to lower their overall exposure to risks of financial nature. This will ensure that they are able to readily compete in financial sector with other well-established commercial banks. DT-SACCOs in Kenya just like other businesses are facing a number of financial risks in their daily operations. Studies have been carried out globally and locally on relationship between investment portfolio diversification and financial performance of firms (Lagat, Mugo and Otuya, 2013; Nthimba and Abrose, 2015; Kariuki (2017). Even with these studies done, most of them have been done in commercial banks and insurance firms in Kenya with few studies done in DT-SACCOs. The few

studies done in DT-SACCOs have tended to concentrate on credit policy as financial risk management practice while ignoring investment portfolio diversification. There exist few studies on the relationship between investment portfolio diversification and financial performance of DT-SACCOs. The current study therefore sought to examine the effect of financial risk management practices on financial performance of DT-SACCOs in Kenya.

### ***Objective of the Study***

To determine the effect of investment portfolio diversification on financial performance of DT-SACCOs in Kenya.

### ***Research Hypotheses***

In conducting the study the following hypothesis were tested

**Ho:** Investment portfolio diversification has no significant effect on financial performance of DT-SACCOs in Kenya.

**Ha:** Investment portfolio diversification has a significant effect on financial performance of DT-SACCOs in Kenya.

## **2. LITERATURE REVIEW**

### ***Theoretical Review***

Markowitz (1952) Modern portfolio theory (MPT) is one of the most important and powerful economic theories dealing with finance and investment. Modern portfolio theory measures the benefits of diversification, known as “not putting all your eggs in one basket”. Modern portfolio theory (MPT) is an investment theory which tries to explain how investors could maximize their returns and minimize their risks by diversification in different assets. Modern portfolio theory (MPT) is a theory of investment which tries to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully choosing the proportions of various assets. MPT is widely used in practice in the financial industry and several of its creators won a Nobel Prize for the theory. Tobin (1958) expanded the theory of Markowitz’s (portfolio theory) by adding the analysis of risk-free assets which made it possible to influence portfolios on the efficient frontier. The centerpiece of this theory is the capital asset pricing model (CAPM) devised by Markowitz (1952). In spite of criticisms and ongoing concerns about its validity and testability, concepts in CAPM such as efficient frontier, security market lines, asset “betas” and so-on are still considered relevant and important in the selection and management of portfolios of assets. The key assumptions of Markowitz’s Modern Portfolio Theory (MPT) (Markowitz, 1952) theory are that asset returns are normally distributed and that investors face a risk-return trade-off. It is widely accepted that most asset returns are non-normally distributed and this can be seen in the extreme tail risks in the current crisis and the long term capital management crisis in 1998. Such events are not covered adequately by a normal distribution function.

By combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and markets are efficient. MPT was developed in the 1950s through the early 1970s and was considered an important advance in the mathematical modeling of finance. Since then, many theoretical and practical criticisms have been leveled against it (Harrell and Kiefer, 1993). These include the fact that financial returns do not follow a Gaussian distribution or indeed any symmetric distribution, and those correlations between asset classes are not fixed but can vary depending on external events. Since von Neumann and Morgenstern (1944), many researchers have tried to model portfolio optimization problems within an expected utility maximization framework. Different utility functions have been used in this approach, and the most notable recent works in this area are those of Long (1990) and Luenberger (1993), where log optimal portfolios are constructed and analyzed. Single period portfolio optimization theory was initially developed by Markowitz (1952), where he introduced mean variance portfolio optimization and efficient portfolio theory, which also led to the one fund theorem of Tobin (1958). However, these single period models were not sufficient to reflect the real financial world which is dynamically changing over time, and different approaches have been devised to solve multiperiod portfolio selection problems.

Merton has used stochastic control theory with continuous time dynamics to model multi period portfolio optimization problems by reducing the problem into solving Hamilton- Jacobi-Bellman equations. His most important contributions include the two papers: Merton (1969) and Merton (1971). Since then, a lot of literature has been produced in expanding the model and applying stochastic control theory in finance. Some of the important works in this field are summarized in Merton (1990). Following Harrison and Kreps (1979) and Harrison and Pliska (1981), theories in stochastic calculus have also been used extensively in solving different problems in finance. This method has led the development in asset pricing theory, but it has also been introduced to the portfolio optimization world by Karatzas, Lehoczky, and Shreve (1987) and

Karatzas (1989). There are other works that are focused on adding different constraints to above models, and on adding transaction costs due to rebalancing. A good reference in reviewing literature in this area as well as models that are not based on expected utility maximization is Korn (1997). Modern portfolio theory approach underpins the current study and is relevant for analyzing the effect of financial risk management practices on financial performance of DT-SACCOs in Kenya. According to the Portfolio balance model of loan portfolio diversification, the optimum holding of each loan type in a DT-SACCO a portfolio of loan products is a function of policy decisions determined by a number of factors such as the vector of rates of return on all loan products held in the DT-SACCO, a vector of risks associated with the ownership of each loan types and the size of the loan types held by the DT-SACCO. It implies portfolio diversification and the desired Loan portfolio composition of DT-SACCO are results of decisions taken by the management of DT-SACCO. DT-SACCOs should consider diversifying loan product types in the loan portfolio to minimize risk of credit risk.

### *Empirical Review*

Derek (2015) defines investment portfolio diversification as a way of managing portfolio whereby an investor diminishes instability and risks of her/his set of portfolio through holding a range of unlike investments are lowly correlated with one another. Cernas (2011) defines investment portfolio diversification as a strategy of managing portfolio through bringing together diverse investments to so as to lower the general risk associated with investment portfolio. On the other hand, asset diversification is a group strategy joining together more than one investment so as to lower the whole investment portfolio risk (Dimitriou, 2012). According to Dimitriou (2012), income diversification as a fundamental principle of sound investing. The aim of income diversification is to realize revenues for allowed risk margin by combination of different classes of investments in a way that is well calculated. This allow for smoothening the variability in returns achieved in each asset class. According to Perez (2015), bank assets include loans, financial assets, cash, other assets and premises. In this paper, Gurbuz, Yanik & Ayturk (2013), examined the effects of income diversification on risk-adjusted bank performance in Turkish banking sector by using System-GMM estimators. Study checked the effects of several control variables (size, assets growth, equity/total assets, loan/total assets, interest rate, global financial crisis, bank ownership structure). Study found that income diversification strongly increases the risk-adjusted financial performance of the Turkish deposit banks, that is, increase in non-interest income leads to an increase in risk adjusted profit on assets and equity. The positive effect of income diversification on banking financial performance may be a result of increased income of the bank or reduced operating costs of the bank from diversifying operations.

Chang and Elyasiani (2008), doing their research in 510 Financial holding companies in USA on relationship of financial performance and insurance as an additional product, using quaternary panel observations of year 2003-2005, find out that bank expansion into non interest activities can improve risk adjusted performance. Insurance activities according to them can help small sized financial holding companies improve on risk adjusted returns but do not have consistent significant impact on performance of very large financial companies.

Study by Ismail, Hanif, Choudhary & Nisar (2015) noted that Banks are now moving towards diversification of their revenues to reduce risk of their portfolios and to increase the profitability. In effort of diversifying the income generation activities, banks are indulging in non- interest income generation activities by reducing their reliance on traditional banking activities. Diversification of income generating activities (either interest based or non-interest based) can enhance the profitability by reducing overall risk involved in banking operation. Contrary to this, over reliance on income diversification can increase the risk and reduce the risk adjusted return of banks. Considering the importance of income diversification for developing financial markets, this study aims to fill the gap in existing literature of Pakistan by empirically exploring the relationship between income diversification and banking performance for the period of 2006-2013. The results of the study have shown positive impact of income diversification on performance of banks in Pakistan. The findings of the study are important for bankers to understand how income diversification affects the performance of banks. The findings are also helpful to the banks' management and regulators to understand the role of income diversification in value creation and risk-reduction for the stakeholders

Study by Mathuva (2016) examined the influence of revenue diversification on the financial performance of 212 DT savings and credit co-operatives (SACCOs) in Kenya over the period 2008–2013. An analysis of other factors influencing the financial performance of SACCOs is carried out. The findings show that increased dependence on non-interest income is associated with higher returns. The study also finds that SACCOs with more diversified revenues experience returns that are volatile. According to the findings, SACCOs with less concentrated revenue streams are associated with higher volatility in returns. The study provides empirical evidence on possible regulatory and size influences on the relationship between revenue diversification and financial performance. Compared to unlicensed SACCOs, the study finds limited

diversification benefits in licensed SACCOs. Finally, the results show that revenue diversification is beneficial to smaller SACCOs. Souza and Lai (2003) dealing with diversification of loan portfolio with respect to region in Canada and efficiency of big five chartered banks, found that the banks were systematically underperforming hence no sufficient efficiency diversification. However a merger between banks with different business lines but similarities in the region composition can result to more efficient entity. Turkmen and Yigit (2012) assessing the relationship between sectoral diversification and bank performance in 40 banks in turkey find that diversification had a negative effect on performance. They argue that diversification brings about increased cost hence lesser profit.

Paper by Gamra & Plihon (2011) examined whether the observed shift into non-interest based activities improves financial performance. Using a sample of 714 banks across 14 East-Asian and Latin-American countries over the post 1997-crisis changing structure, we find that diversification gains are more than offset by the cost of increased exposure to the non-interest income, specifically by the trading income volatility. But this diversification performance's effect is found to be no linear with risk, and significantly not uniform among banks and across business lines. An implication of these findings is that banking institutions can reap diversification benefits as long as they well-studied it depending on their specific characteristics, competences and risk levels, and as they choose the right niche. In a paper by Amediku (2012), study investigated the impact of income source diversification on bank performance. Pooled data of Three Universal banks was employed in this study using a linear regression analysis. The study revealed that bank income sources are diversified significantly in the Ghanaian banking industry and that both interest and non-interest activities significantly impacts positively on bank performance while bank growth in the number of branches significantly impacts negatively on bank performance. This lead to the acceptance of both H1 which hypothesized that commercial banks in Ghana are diversified in source of income and H2 which postulates that income source diversification improves financial performance of commercial banks.

Study by Teimet, Ochieng & Away (2011), was carried out to establish the impact of income source diversification on financial performance of commercial banks in Kenya. This has been achieved through: establishing the level of income source diversification of commercial banks in Kenya and establish whether income source diversification improves financial position of commercial banks. This was a census study of all registered 44 commercial banks in Kenya and relied heavily on documentary secondary data for 5 year study period (2005-2009) and validated by primary data achieved through key informant method. Herfindahl-Hirschman Index, Correlations and Regression analysis were mainly used and revealed on aggregate that all commercial banks in Kenya are diversified with large banks in lead while Islamic banks trail. Further, diversification level has a positive influence on financial performance of commercial banks in Kenyan and the two main revenue streams are positively related. Olweny & Shipho (2011) investigated the effect of portfolio diversification on the financial performance of commercial banks in Kenya. This study adopted exploratory research design with a population that consisted of 40 commercial banks. The study concluded that a majority of the banks over the years have in practice employed the use of insurance investment on the financial performance of commercial banks in Kenya. Huang and Chen (2008) on their research based in Taiwan on commercial banks for year 1992 to 2004 note that banks with high interest income and low noninterest income operate more cost effectively. This is because diversification causes an additional cost. Those that had diversified were less cost effective. They also note there is a growing percentage of a non interest income in the operating incomes in Taiwan.

Kimeu (2012) evaluates the effects of income diversity to performance of commercial banks. In the study period 2000-2010, he concludes that there are a few benefits expected in income diversification from traditional banking although there was a growing importance of non interest income. He notes that noninterest income is more volatile and with increased volatility, there are fewer benefits from diversification. A higher diversification is associated with low lending rates according to central bank of Kenya, being a benefit to the banks by avoiding over reliance on interest income. Rotich et al (2011) on their case on Kenyan commercial banks find out that there is a linear relationship between diversification and financial performance. In their research of 44 banks in Kenya year 2005-2009 concludes that financial diversification leads to improved performance. Larger banks have a greater ability to expand. They also note that non interest based income has been on the increase. Finally interest and non interest incomes are found to be correlated. Kuppuswany and Villalonga (2010) note that diversification increased in the 2007-2009 financial crisis in U.S.A. They note that diversification gave firms both financing and investment advantages. The value of diversified firms increased relative to single segment firms during the same crisis and that the value of diversification has increased beyond the crisis. Another study was done by Herimo and Mekonnen (2012) this time on MFI in Ethiopia for year 2004 to 2009. In this institution, there was no diversification during the year. The MFI was on the increase until 2009 when the effects of economic crisis were experienced. It went to a decline in 2009.

### 3. METHODOLOGY

#### *Research Design ,Target Population And Sampling*

The study employed a descriptive survey as its research design to establish the effect of investment portfolio diversification on financial performance of DT-SACCOs in Kenya. This study was a survey of all DT SACCOs licensed by SASRA that operated in Kenya in 2017. Specifically the study targeted the 135 DT-SACCOs that were fully licensed by SASRA before the study period and has financial data for the five year period of the study from 2013-2017. To arrive at the sample size, the researcher used Kothari and Garg (2014) formulae. In this case, for the given population of 135 DT-SACCOs, sample size was determined by Kothari (2004) formulae as:

$$n = \frac{z^2 p q N}{e^2 (N-1) + z^2 P q}$$

Where  $e$  is the error for this study, taken as 10 %;  $p$  is the population reliability, taken as  $p=0.5$ ;  $q = (1-p)$ ,  $z$  is the normal distribution at 0.05 level of significance such that  $z = 1.96$ . The sample size is therefore calculated as shown below using Kothari and Garg (2014) formulae

$$n = \frac{1.96 * 1.96 * 0.5 * 0.5 * 135}{0.1 * 0.1 (135 - 1) + 1.96 * 1.96 * 0.5 * 0.5}$$

$$n = 56.36$$

$$n = 56$$

This generated a sample size of 56 DT-SACCOs. The study employed simple random sampling to select the number of DT-SACCOs that formed part of the study. From the sampling frame, 56 DT-SACCOs were selected randomly from the list of 135 DT-SACCOs. Purposive sampling were then be used to select respondents that were chief finance officers from each DT-SACCO since they are the ones charged with the responsibility of advising the chief executive officer and top management on financial risk management decisions.

#### *Research Instruments and data collection*

The researcher used a questionnaire as the main data collection instrument to collect data from the respondents. The questionnaires were structured questions inform of Likert scale. The questionnaire had sections on background data and specific questions on financial risk management practices and financial performance of DT-SACCOs in Kenya. Secondary data on the financial performance of DT-SACCOs was retrieved from the SACCOs supervision annual reports for the five years 2013,2014,2015,2016 and 2017. Individual SACCOs provided audited financial statements for the last five years. The retrieved data were recorded on data collection sheets. The researcher first obtained introduction letter from the postgraduate school. The researcher then visited the head offices of the respective SACCOs sampled to explain the purpose of the study and get permission to collect data. The researcher then printed the questionnaires for eventual distribution to respondents. Since most of the DT-SACCOs have their head offices in Nairobi, Mombasa and Nakuru questionnaire were administered using a drop and pick later method. For the DT-SACCOs whose head offices were not from the three major towns, the questionnaires were mailed collecting the respective SACCOs and following up with official emails. The data collected in for a period of three weeks in the month of May 2018.

#### *Data Processing and Analysis*

Completed questionnaires were scrutinized for completeness and then entered into Statistical Package for Social Scientist version 23 computer packages. After entering data into data editor, data cleaning, editing, coding and arrangement for analysis followed next. Data was analysed using descriptive and inferential statistics. Descriptive statistics in the form of percentages, frequencies, standard deviation, mean, minimum and maximum were employed. Inferential statistics involved bivariate Karl Pearson correlation and multi regression. The data was then presented using tables and their associated explanations. The statistical model shows the mathematical relationship between the independent variable financial risk management practices and dependent variable financial performance of DT-SACCOs in Kenya. The model is shown in equation (1)

$$Y = \beta_0 + \beta_1 X_1 + e \dots \dots \dots (1)$$

Where Y is dependent variable financial performance (ROA),  $X_1$ : Investment portfolio diversification.  $\beta_1$  the coefficients of investment portfolio diversification.  $\beta_0$ : intercept term and e: stochastic error term

#### 4. RESULTS AND DISCUSSIONS

##### *Pilot Study and Response Rate*

The value of Cronbach's Alpha for all the variables were above the threshold of 0.7 hence the questionnaire used in the study was reliable enough in measuring the content with high degree of reliability hence the questionnaire could give similar result if used repeatedly in different studies. Out of the 56 questionnaires that were administered among the various respondents who happened to be finance managers of the respective Sacco's, 52 questionnaires were returned and were useable for the study accounting for 92.8 % response rate.

##### *Descriptive Analysis*

**Investment areas in the portfolio:** The research sought to establish whether the various DT-Sacco's had invested in various areas including loans, real estate and government treasury bills and bonds. The results are represented in table 1

**Table 1: Investment Areas of the Sacco**

Investment	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Financial Assets	37	71.15%	15	28.84%
Real estate	43	82.69%	9	17.31%
Loans	52	100.00%	0	0%

The table 1 shows that concerning investment in financial assets, out of the 52-DT Sacco that filled and returned the questionnaires, only 36 (71.15%) had invested in financial assets with the remaining 15 (28.84%) not investing in financial assets. Concerning investment in real estate, 43(82.69%) of sampled DT-SACCOs had invested in real estate with remaining 9 (17.31%) not investing in the same. Finally, all the sampled DT-SACCOs had invested in loans as all the respondents reported that their respective Sacco's had given out loans.

**Distribution of Investment:** The study sought to establish the distribution of various investments in the portfolio. The results are shown in table 2

**Table 2: Distribution of DT- Sacco Investments**

Variables	N	Minimum	Maximum	Mean	Std. Deviation
Financial assets	37	185.95	4964.58	939.32	1007.74
Real estate	43	232.44	6205.73	1174.15	1248.48
Loans	52	929.76	24,822.94	4,696.63	5038.73

The researcher wanted to establish the central tendency and dispersal of various investments in the portfolio of the 52 DT-SACCOs. The mean investment in financial assets was kshs. 939.320 million. The standard deviation was Ksh.1.00774 billion. The minimum investment in financial assets was Ksh.185. 950 million and the maximum investment in financial assets was Ksh. 4.96458 Billion. Concerning investment in real estate, the mean investment in real estate was Ksh.1.17415 billion. The standard deviation for investment in real estate was Ksh.1.24848 billion. The minimum investment in real estate was Ksh.232.44 million and the maximum investment in real estate was Ksh. 6.20573 Billion. Finally, concerning investment in loans, the mean investment in loans to members and customers was Ksh. 4.69663

billion. The standard deviation for the loans to members was ksh.5.03873 billion. The minimum loans was Ksh 929.76 million and the maximum loans to members and public was Ksh.24.82294 billion.

**Perception on investment portfolio distribution:** The present study sought to determine the extent to which the respondents agreed with various statements about investment portfolio. All the measures were on a five point Likert Scale where; 1= strongly disagree, 2= Disagree, 3=Not sure, 4=Agree, 5=strongly agree. These results are as summarized in Table 3

**Table 3: Perceptions on Investment Portfolio**

Statements	SA	A	N	D	SD	Mean	Std. Dev
	%	%	%	%	%		
Your has SACCO has invested heavily in financial assets	2	69	0	0	29	4.2923	.46513
Your SACCO has invested heavily in real estate's sector	18	65	0	0	17	4.6923	.46513
Your SACCO has invested heavily in loan	97	3	0	0	0	4.9692	1.43145

The results in Table 3 indicate the responses on the level of distribution of assets in the investment portfolio. The respondents were asked to evaluate different statements about extent of distribution and diversification of investment portfolio. The statement that the DT-SACCOs has invested heavily in financial assets was supported by 71% of the respondents. The statement that the DT-SACCO had invested heavily in real estate's sector was supported by 83% of the respondents and finally, all respondents who filled the questionnaires supported the statement that SACCOs had invested heavily in loan. The entire mean responses were greater than four meaning that generally, the DT-SACCOs had invested heavily in financial assists, loans and real estate.

#### **Correlation Analysis**

In this subsection the correlation analysis using the Pearson Product Moment Correlation was made to first determine the degree of multicollinearity between the independent variable and also show the degree of their association with the dependent variable resulting correlation matrix given in Table 4

**Table 4: Bivariate Pearson Correlation Coefficient**

		Investment Portfolio	Financial performance
Investment portfolio	Pearson Correlation	1	.432**
	Sig. (2-tailed)		.000
	N	52	52
Financial performance	Pearson Correlation	.432**	1
	Sig. (2-tailed)	.000	
	N	52	52

**\*\*.** Correlation is significant at the 0.01 level (2-tailed). **\***. Correlation is significant at the 0.05 level (2-tailed).  
**Independent Variable:** Investment portfolio diversification and **Dependent variable:** financial performance.

The results in Table 4, shows the correlation between Risk Management Practices variables and performance of DT-SACCOs in Kenya. Investment portfolio was positively and significantly correlated with performance of DT-SACCOs in Kenya ( $r = .432^{**}$ ,  $p = 0.00$ ,  $\alpha = 0.05$ ).

**Regression Analysis**

The study used simple OLS Regression analysis to see the causal effect relationship between the variables. That was simple in nature as there was only one independent variable. The independent variable was Investment portfolio diversification and The dependent variable was performance of DT-SACCOs. Regression analysis involved calculation of coefficient of determination ( $R^2$ ), Analysis of Variances (ANOVA) and regression coefficients.

**Table 5 : Model Summary (ROA)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.432	.186624	.1849	.14656

**a. Predictors: (Constant), Investment Portfolio**

In table 5, the overall correlation coefficient (R) between independent variable investment portfolio diversification and performance of DT-SACCOs was found to be .432. This means that there was a moderate positive relationship between investment portfolio diversification and performance of DT-SACCOs. Furthermore, it indicates that the model explains only 18.66 % of the variations in performance of DT-SACCOs in Kenya as shown by coefficient of determination ( $R^2$ ) of 0.1866 with the remaining 81.33 % of the variation in performance of DT-SACCOs in Kenya being explained by other factors not part of the model.

**Table 6: Analysis of Variances**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.847	1	7.847	314.8876	.000 <sup>b</sup>
	Residual	1.246	50	.02492		
	Total	9.093	51			

**a. Dependent Variable: Financial Performance, b. Predictors: (Constant), Investment Portfolio**

According to table 6 the F value of 314.8876 with an overall significance of model 1 was .000. The level of significance was lower than 0.05 and this means that financial risk management practises shows statistically significant effect on financial performance of DT-SACCOs in Kenya.

**Table 7: Coefficients of Independent Variable**



Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
<b>1</b>	(Constant)	.227	.236		.961	.338
	Investment portfolio	.160	.060	.122	2.648	.009

a. Dependent Variable: Financial Performance of DT-SACCOs

Table 7 further, shows the coefficients of independent variables (Investment portfolio, credit policy, Financial leverage and cash flow budgeting) the values of **p** and values of **t**. The model was thus estimated as shown in equation (2).

$$\text{Financial Performance} = .227 + .160 \text{ Investment Portfolio} \dots \dots \dots (2)$$

The estimated model equation simplifies the causal effect relationship between financial risk management practices and performance of DT-SACCOs in Kenya. The value .227 is the intercept term of the model showing the level of financial performance of DT-SACCOs in Kenya when the independent variables in the model are held constant at zero. Investment Portfolio had a statistically significant effect on performance of DT-SACCOs in Kenya ( $\beta_1 = .160$ ,  $t = 2.648$ ,  $p = .009$  and  $\alpha = 0.05$ ), the null hypothesis that investment portfolio has no significant effect on performance of DT-SACCOs in Kenya was thus rejected. Investment portfolio was positively and significantly correlated with performance of DT-SACCOs in Kenya ( $r = .432^{**}$ ,  $p = 0.00$ ,  $\alpha = 0.05$ ). The positive correlation means that when the DT-SACCOs in Kenya improved on their investment portfolio diversification through having a variety of products under each investment type, the financial performance of the DT-SACCOs also improved greatly in terms ROA. Investment Portfolio had a statistically significant effect on performance of DT-SACCOs in Kenya ( $\beta_1 = .160$ ,  $t = 2.648$ ,  $p = .009$  and  $\alpha = 0.05$ ), the null hypothesis that investment portfolio has no significant effect on performance of DT-SACCOs in Kenya was thus rejected. The effect was positive and statistically significant meaning any improvement in portfolio diversification for the DT-SACCO translated to reduced unsystematic risks and thereby improved profitability measured by ROA. The value of coefficient of investment portfolio ( $\beta_1 = .160$ ) explains the responsiveness of financial performance (ROA) of DT-SACCOs due to unitary change in the portfolio diversification. Any improvement in the investment diversification by one unit leads to improved financial performance by .160 units.

The current study has similar findings with other studies for instance study by Gurbuz, Yanik & Ayturk (2013) established that income diversification strongly increases the risk-adjusted financial performance of the Turkish deposit banks, that is, increase in non-interest income leads to an increase in risk adjusted profit on assets and equity. Ismail, Hanif, Choudhary & Nisar (2015) noted that Banks are now moving towards diversification of their revenues to reduce risk of their portfolios and to increase the profitability. Additionally, Mathuva (2016) established that increased dependence on non-interest income is associated with higher returns. Souza and Lai (2003) dealing with diversification of loan portfolio with respect to region in Canada and efficiency of big five chartered banks, found that the banks were systematically underperforming hence no sufficient efficiency diversification. Finally, Amediku (2012), study revealed that bank income sources are diversified significantly in the Ghanaian banking industry and that both interest and non-interest activities significantly impacts positively on bank performance while bank growth in the number of branches significantly impacts negatively on bank performance.

## 5. CONCLUSION

The purpose of the study was to examine the effect of investment portfolio diversification financial performance of DT-SACCOs. From the findings of the study, the following conclusions were made. First, The positive correlation between investment portfolio and financial performance of DT-SACCOs means that when the DT-SACCOs in Kenya improved on their investment portfolio diversification through having a variety of products under each investment type, the financial performance of the DT-SACCOs also improved greatly in terms ROA. The effect of investment portfolio diversification was positive and statistically implying that any improvement in portfolio diversification for the DT-SACCO translated to reduced unsystematic risks and thereby improved profitability measured by ROA. Any improvement in the investment diversification leads to improved financial performance. The study therefore concludes that the effect of investment

portfolio on financial performance of DT-Saccos was significant and a major determinant of financial performance of DT-Saccos in Kenya. Given the positive correlation between investment portfolio and financial performance of DT-Saccos and statistically significant effect of investment portfolio on financial performance of DT-Saccos. The study recommends that management of DT Saccos should continue improving on their investment portfolio by bringing in more financial products to the portfolio. Investment portfolio can be improved through financial innovation especially by leveraging on technology to bring new products into the market. Any improvement in portfolio diversification for the DT-SACCO should translated to reduced unsystematic risks and thereby improved profitability measured by ROA. Any improvement in the investment diversification should eventually leads to improved financial performance of DT-Saccos.

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