

# Effect of Loan Portfolio Quality and Management Efficiency on Financial Performance of Deposit Taking Savings and Credit Co-operatives in Meru County, Kenya

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## Abstract:

Savings and credit cooperative societies (SACCOs) have been present in Kenya for decades but this sector has not been able to impact positively on the lives of people. Access to finance has been cited as one of the factors hampering economic growth and poverty alleviation. Savings and credit cooperative societies have lagged behind other financial institutions by performing below their members' expectations therefore causing dissatisfaction among the members. In Kenya, SACCOs exist in two forms; -The Deposit taking and the Non – deposit taking SACCOs. The Deposit taking SACCOs are registered under the Sacco Societies act to undertake deposit taking business. These Saccos are regulated and supervised by SASRA. This study concentrated on the Deposit taking Saccos. The purpose of this study was to establish the determinants of financial performance of the Deposit-taking SACCOs in Meru County, Kenya. The study was guided by the following objectives, to establish the extent to which management efficiency and loan portfolio quality influences the financial performance of Deposit-taking Saccos in Meru County. The study adopted the descriptive research design to examine the determinants of the financial performance of Deposit-taking SACCOs in Meru County. Secondary data was collected from 11 deposit taking Sacco in Meru County between 2016 and 2020. Descriptive and inferential statistics was analyzed using STATA 15. Descriptive entailed central tendency (means) and dispersion (standard deviation) was used. Inferential statistics such as regression and correlation analyses was used to determine both the nature and the strength of the relationship between the dependent and independent variables. The findings were presented using tables, figures and models. The study found that management efficiency and loan portfolio quality had a positive effect on the financial performance of Saccos in Meru County. The researcher recommends that Saccos need to put more efforts in managing their loan portfolio quality as it has a very significant influence on their financial performance. This study also recommends that Saccos devise effective mechanisms to reduce or control operational expenses. This research work will benefit Saccos through encouraging them to engage in activities that will lead to financial stability hence leading to good and improved financial performance.

**Key Word:** Loan Portfolio Quality, Management Efficiency, Financial Performance, Deposit Taking Savings and Credit Co-operatives

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## I. Introduction

Savings and Credit Co-operative Society (SACCOS) are among the Micro Finance Institutions (MFIs) which are owned and managed by their own members using co-operative principles (Bailey, 2001). They are autonomous association of persons who are united together voluntarily for the purpose of meeting their common economic and social needs through jointly owned and democratic controlled enterprise (Mikwamba, 2004). These economic needs include among others; maximisation of profits, enhancement of financial accessibility, harnessing skills of the members, boosting social capital, enhancing advocacy and bargaining power. Others include promoting investment, providing educational opportunities and contributing to poverty reduction (Tache, 2006; Magill 1994). The main objective of these associations is to promote economic interests and general welfare of their members by providing them with avenues for borrowing for the purpose of enhancing production and welfare (Cheruiyot et al., 2012).

Recent research indicates that seven percent of the African population is affiliated to cooperatives (Pollet, 2009). SACCOs have made it possible for the poor people to access credit with reasonable rates of interest and conditions that favour themselves. Ahimbisibwe (2007) noted that without SACCOs and other types of MFIs, the poor would permanently remain poor. This fact is also supported by the International Finance Corporation (IFC) which found that about 60% to 69% of the populations in many African countries had no

access to financial services from FFIs (Kariuki and Rai, 2010; Chijoriga and Cassimon, 1999). In Tanzania, contribution of SACCOS in the economy of poor people and the country as a whole cannot be over emphasized. For example, by December, 2006 there were over 3,500 registered SACCOS in the country with approximately 420,000 members (Duursma, 2007). SACCOS have increased incomes, assets, food consumption, education expenditure, improved housing and decline expenditures in health to its members compared with non-members (Sharma et al., 2005).

A study by WOCCU (2008) revealed that SACCOS were facing severe liquidity problems and majority of them were unable to meet demands of their clients for loans and withdrawal of savings. According to Mvula (2013), common issues that were affecting performance of SACCOS in Malawi were inadequate capital, poor asset quality, poor governance, poor profitability, poor liquidity and non-compliance. In the case of Uganda, most SACCOS face a number of challenges which in turn are handicapping their performance (Kakungulu et al., 2010). In 2008, savings in SACCOS across sub-sahara Africa grew by 31.90 percent, which is comparable to average saving growth rates for previous year. Loans grew at an average rate of 12 percent, which is lower than growth rates of previous years (WOCCU, 2009). This suggests that SACCOS in Africa maybe exercising caution in responding to the loan requests of members. Indeed, it was reported that some SACCOS have been scaling down loans associated with export

The SACCO sub-sector is a part of the larger co-operative movements in Kenya which includes financial and non-financial co-operatives. In the recent past, SACCOS have experienced faster growth than other co-operatives. The total assets in the Kenya's SACCO sector increased to K.sh.248 billion from K.sh. 216 billion in 2010. Currently, the sector is the largest in Africa and accounts for 60, 64, and 63 per cent of the continent's savings, loan and assets respectively according to (SASRA, 2011). The use of financial products in SACCO saving increased from 9.2 to 10.6 in 2009 and 2013 while ratios for obtaining SACCO credit were 3.1 and 4.0 respectively, an indication of increased activity according to (CBK & FSD Kenya, 2013). SACCOS need to safeguard gains made so far and build confidence since bankruptcy of a SACCO will be a manifestation of instability in the sector. Regular financial review of SACCO's according to (SASRA, 2011) is paramount and crucial as they are integral part of Kenya's finance system that includes the banking sector, Insurance industry and Retirement Benefit Institutions. Basel principle 13 (Supervision, 2000) provides for disclosure of information about the bank to manage public perception of the organization and its soundness. SASRA in 2012 adopted the CAMELS performance rating framework to assess the financial soundness of Sacco's focusing on prudential standards. The adoption and implementation of CAMELS performance evaluation tool ensure objectivity and standardization in monitoring of the financial soundness and stability of individual Sacco's.

### ***Statement of the Problem***

SACCOS contribute immensely to the growth and development of economies. They promote savings culture among people that is crucial for planning in terms of investments and expenditures. Saccos play a big part in financial accessibility thus enabling members to engage in viable businesses that generate income to improve living standards. It is estimated that 63 per-cent of Kenya's population participate directly or indirectly in co-operative based enterprises. It is also estimated that co-operatives contribute 46 percent of the total Gross Domestic Product (GDP), 35% of Gross National Savings and employs directly about 500,000 people. In Kenya, the Deposit Taking Saccos have shown robust performances over the years. In 2017, these SACCOS had a total asset base of Kshs 442.27 billion which was an increase of 11% of the value of 393.49 billion reported in 2016. Similarly, the deposits generated by members were Kshs 305.30 billion which was 12% increase from the Kshs. 272.57 billion reported in 2016 (SASRA, 2018). The total loan and advances were 320.49 billion in 2017 which was an increase of 10.93% from Kshs 288.92 billion registered in 2016 (SASRA, 2018).

As of 21st January 2021, the SASRA report indicated that there was a total of 175 licensed DTS operating in Kenya. Meru county hosts 19 of these SACCOS which translates to 11% of the total DTS operating in Kenya. Over the years Meru County has shown significant growth in this sector. Between 2015 and 2020, the SACCOS performance has been fluctuating as seen from the ROA reports due to various challenges faced in their quest towards growth. Despite the potential and contribution of these SACCOS, they have not delivered financial services to members as expected due to undesirable performance. Lack of competent management leads to adoption of mediocre financial decisions that never improve performance. Supervision of SACCOS has not catered for the needs of members in terms of consumer protection. This means that it has not been done as it should be. Moreover, some SACCOS fail to meet loan requirements as sought by members due to insufficient funds at their disposal leading to stagnant or decrease of membership. Undercapitalization makes some unstable and to some extent unsustainable in terms operations. If these issues are not solved, it may affect the Kenyan economy due to fall in GDP. This may affect the Kenyan government's vision 2030 and other plans like the Big four Agenda.

Kipingetich & Muturi, (2015) studied the Effect of Credit Risk Management of financial performance of SACCOS and found out that there was a statistically significant influence of management efficiency on

financial performance of Saccos. A similar study by Kariuki (2016) posted same findings. In her study, Njeri (2013) sought to establish effects of financial leverage on the financial performance of deposit taking SACCOs in Nairobi County. The study revealed that there is a positive relationship between financial leverage and financial performance. A study by Muriuki (2010) in Meru County on factors affecting performance of SACCOs. Governance was identified as a major issue that affected financial performance of SACCOs. Njeru (2016) researched on the effects of liquidity management on the financial performance of Sacco in Kenya and found out that liquidity management was positively correlated to the financial performance of Saccos. Many scholars have tried to find out the determinants of financial performance of financial institutions in Kenya. However, majority of researches in this area have been limited to the banks and this study seeks to find out the effects of Management efficiency, financial leverage, loan portfolio quality and investment decisions on the financial performance of Deposit taking SACCOs in Meru County, Kenya.

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

- i) To establish the effect of management efficiency influences financial performance of Deposit-Taking Saccos in Meru County.
- ii) To ascertain the effect of loan portfolio quality affects financial performance of Deposit-Taking Saccos in Meru County.

### ***Research Questions***

- i. What effect does management efficiency have on the financial performance of Deposit Taking Saccos in Meru County?
- ii. What effect does loan portfolio quality have on the financial performance of Deposit Taking Saccos in Meru County?

## **II. Literature Review**

### ***Theoretical Framework***

The study was guided by the following theories; Efficient Structure Theory and credit scoring theory.

### ***Efficient Structure Theory***

This theory posits that financial institutions earn high profits because they are more efficient than others. There are also two distinct approaches within the ES; the X-efficiency and Scale-efficiency hypothesis. According to the X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou et al, 2006). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and

According to Thoraneenitiyan, (2010), Bank efficiency studies can be separated into those that examine scale and scope efficiency and those that examine X efficiency or frontier efficiency. The X efficiency hypothesis argues that banks with better management and practices raise profits and control costs, moving the bank closer to the best practice. The scale efficiency hypothesis argues that some banks achieve better scale of operation and, thus, lower costs. Lower costs lead to growth and higher profits.

Berger (1995) argues that previous research on tests of the market-power theories produce suspect findings, since they as a rule do not control for the efficient-structure theories. He found out that support for only two of the four hypotheses –the relative-market-power and the X efficiency hypotheses using simultaneous test of all four competing hypotheses – two market-power and two efficient structure by adding measures of X-efficiency and scale efficiency to the standard tests.

Empirically tested this hypothesis (“Efficient-Structure” theory) using data set over 2700 banks, he found no relationship between market concentration and bank profitability, while significant positive correlation between bank profitability and market share was present (Smirlock, 1985). The efficiency structure theory is relevant to this study as it guides the SACCO management efficiency.

### ***Credit Scoring Theory***

The credit scoring theory and competitive pricing of default risk was developed by Satyajit in 2004. The first step in limiting credit risk involves screening clients to ensure that they have the willingness and ability to repay a loan. Lending foundations build their credit policy around the 5 C's of credit: A client with an excellent reputation with open and disclosed information about them in the process of the decision making. Reviewing sources of income versus obligations helps to determine the payment ability of the borrower based

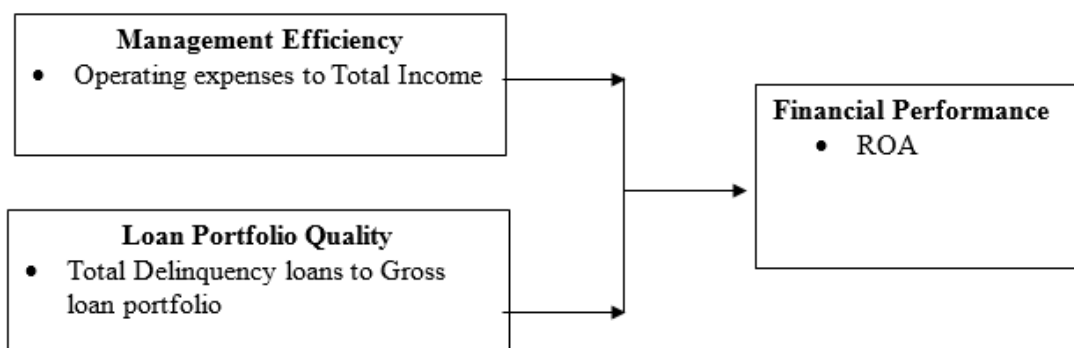
on past information about him or her. The wealth position of a borrower usually estimated by market standing and soundness of his or her finances is called capital.

Character refers to the trustworthiness and integrity of the business owners since it's an indication of the applicant's willingness to repay and ability to run the enterprise. Capacity assesses whether the cash flow of the business or household can service loan repayments. Capital refers to the assets and liabilities of the business or household. Collateral refers to access to an asset that the applicant is willing to cede in case of non-payment or a guarantee by a respected person to repay a loan in default. Finally, conditions refer to a business plan that considers the level of competition and the market for the product or services as well as legal and economic environment. The 5Cs need to be included in the credit scoring model.

The credit scoring model is a classification procedure in which data collected from application forms for new or extended credit line are used to assign credit applicants to credit risk classes (Constantinescu, 2010). Inkumbi (2009) notes that capital and collateral are major stumbling blocks for entrepreneurs trying to access capital. This is especially true for young entrepreneurs or entrepreneurs with no money to invest as equity; or with no assets they can offer as security for a loan. Any effort to improve access to finance has to address the challenges related to access to capital and collateral. This model supports the variables on loan portfolio quality.

### Conceptual Review

Conceptual framework is fundamental as it explains and incorporates methodological, philosophical, and pragmatic features of research thesis (Sykes & Piper, 2015). This is a diagram illustrating the linear relationship between independent variables (Management efficiency and Loan portfolio quality) and the dependent variable (Financial Performance).



**Independent variables**

**Dependent variable**

**Figure 1.0: Conceptual Framework**

Management efficiency is the ability of the board of directors and management to identify measure, control the risks of a banking institution's operations, and guarantee the safe and effective operation in fulfillment of pertinent laws and regulations. The management efficiency of a financial institution is measured using different financial ratios Management efficiency significantly determines the level of operating expenses and in turn has an impact on the bank's profitability (Ongore & Kusa, 2013).

Loan portfolio quality can be defined as the inability of a borrower to fulfil his or her loan obligation as at when due (Balogun and Alimi, 1988). High loan portfolio qualities in SMEs lending should be of major concern to policy makers in developing countries, because of its unintended negative impacts on SMEs financing. Von-Pischke (1980) states that some of the impacts associated with default include: the inability to recycle funds to other borrowers; unwillingness of other financial intermediaries to serve the needs of small borrowers; and the creation of distrust. As noted by Baku and Smith (1998), the costs of loan delinquencies would be felt by both the lenders and the borrowers. The lender has costs in delinquency situations, including lost interest, opportunity cost of principal, legal fees and related costs. For the borrower, the decision to default is a trade-off between the penalties in lost reputation from default versus the opportunity cost of forgoing investments due to working out the current loan

Financial performance is the extent to which the business financial goals and objectives are achieved its hoe efficient a firm uses its resources to generate revenues in its daily operations. Financial performance measures the firm's financial strength Kiaritha, (2015) also acts as an appraisal of the firm's financial capabilities at any given time and can easily be used for financial comparison purposes for firms within the industry (Ene & Bellow, 2016).

## **Empirical Review**

SACCOs play an important role in economic development as part of the financial system. In Kenya, 63% of the population benefit from Saccos (Okumu & Oyugi 2013).

### ***Management Efficiency and Financial Performance***

Simiyu, Clive and Musiega (2016) carried a study on the influence of management efficiency on the financial performance of deposit taking savings and credit cooperatives in Kakamega County. The study used a descriptive survey design. The population consisted four deposit taking Saccos operating in Kakamega County. A semi-structured questionnaire was used to collect the data from a sample size of 56 respondents. The study revealed that there was a significant positive linear relationship between financial systems and financial performance of SACCOs in Kakamega County. The study concluded that SACCOs and other financial institutions must focus on the financial systems in minimizing their operational risks. The study recommended that management of SACCOs in Kenya should ensure that adoption and implementation of sound operational risk management practices.

Rose (2016) has examined the management efficiency of nearly 730 US commercial banks allegedly in distress. The study evaluated the effect of restructuring on commercial banks' overall financial performance. ROA, ROE and Net Interest Margin were the financial performance instruments utilized in the study. The operational restructuring measuring ratio was the revenue/expenditure ratio and operating expenditure/total assets ratio. The research techniques used describe analytical approaches and methods of Ordinary Least Square. The findings indicate that the banks operationally reformed had constant operating effectiveness and greater profitability.

In Kenya, the connection between management efficient and financial performance of business banks in Kenya was reviewed in Kithinji (2019). The research population consisted of 44 commercial banks regulated and registered in Kenya under the bank act, but there was data from 39 commercial banks' financial statements in operation from 2002 to 2014. In order to evaluate secondary data obtained, descriptive and inferential analytic techniques were employed. There has been no substantial impact on the composite variable of financial services. Consequently, the study found that management efficiency did not affect the profitability of the banks.

Ufo (2015) investigated the determinants of financial performance of manufacturing firms in Ethiopia for the period from 1999 to 2005. Due to data heterogeneity, non-continuity and because the Hausman test favors it over the Fixed effect technique, the panel data General Least Square (GLS) regression method is used. The result proves that management efficiency has a positive and significant influence on debt service coverage. Banks should supervise the efficiency of firms in mitigating the debt burden through application of various techniques during loan evaluation process.

Dagogo (2014) investigated the effects of management efficiency and contribution margin on profitability and risk of Nigeria's emerging companies. Cross-sectional and time series data were collected from Nigerian Stock Exchange for the top ten emerging companies listed in the market. Additional restricted-access data about internal management accounting decisions were retrieved directly from these firms. The study showed that management efficiency contributes less to profit before interest and tax (PBIT) of emerging companies than contribution margin (CM).

Jaafar, Muhamat, Alwi and Karim (2018) sought to determine financial performance among the companies Practice Note 17 (PN17) listed in Bursa Malaysia by using the Altman Z-Score Model as a proxy to financial distress. Panel data from 18 companies listed in PN17, Bursa Malaysia for a period of eight (8) years, from 2009 to 2016 were analysed using Fixed Effects Model. This research used the Financial Statement from specific variables that are not used in Altman Z-Score model as potential determinants financial distress. The findings indicate that management efficiency is significant determinants of financial performance

### ***Loan Portfolio Quality and Financial Performance***

Labonne & Lame (2014) examined the relationship between loan quality and bank capital requirement in the French banking sector. Data from the French banking sector between years 2003 and 2011 that was combined to provide information on bank-level bank lending survey responses. The findings revealed that on average, more capital means an acceleration of credit but the elasticity of lending to capital depends on the intensity of the supervisory capital constraint. It also showed that when banks are constrained credit growth is more sensitive as the share of nonperforming loans rises.

Ongre & Kasu (2013) conducted a study to determine the factors affecting the financial performance of commercial banks operating in the Kenyan market. The aim of the study was to examine how performance of Kenyan commercial banks was affected by bank-specific factors and macroeconomic elements. A panel data for 37 commercial banks for the year 2001 to 2010 was analyzed using linear multiple regression model. This empirical study showed that the performance of commercial banks in Kenya is majorly affected by loan portfolio quality and management efficiency with the effect of liquidity on the same, not being strong.

Chimkono, Muturi, & Njeru (2016) evaluated the effect of non-performing loans and other factors on performance of commercial banks. The aim of the study was to investigate how financial performance of Malawian commercial banks is affected by non-performing loan ratios and other factors. It used a correlational research design and regression analysis was conducted. The study used secondary data over the period 2008 to 2014 and performed a census on all commercial banks licensed by the Reserve Bank of Malawi. The findings revealed that non-performing loan ratio and cost efficiency ratio had a significant negative impact on the performance of Malawian commercial banks.

Wangai et al. (2012) on the impact of nonperforming loans on performance of micro finance institutions in Kenya. Descriptive research design was adopted. Moreover, census was applied on selected 66 credit management staffs of micro finance banks in Nakuru. Questionnaires were used to collect primary data. Descriptive and inferential statistics was used to analyse the data. The study established that there is a constructive and significant association between nonperforming loans and financial performance. The study recommended that microfinance banks should develop measures to reduce the rate of loan portfolio quality by critically analysing potential borrowers to judge their credit worthiness and the same applies to Sacco's members. However Primary data are subject to manipulation hence there was need to use secondary data which are more conclusive as they are obtained from the organization financial statements.

In Ethiopia a study by Yuvaraj & Wondem (2013) to analyse Sacco's performance used a descriptive design and secondary data was collected from annual audited financial statements for a period of 4 years from 1998 to 2001. Data was analysed using descriptive research analysis and the results indicated that SACCOs were unhealthy because of escalating levels of loan portfolio quality. The inferential statistics should have been applied to establish a casual effect relating independent variables and the dependent variable. While a study by Muriuki (2010) in Meru County on factors affecting performance of SACCOs. Governance was identified as a major issue that affected financial performance of SACCOs. However governance is a non-financial factor and this study used audited financial reports to gauge Sacco's financial performance.

### III. Material and Methods

Descriptive research design was adopted. Descriptive research design was appropriate for this study as it helped in understanding the determinants of the financial performance of SACCOs in Meru County and therefore answer the "what" question of the study. For the period ending December 31, 2020, the study's target population was 11 deposit-taking SACCO societies registered and operating in Meru County. The study used a census method to systematically acquire and record information from the 11 deposit taking SACCOs in Meru County hence no sampling was done. Secondary data was collected from the audited financial statement submitted to SASRA by the DT Saccos after they have been registered by the commissioner of Cooperatives. Data was collected for the five-year period ending 31st Dec 2020. Data was analyzed by regression panel data analysis tool. Data analysis included both descriptive and inferential statistics where model specification estimation and rationale of variables were done. Descriptive statistics included measure of central tendency; mean and measure of variability; standard deviation, maximum and minimum. These descriptive statistics was used to develop indices and measures to summarize the collected data (Kothari, 2007). The study used inferential statistics which are regression analysis and correlation analysis to test null hypotheses. These statistical tests were at 5% significance level. Secondary data was transformed into natural logarithm. The level of significance of 5% was used as a benchmark. If the P value is less than 0.05 at 5% significance level, reject the null hypotheses and accept the alternative and vice versa. All analyses were done using STATA 15.

### IV. Result and Discussion

#### Descriptive Analysis

The descriptive statistics entailed Minimum, Maximum, Mean and standard deviation between 2016 and 2020. The results also showed overall descriptive statistics as obtained from panel data of said periods.

**Table 1: Descriptive Statistics**

Stats	Financial Performance	Loan Portfolio Quality	Management Efficiency
N	55	55	55
Min	0.003403	50.71552	0.124205
Max	0.071627	99.96	789.5564
Mean	0.023389	92.37056	79.99178
Std Dev.	0.014833	11.59898	230.3236
Skewness	0.002	1.564007	31.05683
Kurtosis	1.424237	-2.57537	2.558034

From Table 4.1, management efficiency was calculated as ratio of operating cost to total income. From 2016 to 2020, management efficiency ranged from 0.124205 to 789.5564 with a mean 79.99178 and standard deviation of 230.3236. Loan portfolio quality was calculated as ratio of total delinquency loans/Gross loan portfolio. Between 2016 and 2020, loan portfolio quality ranged from 55% to 99.96% with a mean of 92.37056% and standard deviation 11.59898%. Financial performance which is the dependent variable was determined using return on assets. From Table 4.1, observing overall statistics as obtained from panel data, between 2016 and 2020, financial performance ranged from 0.0034 to 0.0716 with a mean of 2.333. There was high variability in the financial performance as indicated in Figure 2.0.

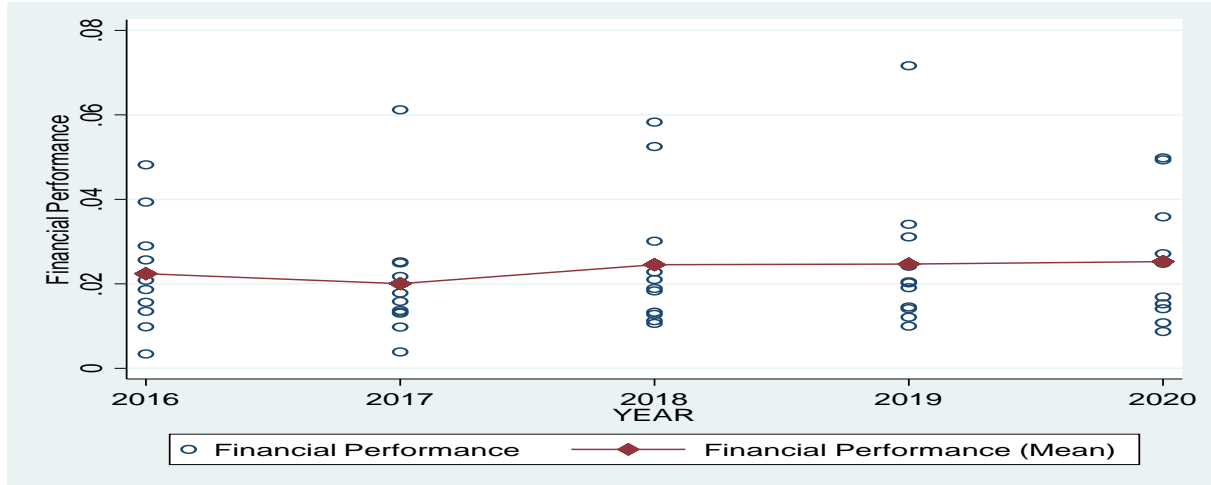


Figure 2: Trend Analysis for Financial Performance

**Inferential Analysis**

Inferential analysis entailed correlation and regression analysis. The purpose also conducted stationarity test using Philips-Perron and choice of model using Hausman test.

**Unit Root Test**

The study used Im, Pesaran and Shin (IPS) to test for the presence of unit roots in panels that combine data from the dimension of the time series with that of the cross-section dimension, so that fewer time observations are required for power to be available for the test. The results are indicated in Table 2.

Table 2: Unit Root Test

	Statistics	P-Value	Significant
Management efficiency	30.7935	0.0000	*
Loan portfolio quality	13.7377	0.0000	**
Financial performance	4.2123	0.0000	**

\* sig at 5% level, \*\* sig at 1% level

Table 2 shows the summary results for Stationarity test. A p-value of more than 0.05 indicates the presence of unit roots (H0) while a p-value of less than 0.05 was an indication that there was no presence of unit roots for Im, Pesaran and Shin (IPS). The results indicated that there was absence of unit root for all the study variables.

**Hausman Test**

The study determined whether to run a fixed effects model or a random effects model when conducting panel data analysis. The null hypothesis is that the preferred model is random effects; The alternate hypothesis is that the model is fixed effects. The results are indicated in Table 3.

Table 3: Hausman Test

	Coefficients ----		(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
	(b) Fixed	(B) Random		
Management efficiency	0.103775	-0.3743	0.478075	0.2199
Loan portfolio quality	0.073583	0.6958	-0.62222	0.3287

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic  
 $\chi^2(4) = (b-B)[(V_b-V_B)^{-1}](b-B)$   
 = 14.25  
 Prob> $\chi^2 = 0.0065$

Results of Table 3 showed a prob> $\chi^2$  value of 0.0065 that is less than the critical P value at a significance level of 0.05, which implies the non-random distribution of cross-sectional population units. Thereby rejecting the null hypothesis that the model of a random effect is the best. The study therefore employed a model of fixed effect regression.

**Correlation Analysis**

To explore the effect of independent variables on financial performance, a correlation analysis was conducted at 95% confidence level. The results of the correlation are summarized in Table 4.

**Table 4: Pearson Correlation Analysis**

	Financial Performance	Management Efficiency	Loan Portfolio Quality
Financial Performance	1		
Management Efficiency	0.322* 0.0165	1	
Loan Portfolio Quality	0.7257** 0.000	-0.3243 0.0157*	1
	55	55	55

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

The results of Table 4.o shows Pearson's correlation coefficient between the management efficiency and performance being 0.322,  $p < 0.05$ , two-tailed, tested at 95% confidence level. The results showed a positive and significant relationship between management efficiency and financial performance of Deposit taking savings and credit cooperatives. This indicates that Performance of Deposit taking savings and credit cooperatives is positively influenced by improved management efficiency. The Pearson's correlation coefficient between the loan portfolio quality and financial performance of Deposit taking savings and credit cooperatives was 0.7257,  $p < 0.05$ , two-tailed, tested at 95% confidence level. The results showed a positive and significant relationship between loan portfolio quality and financial performance of Deposit taking savings and credit cooperatives. This indicates that Performance of Deposit taking savings and credit cooperatives is positively influenced by improved loan portfolio quality.

**Linear Regression Analysis**

Linear regression was conducted to establish changes in financial performance that is accounted for management efficiency and loan portfolio quality. This was achieved using R square and Regression coefficients

**Influence of management efficiency on financial performance (ROA)**

Fixed effect model was estimated between management efficiency and measure of financial performance (Return on Asset). Panel regression was conducted to determine whether there was a significant effect of management efficiency on financial performance. Table 5 presents the regression model on management efficiency with return on Asset as a measure of financial performance.

**Table 5: Regression Fixed Effect of Management efficiency on financial performance (ROA)**

Fixed-effects (within) regression		Numberofobs =	55		
Groupvariable: DTS		Numberofgroups =	11		
R-sq:		Obs per group:			
within=	0.0641	min =	5		
between=	0.2026	avg=	5		
overall=	0.1037	max=	5		
		F(1,43) =	5.61		
corr(u_i, Xb)=-0.4742		Prob > chi2 =	0.043		
ROA	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
Management Efficiency	0.109225	0.053647	2.04	0.043	-0.01913 0.237582
_cons	-0.92804	0.251199	-3.69	0.001	-1.43464 -0.42145
sigma_u	0.365289				
sigma_e	0.162024				
Rho	0.835605	(fraction of variance due to u_i)			



The results of Table 5 show that management efficiency elucidates 10.37% of the total variation in performance of Deposit taking savings and credit cooperatives in Meru County. The results of Table 4.9 indicate the results on the analysis of the variance (ANOVA). The model was statistically significant at 5 percent. Management efficiency is a good predictor of the performance of Deposit taking savings and credit cooperatives. This is justified by an F statistic of 5.61 and the reported p value (.043) which is less than the 0.05 significance level. The study found that over the period of study, management efficiency causes a variation of 10.4% in financial performance of Saccos. These findings resonate with findings of Mohiuddin (2014), which shows management income generation has a positive impact on Sacco financial performance. Nasserinia, Ariff and Fan-Fah (2014) suggest that bad management increases the chances of a SACCOs failing.

**Financial Performance = -0.92804+0.109225 Management Efficiency**

Findings from the model above, the parameter ( $\beta$ ) for management efficiency was 0.109225 with a t-value of 2.04 which was significant at  $p < .05$  level of significance. As such a unit increase in management efficiency would lead to a significant variation in performance of SACCOs by a factor of 0.109225 multiple units. These findings compare favorably with Memmel and Raupach (2010) in their study of several European countries conclude that management efficiency have a positive effect on profit measures which affects financial stability of banks. Andrés and Arce (2012) found out that increased costs affect the left side of the profit and loss statement and this means that the profits realized will be lower than in a case where the costs of operations are lower. Further, Swarnapali (2014) revealed that operating costs of a bank are normally expressed as a percentage of the profits and they are normally expected to influence the financial performance of the bank in a negative manner. Also, Onuonga (2014) conducted a study on the analysis of financial stability of Kenya’s top six commercial banks indicated that management efficiency do significantly influence financial stability of the top six commercial banks.

**Influence of Loan portfolio quality on financial performance**

Fixed effect model was estimated between loan portfolio quality and measure of financial performance (Return on Asset). Panel regression was conducted to determine whether there was a significant effect of loan portfolio quality on financial performance. Table 6.0 presents the regression results.

**Table 6: Regression Fixed Effect of Loan portfolio quality on financial performance**

Fixed-effects (within) regression		Numberofobs =	55
Groupvariable: DTS		Numberofgroups =	11
R-sq:		Obs per group:	
within=	0.0241	min =	5
between=	0.6122	avg=	5
overall=	0.5267	max=	5
corr(u_i, Xb)=0.6644		F(1,43) =	11.06
		Prob > chi2 =	0.030

ROA	Coef.	Std. Err.	T	P>t	[95% Conf. Interval]
Loan Portfolio Quality	0.143064	0.041794	3.42	0.030	-0.04122 0.12735
_cons	-1.28001	0.078172	-16.37	0.000	-1.43766 -1.12236
sigma_u	0.356856				
sigma_e	0.151535				
Rho	0.847229	(fraction of variance due to u_i)			

The result of Table 4.11 shows that loan portfolio quality elucidates 52.67% of the total variation in performance of the Deposit taking savings and credit cooperatives. The results of Table 4.11 indicate the results on the analysis of the variance (ANOVA). The model was statistically significant at 5 percent. Loan portfolio quality is a good predictor of the performance of the Deposit taking savings and credit cooperatives. This is justified by an F statistic of 11.06 and the reported p value (.030) which is less than the 0.05 significance level. The findings revealed a positive relationship of 52.67% between loan portfolio quality and financial performance the savings and Credit cooperatives. This suggests that 52.67% of financial performance is influenced by loan portfolio quality. Similar findings are propagated through various studies. For instance, Muguchia (2012) carried out a study which sought to examine the influence of flexible interest rate on the growth of bank financing in Kenya. Study findings identified non-performing loans as one of the factors which positively influenced mortgage financing. On the contrary, Kithinji (2010) carried out a study in Kenya which sought to determine the influence of credit risk management on the financial performance of Kenyan banks. The findings of this study revealed that there was no significant relationship between the level of non-performing loans and bank financial performance.

### **Financial Performance = -1.28001+0.143064 Loan Portfolio Quality**

From the model above, parameter estimate ( $\beta$ ) for Loan portfolio quality was 0.143064 with a t-value of 3.42 which was significant at  $p < .05$  level of significance. Therefore, a unit change in loan portfolio quality would significantly lead to a change in performance of SACCOs by a factor of 0.143064 multiple units. The results are in agreement with Ongre & Kasu (2013) who conducted a study to determine the factors affecting the financial performance of commercial banks operating in the Kenyan market. This empirical study showed that the performance of commercial banks in Kenya is majorly affected by loan portfolio quality and management efficiency with the effect of liquidity on the same, not being strong. Chimkono, Muturi, & Njeru (2016) evaluated the effect of non-performing loans and other factors on performance of commercial banks. The findings revealed that non-performing loan ratio and cost efficiency ratio had a significant negative impact on the performance of Malawian commercial banks.

### **V. Conclusion and Recommendation**

The study concludes that management efficiency has a positive effect on the financial performance of Saccos Exchange. The study revealed that an increase in management efficiency ratio would result in a positive increase in both ROA of the Saccos. Management is responsible for making important decisions in an organisation and financial institutions require sound management in order to grow. Effective and efficient management— whether in terms of income generation, portfolio diversification or cost reduction – are thus crucial for Saccos as can contribute to increased Sacco's profits. There exists a significant relationship between the loan portfolio quality and financial performance of Saccos. Increased loan portfolio quality strengthens with the liquidity and future borrowing. Since majority of contributions and repayments are used to advance loans, increase in loan portfolio quality will hamper the turnover of this SACCO'S. In view of the aforementioned analysis, this study concludes that the effect of loan portfolio quality, is a significant contributor of financial performance of SACCOs.

The study recommends that deposit taking Saccos need to reduce their operational expense so as to increase their profit margins. This can be achieved by adoption of appropriate information technology to automate various processes and restructuring cost management strategy to reduce the deposit taking Sacco's operational expense. Further, managers should lower the proportion of operating fixed cost in relation to operating variable cost. This can be achieved by reducing the cost associated with fixed assets which attracts fixed operating cost monthly as well as investing in fixed assets which have high returns. The study recommends that Saccos need to put more efforts in managing their loan portfolio quality as it has a very significant influence on their financial performance. The Deposit Taking Saccos should conduct client screening with the aim of improving profitability. They should set guarantees as they extend to their clients. Asset managers should always monitor all outstanding loans in the portfolio and where possible and appropriately extend the loan repayment period for clients experiencing difficulties in loan repayment due to changes in the market. The emphasis should be placed on the ability of the loans so granted to generate enough cash flows for the liquidation of the facility.

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