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Relationship between Liquidity and Credit Referencing by Savings and Credit Cooperatives in Kenya

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Abstract: *The ability of credit-strapped businesses and individuals to obtain inexpensive, timely loans when required is the true measure of any functioning credit market. On the other hand, in order for Savings and Credit Cooperatives (SACCOs) to optimize their operations in the credit market and reduce the level of non-performing loans, they use available credit history when evaluating potential borrowers. However, limited credit access in Kenya is particularly acute and a difficult issue. By lowering the information imbalance between borrowers and lenders through better and higher-quality credit evaluation, Credit Reference Bureaus (CRBs) have thus emerged as a successful instrument to enhance access to credit. The fundamental test of any working credit market is whether credit-strapped businesses and individuals can acquire affordable, timely loans when needed. The current study examined the relationship between liquidity and credit referencing by savings and credit cooperatives in Kenya. The objectives of the study included; to establish the relationship between capital adequacy ratio and credit referencing by savings and credit cooperatives and to establish the relationship between operation cost and credit referencing by savings and credit cooperatives in Kenya. The study employed a causal-comparative descriptive approach. The method used was quantitative. The study's target population consisted of 84 SASRA-licensed SACCOs operating in Kenya with a combined asset base exceeding 1 billion shillings for the year ending December 31, 2019. The study employed a purposive sampling design in collecting data for the research study. To represent the total population, a sample size of 46 SACCOs was chosen. Data for the study was gathered from SACCOs upon request or from their current financial statements that were already publicly available. In order to clarify and establish the nature of the relationship between liquidity and credit referencing by SACCOs in Kenya, data was presented using tables. Descriptive and inferential findings revealed that capital adequacy ratio and operation cost affected credit referencing by savings and credit cooperatives in Kenya. Correlation analysis results showed that the relationship between capital adequacy ratio and credit referencing by SACCOs was significant (r=0.863**; P=0.001). Similarly, there was a significant (r=0.841**; P=0.002) relationship between operation cost and credit referencing. The study came to the conclusion that capital adequacy ratio affect credit referencing by SACCOs in Kenya.*

Key Words: *Liquidity, Capital Adequacy Ratio, Operation Cost, Credit Referencing, Savings and Credit Cooperatives*

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1. Introduction

Savings and credit cooperatives promote economic growth through channeling credit facilities for business operations and investments (Safiyuddin, Abd-Wahab, & Maamor, 2021). Savings and credit cooperatives (SACCOs) are the most important financial institutions that provide funds for economic activities particularly in developing countries where capital markets and financial sector at large are still in development stages. SACCOs are influenced by factors which determine their ability to continue performing their functions effectively. Liquidity is one of the factors that affect the functioning of SACCOs (Hessou, 2018). The International Financial Reporting Standards (2006) define liquidity as the available cash for the near future, after

taking into account the financial obligations corresponding to that period. Liargovas and Skandalis (2008) argue that firm can use liquid assets to finance its activities and investments when external finance is not available. On the other hand, higher liquidity can allow a firm to deal with unexpected contingencies and to cope with its obligations during periods of low earnings. Liquidity is essential in all SACCOs to meet customer withdrawals, compensate for balance sheet fluctuations, and provide funds for growth (Njeri, 2014).

Liquidity management involves estimating liquidity requirements and meeting those needs in a cost-effective way (Owino, 2011). An effective liquidity management requires financial institutions to estimate and plan for liquidity demands over various periods and to consider how funding requirements may evolve under various scenarios, including adverse conditions (Njeri, 2014). SACCOs must maintain sufficient levels of cash, liquid assets, and prospective borrowing lines to meet expected and contingent liquidity demands (Ogol, 2011). The management of SACCOs has to present the capital adequacy return reports, liquidity statement report, statement of financial position and statement of deposit return as well as return on investments report which compares land, building, and financial assets to the SACCO's total assets and its core capital. Potential borrowers are evaluated using the available credit history in order to streamline their operations in the credit market and lower the amount of non-performing loans (Hessou, 2018). By lowering the information asymmetry between borrowers and lenders and improving the quality of credit assessment, credit information sharing (CIS) agreements have proven a successful technique to increase access to credit (Alloyo, 2013). According to Gaitho (2009) Credit Reference Bureau (CRB) is mandated to collect and process information on credit history of individuals, companies, firms, business entities and relays it to lending institutions. CRB uses the information for the purposes of creating credit reports and scores. The credit reports and scores are used to gauge whether a borrower is worthy of credit or loan.

According to Pagano and Jappelli, (1993), when lenders share information borrowers become more disciplined and thus generating social benefits like credit expansion and better credit allocation. However, these benefits are not distributed evenly across all groups. Sharing information benefits good payers and those individuals who apply for credit for the first time, while high-risk borrowers are negatively affected. Capital refers to owners' equity invested in a venture. This is usually the last resort when an institution is facing financial distress. Capital is very imperative as it creates liquidity due to the elasticity of deposits in cases of financial distress. This avoids cases of distress (Diamond, 2000). Amount of capital to be held by an institution is measured by capital adequacy ratio which basically represents how adequate the institution is prepared to withstand financial crisis (Dang, 2011). Transaction costs reflect the costs of economic organization both outside and inside the firm and are one means by which one can measure the efficiency of different institutional designs in achieving economic outcomes in particular environments.

2. Statement of the Problem

Savings and Credit Cooperatives have only lately adopted the ideas of credit ratings and credit reference bureaus. There were hardly any SACCOS in Kenya that were registered with CRB in addition to SASRA. Serial defaulters turned to SACCOs to borrow money without exposing their credit histories because banks adopted the idea of CRBs before SACCOs. As a result, the SACCOs developed bad loan portfolios, which decreased their effectiveness and raised default rates. Numerous research on CRBs have demonstrated that their presence increases the credit market, lowers default and interest rates, increases profitability, and boosts industry competition. Shisia, Marangu, and Omwario (2014) conducted a review of the contributions of CRB rules to credit risk mitigation in Kenya's banking industry. Keitany (2013) investigated the effect of CRBs on NPLs in Kenyan commercial banks. These studies mainly focused on effect of CRBs on commercial banks. They are yet to adequately address the relevance of the CRBs and its effect on SACCOs. Further, there is scanty research information on the relationship between liquidity and credit referencing by SACCOS in Kenya. By investigating the connection between liquidity and credit referencing by savings and credit cooperatives in Kenya, this study intended to close this apparent gap.

3. Objectives of the Study

i) To establish the relationship between capital adequacy ratio and credit referencing by savings and credit cooperatives in Kenya.
ii) To establish the relationship between operation cost and credit referencing by savings and credit cooperatives in Kenya.

4. Literature Review

Liquidity entails the measure of the financial institution's cash and assets that can be quickly used to meet short-term financial obligations (Safiyuddin *et al*., 2021). Liquidity also describes the easiness to convert assets into cash to meet the short-term cash requirements. By ensuring a SACCO's ability to meet its obligation, the

management of liquidity reduces the probability of adverse situations. It addresses problems such as deterioration in asset quality to keep the financial institution in sustainable financial position. Therefore, analysis of liquidity requires SACCOs to assess the cash positions and examine the funding requirements in different times. According to Hessou (2018) conversion of illiquid assets into liquid assets is an important activity hence liquidity management ought to be an essential part of their operational strategy. It is therefore imperative for the SACCOs to review and reexamine liquidity policies in light of their business operations. The ability to meet short-term financial needs obligations of the savings and credit cooperatives depend on the level of capital. This means that adequacy of capital influence the SACCOs liquidity (Safiyuddin *et al*., 2021).

Capital Adequacy Ratio set standards for financial institutions, including SACCOs in regard to their ability to settle obligations, address credit risks as well as operational risks (Dong, 2019). An effective capital adequacy ratio helps financial institutions to absorb losses and ensure continuity of their operations. As such, a good capital adequacy ratio protects SACCOs from becoming insolvent. Capital requirements have become the only true internationally accepted standards of bank soundness (Mishkin, 2008). Due to the scrutiny of the banks' balance sheet structure from regulators and other stakeholders capital adequacy has emerged as major strategic theme for bank managers, one to which they devote an increasing amount of time and effort: capital provides a fund against which to charge unexpected or temporary losses, thus acting as a safety cushion for equity holders and debt holders, capital is considered by competitors, customers and rating agencies as a proxy for soundness. Savings and credit cooperatives incur operating costs in its operational activities that comprise fees, commissions and brokerage fees (Njeri, 2014). Operating costs and relationship with the liquidity are critical aspects that ought to be examined by savings and credit cooperative. Management of operating costs determines the level of efficiency and ability of SACCOs in performing their operations. Therefore, cost minimization by SACCOs can enable them to optimize operations and meet short-term financial requirements (Dia, Takouda, & Golmohammadi, 2020).

Credit rationing theory contends that credit rationing results in the exclusion of borrowers who are viewed as being too risky from credit markets (McCarthy, Oliver, & Verreynne, 2017). Lack of institutional support implies moral hazard, which leads to the rationing of credit. Until equilibrium is reached, where supply and demand are equal, the greater cost resulting from higher risk is typically offset by a high price (interest rate) (Motoki, Cruz, & Assunção–reynaldo, 2019). The borrower will be willing to pay a higher interest rate the riskier the project is. Therefore, only borrowers investing in extremely hazardous enterprises are willing to borrow money at high interest rates. Thus, the interest rates a player is prepared to pay reveals his risk class. To address the problem of credit rationing, credit bureaus were created. A lender evaluates the issue that only the borrower accurately knows his or her purpose and capacity to repay before granting a loan. Therefore, the lender must guess the borrower's risk profile. Such evaluations are essential since a loan entails a promise to pay later, which has significant ramifications for the lending markets. The ideal interest rate is higher than the equilibrium interest rate as a result of credit rationing (McCarthy *et al*., 2017). Borrowers who are willing to accept worsening loan conditions run a disproportionately high chance of default. SACCOs will think very dangerous of any borrowers who are willing to pay exorbitant interest rates. Additionally, the risk of the borrower is impacted by the interest rate charged. A high interest rate increases the cost of repayment, which has negative moral hazard effects on the borrower's motivations. SACCOs frequently decide to ration their credit because of these factors. Liquidity is influenced by capital adequacy ratio and operation cost (Hessou, 2018). As such, capital adequacy ratio and operation cost influence credit referencing by savings and credit cooperatives as illustrated by conceptual framework on Figure 1.

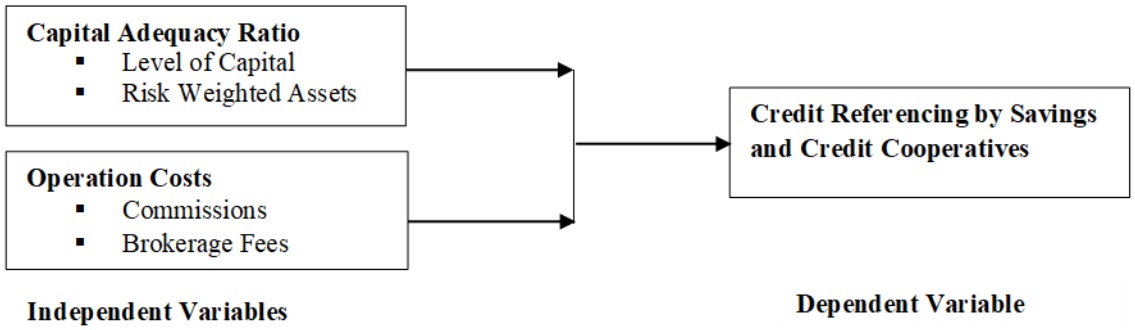

Figure 1: Conceptual Framework

Capital adequacy ratio expresses the SACCO's capital as a percentage of its risk-weighted credit exposures (Dia *et al*., 2020). As illustrated on figure 1, the capital adequacy ratio is indicated by the level of capital and the risk weighted assets of the SACCO. Operation costs of the SACCOs determines their ability to meet the short-term financial obligations. The incur commissions and brokerage fees which determine the level of liquidity. Liquidity as indicated by capital adequacy ratio and operation cost have a direct link to credit referencing by savings and credit cooperatives.

Empirical studies have been conducted on liquidity, capital adequacy ratio, operation cost and credit referencing. Mwangi (2012) investigated the impact of credit risk management on commercial banks' financial performance. The results indicated that both the non-performing loans ratio (NPLR) and the capital adequacy ratio (CAR) have a negative and moderately significant effect on return on equity (ROE), with the NPLR having a greater significant effect on ROE than the CAR. Kombo (2017) examined the importance of capital adequacy requirements in Basel III framework for commercial banks in Kenya. The study concluded that capital adequacy requirement is perceived to be important in commercial banks. The study thus deduced that financial stability, credit risk management, reduced vulnerability to liquidity shocks balance sheet structure and deposit insurance affects the capital requirement of the commercial banks in Kenya.

Riungu (2014) examined the effect of credit reference bureaus on profitability of commercial banks in Kenya. The study revealed that credit reference bureau services assist in reducing the incidence of non-performing loans and hence in improving the bank profitability. The results further showed that the relationship between operation costs and bank profitability prior to introduction of CRB was lower than the relationship between the two after introduction of the CRB. This shows that CRB improved the operation costs by banks. Ngunjiri (2015) carried out a study on the standard credit reference bureau and the performance of multinational banks operating in the East African community. The study found that prudential regulation and effective management of the standard credit reference bureau would lead to more robust credit policy enforcement, thus positively impact to the performance of multinational banks. Credit risk would be lower, recovery costs and impairment rates would significantly reduce.

Gaitho (2013) investigated the effect of credit reference bureaus on credit access in Kenya. The study found out that CRB reduces borrowing cost and loan delinquencies to a moderate extent. It further established that CRB has enhanced effective risk identification and monitoring and microcredit extension in Kenya. Keitany (2013) investigated the effect of CRBs on NPLs in Kenyan commercial banks. The study findings indicated that there is strong negative relationship between the loan default and the profitability of these SACCOS. Shisia *et al*. (2014) conducted a review of the contributions of CRB rules to credit risk mitigation in Kenya's banking industry. The research findings revealed that the Credit Reference Bureaus concept contributes towards reduction of credit risks and that implementation of Credit Reference Bureaus regulation has gained general acceptance substantially in Kenya. The study also revealed that lack of awareness and non-compliance are currently the major challenges of Credit Reference Bureaus regulation in Kenya.

Kago (2014) investigated the impact of credit reference bureau services on the financial performance of Kenyan deposit-taking microfinance companies. The study found strong credit information sharing is therefore essential not only to individual prosperity, but also to a country's overall economic growth. The study established that financial performance is rated with credit information sharing with the latter causing the former. Kiptoo *et al.* (2015) sought to assess the influence of cross borrowing on financial performance of Savings and Credit Co-operatives (SACCOs) in Eldama Ravine Sub-County. Results indicted adverse selection was found to strongly influence financial performance than credit policy. Mukuna (2013) investigated the significance of credit reference bureaus and their influence on the financial performance of Kenyan banks. The research findings showed that before commissioning of credit reference bureaus the semi-annual financial performance of banks was fairly constant. The findings also established that consumers and lenders find the credit reference bureaus useful in the financial industry in Kenya which will lead to a bigger credit market, lower default and interest rates, improved profitability for the financial institutions, increase price competitiveness of credit facilities, instill good credit behavior among lenders, improve pool of borrowers, expansion of lending and help improve access to credit in Kenya. Alloyo (2013) investigated the importance of credit reference bureaus and their impact on the financial performance of Kenyan banks. The findings also established that credit reference bureaus are useful in the Kenyan financial industry, which will lead to a larger credit market, lower default and interest rates, improved profitability for financial institutions, increased price competitiveness of credit facilities, instill good credit behavior among lenders, improve pool of borrowers, lending expansion, and help improve access to credit in Kenya.

A careful analysis of previous literature revealed many conceptual and contextual study gaps on the relationship between liquidity and credit referencing by Kenyan savings and credit cooperatives. For example, Gaitho (2013) investigated the effect of credit reference bureaus on credit access in Kenya, Keitany (2013) investigated the effect of CRBs on NPLs in Kenyan commercial banks. Shisia *et al*. (2014) conducted a review of the contributions of CRB rules to credit risk mitigation in Kenya's banking industry. Kago (2014) investigated the impact of credit reference bureau services on the financial performance of Kenyan deposit-taking microfinance companies. Kiptoo *et al.* (2015) sought to assess the influence of cross borrowing on financial performance of Savings and Credit Co-operatives (SACCOs) in Eldama Ravine Sub-County. Further, Mukuna (2013) investigated the significance of credit reference bureaus and their influence on the financial performance of Kenyan banks. These studies have research gaps which include objective, scope and geographical location gaps. Specifically, there exists an objective gap since this study sought to establish the relationship between liquidity and credit referencing by savings and credit cooperatives in Kenya. Further, there exists a scope gap since this study focused on SASRA regulated SACCOs in Kenya. Many of the studies done on CRBs have been concentrating on commercial banks but very few studies have been done on its influence on SACCOs in Kenya. In addition, the studies done on influence of CRBs have been majoring on influence of CRB on Profitability, operation performance, financial performance and loan performance but no study has been done on the influence of CRB on financial liquidity performance. This study therefore filled this noticeable gap by examining the relationship between liquidity and credit referencing by savings and credit cooperatives in Kenya.

5. Research Methodology

The study used a causal-comparative research design in evaluating the relationship between liquidity and credit referencing by SACCOs in Kenya. This design was appropriate for this study because comparison allowed for the establishment of conclusive causality attributing observed changes in liquidity to Credit referencing practices. The study focused on SASRA licensed SACCOs with a total asset base of above 1 billion shillings for the period ending 31st December 2019 and operating in Kenya. The specific context of interest was 84 licensed SACCOs in Kenya. The study utilized secondary data. The purposive sampling design was used to choose SACCOs with a total asset base above Ksh.1 billion because the SACCOs with such asset base were likely to have kept proper financial records, in addition, they were likely to have been in existence both before and after the introduction of CRB rules. A sample of 46 SACCOs was obtained using the Nassiuma's (2008) sample determination formula. Data for the study were gathered from current SACCO financial statements that are publicly available or upon request from the SACCOs. Data on the financial performance of SACCOs were collected during a ten-year period from 2006 to 2015, covering five years before the mandate to provide information and five years and five years after the bill was passed. Statistical Packages for Social Sciences (SPSS) aided data analysis. The analysis employed both descriptive and inferential statistics. Descriptive statistics included distribution measures such as percentages and means. Correlation coefficient and multiple regression analyses were used as inferential statistics. Multiple regression analysis was performed at a 95% confidence level to assess the significance of the independent variables' influence on the dependent variable. The following simple regression model was adopted:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon}$$

Where:
Y represents credit referencing by SACCOs in Kenya
$\mathbf{B_0}$ represents constant for the equation
$\mathbf{X_1}$ represents the capital adequacy ratio.
$\mathbf{X_2}$ represents Operation cost.
$\boldsymbol{\varepsilon}$ represents margin of error
β1, β2 represent beta coefficients.

6. Results

The results from descriptive and inferential analysis are presented in this section. These include the results pertaining to liquidity; capital adequacy ratio and operating cost and credit referencing by savings and credit cooperatives.

6.1 Capital Adequacy Ratio and Credit Referencing by SACCOs in Kenya

After comparing data on average Capital Adequacy Ratio (CAR) and CRB operation for the 46 SACCOS between 2006 and 2015 it was found that CAR declined steadily from 2006 to 2015. The average capital adequacy reduced from 6.03% in year 2006 to 3.68% in year 2015. This decline was consistent for all years in the entire period. The results are illustrated in Table 1 and Figure 2.

Table 1: Comparison of Capital Adequacy Ratio (CAR) and Credit Referencing by Savings and Credit Cooperatives in Kenya.

YEAR	Average Capital Adequacy Ratio (CAR)
2006	6.03
2007	5.53
2008	5.10
2009	4.79
2010	4.69
2011	4.27
2012	4.02
2013	3.91
2014	3.81
2015	3.68

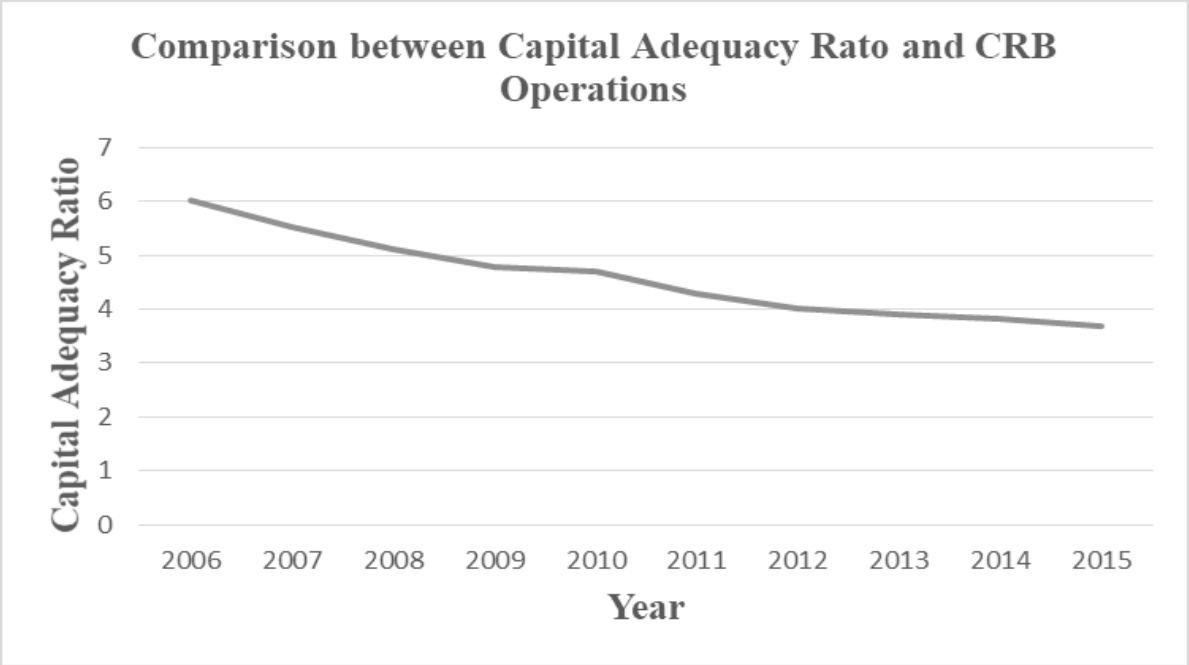

Figure 2: *Comparison of Capital Adequacy Ratio (CAR) and Credit Referencing by Savings and Credit Cooperatives in Kenya*

6.2 Operation Cost and Credit Referencing by SACCOs in Kenya

From the findings the average operating cost for the 46 SACCOS fluctuated from year 2006 to year 2015. But when a graph that depicts the percentage of operation cost to average lending volume is plotted a clear illustration of the effect of CRB on operation cost is clearly observed. From the graph there is a steady decline of operation cost 2006 to 2011 followed by a sharp decline from 2011 onwards. The decline is depicted as shown in Table 2 and Figure 3 below:

Table 2: Comparison of Average Operation Cost and Percentage of Average Cost to Lending Volume

Year	Average Operation Cost	Percentage of Operation cost to Lending volume.
2006	306289203.7	41.8976917
2007	315892112.1	39.24019924
2008	325895646.8	40.37272341
2009	329509827.6	40.49272454
2010	337170673.9	40.47575713
2011	330162978.3	37.46210407
2012	292126043.5	33.00139719
2013	291978699.1	30.02873442
2014	323897598.8	29.78851178
2015	408132272.1	24.51577558

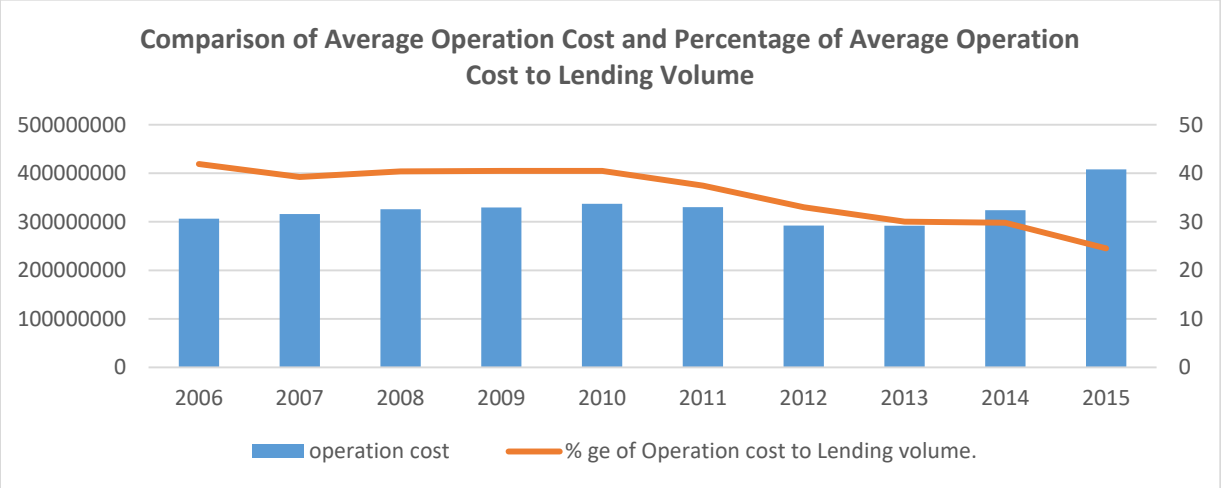

Figure 3: *Comparison of Average Operation Cost and Percentage of Average Operation Cost to Lending Volume*

6.3 Correlation Analysis

Correlation was conducted to determine the relationship between liquidity; capital adequacy ratio and operation cost and credit referencing by savings and credit cooperatives.

a) Relationship between Capital Adequacy Ratio and Credit Referencing by Savings and Credit Cooperatives in Kenya

Findings showed a strong positive correlation of 0.863 between capital adequacy ratio and credit referencing by SACCOs. The P value was 0.001 at 1% (0.01) level of significance. This means credit referencing is a strong determinant of capital adequacy ratio of SACCOs in Kenya. When significance level is very small; less than 0.010 them the correlation is significant between the two variables. This is shown in Table 3 below:

Table 3: Relationship between Capital Adequacy Ratio and Credit Referencing by Savings and Credit Cooperatives in Kenya

		Credit Referencing by SACCOs
Capital Adequacy Ratio	Pearson Correlation	.863**
	Sig. (2-tailed)	.001
	N	10

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

b) Relationship between Operations Cost and Credit Referencing by Saving and Credit Cooperatives in Kenya

Findings showed a strong positive correlation of 0.841 between operations cost and credit referencing by SACCOs in Kenya. The P value was 0.002 at 1 % (0.01) level of significance. This means credit referencing is a strong determinant of Operations of SACCOs in Kenya. When significance level is very small (less than 0.010 them the correlation is significant between the two variables. This is shown in Table 4 below:

Table 4: Relationship between Operations Cost and Credit Referencing by Saving and Credit Cooperatives in Kenya

		Credit Referencing by SACCOs
Operation Cost	Pearson Correlation	.841**
	Sig. (2-tailed)	.002
	N	10

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

6.4 Regression Analysis

Regression analysis was undertaken to establish the relationship by predicting the variation in credit referencing by savings and credit cooperatives from variations in capital adequacy ratio and operation cost.

a) Capital Adequacy Ratio

Regression analysis was carried out to predict the variation of credit referencing from variation in capital adequacy ratio. Relevant results are illustrated on Tables 5, 6 and 7.

Table 5: Model Summary for the Relationship between Capital Adequacy Ratio and Credit Referencing by Savings and Credit Cooperatives in Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.863[a]	.744	.712	.283	1.233

a. Predictors: (Constant), Capital Adequacy Ratio

b. Dependent Variable: Credit Referencing

Capital Adequacy Ratio was found to be satisfactory in explaining credit referencing by SACCOs. This is supported by coefficient of determination also known as the R square of 0.744. This means that CAR explains 74.4 % of the variations in the dependent variable which is credit referencing by savings and credit cooperatives in Kenya.

Table 6: Analysis of Variance on Capital Adequacy Ratio

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.860	1	1.860	23.258	.001[b]
	Residual	.640	8	.080		
	Total	2.500	9			

a. Dependent Variable: Credit Referencing

Table 6 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of credit referencing by SACCOs. This was supported by an F statistic of 23.258 and the reported p value (0.001) which was less than the conventional probability of 0.05 significance level.

Table 7: Capital Adequacy Ratio Regression Coefficients Matrix

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-1.139	.555		-2.055	.074	-2.418	.139		
Capital Adequacy Ratio	.576	.119	.863	2.223	.001	.301	.852	1.000	1.000

a. Dependent Variable: Credit Referencing

Regression coefficients matrix in Table 7, revealed that there was a negative and significant relationship between autonomy and growth (β=0.576, p=0.001). This was supported by a calculated t-statistic of 2.223 which is larger than the critical t-statistic of 1.96. Thus credit referencing by savings and credit cooperative in Kenya has an effect of Capital Adequacy Ratio (CAR).

b) Operation Cost

Regression analysis was carried out to predict the variation of credit referencing from variation in operation cost. Relevant results are illustrated on Tables 8, 9 and 10.

Table 8: Model Summary for Operation Cost and Credit Referencing by Savings and Credit Cooperatives in Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.841[a]	.708	.672	.302	1.316

a. Predictors: (Constant), Operation Cost
b. Dependent Variable: Credit Referencing

Operation cost was found to be satisfactory in explaining credit referencing by SACCOs. This is supported by coefficient of determination also known as the R square of 0.708. This means that operation cost explains 70.8 % of the variations in the dependent variable which is credit referencing by savings and credit cooperatives in Kenya.

Table 9: Analysis of Variance on Operation Cost

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.770	1	1.770	19.398	.002
	Residual	.730	8	.091		
	Total	2.500	9			

a. Dependent Variable: Credit Referencing
b. Predictors: (Constant), Operation Cost

Table 9 provides the results on the analysis of the variance (ANOVA). The results indicate that the overall model was statistically significant. Further, the results imply that the independent variable is a good predictor of credit referencing by SACCOs. This was supported by an F statistic of 19.398 and the reported p value (0.002) which was less than the conventional probability of 0.05 significance level.

Table 10: Operation Cost Regression Coefficients Matrix

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-1.152	.610		-1.890	.095	-2.559	.254		
Operation Cost	.074	.017	.841	2.404	.002	.035	.113	1.000	1.000

a. Dependent Variable: Credit Referencing

$Y = (-1.152) + 0.074\ X_1$
Where Y = Credit referencing by SACCOs in Kenya.
X_1= Operation cost.
Regression coefficients matrix in Table 10, revealed that there was a positive and significant relationship between autonomy and growth (β=0.074, p=0.002). This was supported by a calculated t-statistic of 2.404 which is larger than the critical t statistics. Thus credit referencing by savings and credit cooperative in Kenya has an effect of operation cost.

7. Conclusion

The study revealed that there exists a statistically significant negative relationship between Capital Adequacy Ratio (CAR) and credit referencing by SACCOs in Kenya thus concluding that credit referencing by SACCOs in Kenya has a significant effect on CAR. A statistically significant positive relationship was established between lending volume and credit referencing by SACCOs in Kenya thus concluding that credit referencing by SACCOs in Kenya has a significant effect on lending volume. Further it was established that there was statistically significant positive relationship between operating cost and credit referencing by SACCOs in Kenya thus concluding that credit referencing by SACCOs in Kenya has a significant effect on operating cost.

8. Recommendations

Savings and credit cooperatives should establish and implement policies that will guide increase in levels of regulatory capital and decreasing their levels of risk-weighted assets. This will help them achieve and maintain adequate capital ratios and sustainable liquidity levels. It is also recommended that Savings and credit cooperatives should adopt cost-effective streamlining of operations and eliminate redundant processes to save on costs of operations and improve on liquidity.

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