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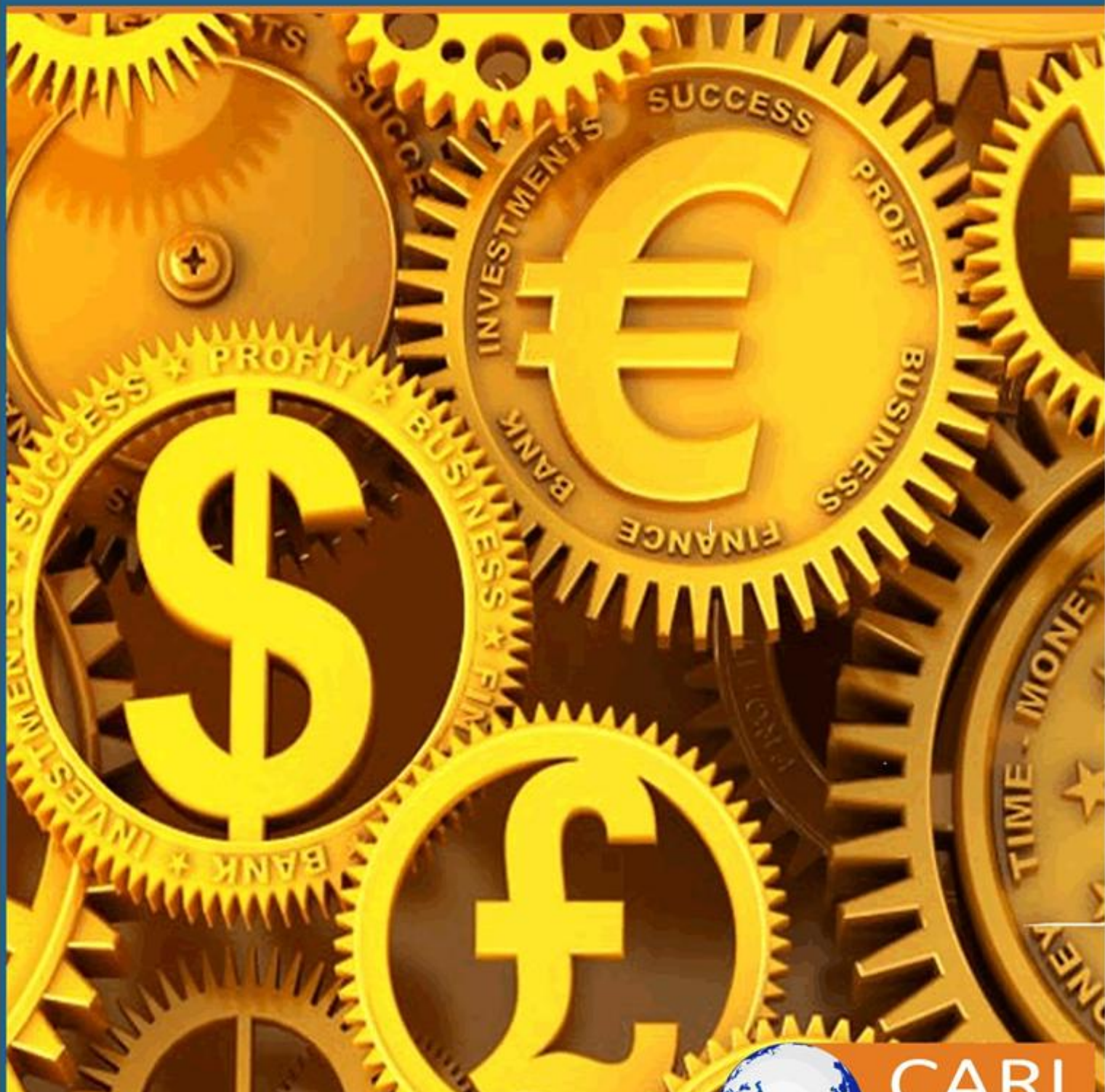

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Credit Risk Management and Asset Quality of Tier One Deposit-Taking Saccos in Nairobi, Kenya

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Abstract

Purpose: This study investigated the relationship between credit risk management and asset quality among Tier 1 deposit-taking SACCOs in Nairobi County, Kenya, with a primary focus on credit risk as a critical variable. Despite the vital role of these institutions in financial inclusion, many struggle with deteriorating asset quality and non-performing loan ratios that exceed regulatory thresholds.

Methodology: Using a descriptive research design and a census of 16 Tier 1 SACCOs over a seven-year period (2017–2023), the study analyzed secondary data from the SACCO Societies Regulatory Authority (SASRA). Credit risk was measured using the Loan-to-Value (LTV) Ratio, evaluating the potential for borrower default and the adequacy of collateral. The theoretical framework for this variable was anchored in Credit Risk Theory, which examines asset evolution and default probability. Inferential statistics, including Pearson correlation and fixed-effect panel regression, were employed to determine the impact of credit risk management on asset quality. **Findings:** The findings revealed a significant positive relationship between credit risk management and asset quality ($r = 0.3323$, $p = 0.0003$). Regression analysis indicated that credit risk management accounts for approximately 13.85% of the variation in asset quality within SACCOs over time, with a one-unit increase in risk management efforts leading to a 0.177-unit improvement in asset quality. Notably, among all credit management components, credit risk management was identified as having the strongest influence on the financial health of these institutions.

Unique Contribution to Theory, Policy and Practice: The study concluded that adopting robust credit risk frameworks, including stricter LTV limits and enhanced borrower default assessments, is essential for mitigating financial instability and ensuring the long-term sustainability of the SACCO sector.

Keywords: *Credit Risk, Asset Quality, Deposit-Taking SACCOs, Loan-to-Value Ratio, Savings and Credit Cooperatives (SACCO) Societies Regulatory Authority (SASRA)*

Background of the study

Asset quality is of paramount importance for financial institutions and the overall economy as it serves as a critical indicator of a lender's financial health, risk management practices and the effectiveness of credit allocation (Rajan & Dhal, 2013). Asset quality is of great importance as it directly reflects the health of lending institutions and their borrowers. It ensures financial institutions' stability, sustains profitability, and fosters investor and depositor confidence (Golin & Delhaise, 2013). For borrowers, good asset quality signifies responsible credit management, maintains creditworthiness, and facilitates access to future financing. When there is sound asset quality contribution to overall economic stability is established by encouraging responsible lending practices, supporting business growth, and fostering a healthy financial ecosystem (Chen & Sivakumar, 2021)

Effective credit risk plays a pivotal role in shaping the loan performance of deposit-taking Savings and Credit Cooperatives (Ngondi, 2019). By employing prudent risk assessment techniques, including thorough borrower evaluation and credit scoring models, SACCOs can ensure responsible lending practices. Additionally, the implementation of dynamic monitoring mechanisms aids in early identification of potential defaults, enabling timely intervention and risk mitigation. Rigorous loan documentation and transparent communication with borrowers foster a culture of accountability, reducing default rates. Moreover, diversification of loan portfolios across various sectors and borrower profiles contributes to overall portfolio resilience. Furthermore, continuous staff training on credit evaluation and collection techniques enhances the SACCOs' ability to adapt to evolving economic conditions. By combining these, SACCOs in Brazil can optimize loan performance, promote financial stability, and contribute to the sustainable growth of their cooperative members.

Savings and Credit Cooperative Organizations (SACCOs) in Kenya

Savings and Credit Cooperative Organizations (SACCOs) in Kenya represent a cornerstone of the country's financial landscape, operating as member-owned, voluntary associations built on principles of self-help and mutual support. The Kenyan SACCO sector is recognized as the largest in Africa, reflecting a robust culture of community-based saving and lending. These institutions are vital for financial inclusion, providing essential credit and savings services to approximately 6.3% of the population. By offering start-up capital and financial security to millions who might otherwise be excluded from traditional banking, SACCOs serve as a primary engine for socio-economic empowerment across both rural and urban areas. The economic significance of the SACCO movement is profound, with its total net worth projected to contribute roughly 45% of Kenya's Gross Domestic Product (GDP). As of 2017, the sector held an aggregated asset base of approximately $1.8 trillion USD, with a significant portion of these funds allocated to a $1.2 trillion USD loan portfolio. To maintain the stability of this massive financial pillar, the SACCO Societies Regulatory Authority (SASRA) was established to license and oversee Deposit-Taking SACCOs (DT-SACCOs). These regulations are designed to protect member savings and ensure

that institutions maintain high standards of financial health, particularly regarding asset quality and liquidity. Despite their economic weight and regulatory oversight, Kenyan SACCOs face a growing challenge in the form of deteriorating asset quality and rising credit risk. Recent data indicates that over 60% of DT-SACCOs fail to meet the mandatory non-performing loan (NPL) ratio of less than 5%, with the sector-wide average rising to 8.45% by 2023. This trend is particularly concerning because SACCOs lack a "lender of last resort," meaning that widespread loan defaults could lead to insolvency and the total loss of member savings. This study therefore focuses on credit risk—specifically the Loan-to-Value ratio—as a critical variable to determine how better risk management can stabilize these institutions and safeguard the financial future of their members.

Statement of Problem

Despite the critical role of Deposit-Taking SACCOs (DT-SACCOs) in providing financial access to 60% of the Kenyan population, over 60% of these institutions struggle to adhere to the mandated regulatory threshold of a non-performing loan (NPL) ratio below 5%. The sector has witnessed a steady deterioration in loan quality, with the average NPL ratio rising from 5.73% in 2016 to 8.45% in 2023, and 64 institutions reporting ratios exceeding 10%. This trend poses a severe threat to institutional sustainability and the safety of member savings, particularly because SACCOs lack a "lender of last resort" to provide a financial safety net in cases of insolvency. If left unaddressed, this high level of credit risk could erode public trust, trigger mass member withdrawals, and lead to widespread license revocations. The problem is further complicated by inconsistencies in existing literature, where various studies have produced conflicting findings on how credit management practices influence asset quality. While some research in specific Kenyan regions suggests a negative and insignificant link between credit policies and asset quality, other studies have found positive and significant associations. This lack of consensus creates a significant gap in conceptualization and context, particularly for Tier 1 SACCOs in Nairobi. This research specifically addresses the credit risk variable—measured by the Loan-to-Value (LTV) ratio—to determine how setting stricter LTV limits and improving risk assessment can mitigate financial instability and enhance the overall health of SACCO loan portfolios.

Objectives of the study

The objective of the study was to determine the effect of credit risk on the asset quality of tier one deposit taking Sacco’s in Nairobi, Kenya

Research Hypothesis

H_0**:** Credit risk has no significant effect on the asset quality of tier 1 deposit taking Sacco’s' in Nairobi

Scope of the Study

This study examined the relationship between credit management and asset quality among deposit-taking SACCOs in Nairobi, Kenya. The scope covered a seven-year period from 2017 to 2023,

providing a substantial longitudinal dataset to establish robust statistical significance and identify reliable trends. Nairobi was selected due to its high density of SACCOs, specifically focusing on those licensed and regulated by SASRA and the Ministry of Co-operatives to ensure adherence to professional and regulatory standards.

LITERATURE REVIEW

Theoretical Framework

Credit Risk Theory

This theory was proposed by Melton in 1974. The theory postulates that the default occasions come from the company's evolution of assets modelled by the process of diffusion with constant parameters. The credit risk theory, also known as the structural theory, is based on the firm's asset evolution and default. Such models are commonly defined as "structural models" and are based on variables related to a specific issuer. Development of this class is represented by a set of replicas where the loss conditional on default is exogenously caused or can be determined separately by maintaining the endogenous nature of the event of default.

Credit risk theory often relies on historical data and statistical models to assess the likelihood of borrowers defaulting on loans. However, SACCOs may serve communities or groups with unique characteristics and circumstances that may not be fully captured by traditional credit risk models (Mileris, 2012). This can lead to inaccuracies in risk assessments and potentially result in SACCOs underestimating the credit risk associated with certain borrowers. Credit risk theory typically focuses on individual borrower characteristics, such as credit history and financial metrics, to assess risk. While these factors are important indicators of creditworthiness, they may not fully capture the broader socio-economic factors that can impact borrower behavior and repayment ability (Aduda & Obondy, 2021). Credit risk theory serves as the foundation for effective credit risk management practices in SACCOs and other financial organizations. Firstly, it enables SACCOs to assess and quantify the risk associated with lending activities (Mangram, 2013).

Conceptual Framework

The independent variable, credit risk, was used to drive this study. Asset Quality was the dependent variable.

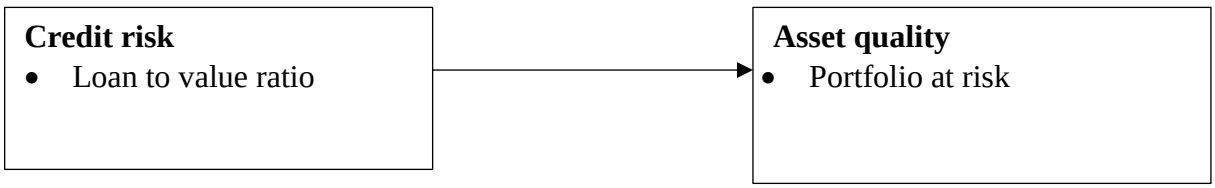

Figure 1: Conceptual Framework

Empirical Review

Muriungi and Maina (2021) carried out a study that sought to examine the effect of credit risk management practices on nonperforming loans in deposit-taking SACCOs in the Upper Eastern Region, Kenya. The study adopted a descriptive survey research design. The study adopted a census survey since the accessible population was small. Primary data was collected through questionnaires. The data collected was analyzed using descriptive and inferential statistics. The results of the study were presented in figures and tables. Pearson correlation analysis was used in this study to determine the relationship between the dependent and the independent variable. The results indicated that credit information sharing, collateralization, credit appraisal guidelines and loan monitoring affected the nonperforming loans. However, the study was limited to SACCOs in the Upper Eastern Region and did not address Tier One deposit-taking SACCOs in Nairobi, leaving a contextual gap that the current study sought to fill.

Wachira (2017) carried out a study that sought to establish how various credit risk management practices affect the performance of loans in commercial banks in Nyeri County in Kenya. A census study was conducted where a population of 86 respondents was targeted. The findings of the study were that all commercial banks had a well-written credit policy which is strictly and consistently followed. In all banks, initial screening is done by a credit officer and approval is done at different levels depending on the amount. The majority of the banks check the post-borrowing activities of the borrower. In conclusion, credit risk management has an effect on loan performance amongst commercial banks. Thus, managers should evaluate more accurately the ability to pay back of a customer, since the better the screening, the better the performance of commercial banks. Nevertheless, the study focused on commercial banks in Nyeri County and not on SACCOs, particularly Tier One deposit-taking SACCOs in Nairobi, creating a sectoral and geographical gap that the current study addresses.

Kimani (2018) did a study on the relationship between credit risk management techniques and the loan performance of SASRA-regulated deposit-taking Saccos in Nairobi County. A descriptive study of Credit risk management techniques used by SACCOS was conducted. The study used both primary and secondary data. Primary data was collected using structured and semi-structured questions and open and closed-ended questions. The data was analyzed by use of summary statistics, including means, standard deviation and percentages to measure the interrelationships between variables. A regression analysis was done to determine the relationship between the identified techniques and loan performance. Results from the study suggest that there was a significant positive correlation between credit risk scoring and loan performance. However, the study concentrated on loan performance without explicitly linking credit risk management practices to asset quality, which is the focus of the current study.

Maina, Kinyariro and Muturi (2016) conducted a study whose aim was to assess the influence of credit risk management practices on loan delinquency in SACCOS in Meru County, Kenya. The study adopted a descriptive research. A questionnaire was used to collect data. Multiple linear

regressions were used in data analysis. The analyzed data were presented in percentages and frequency tables. The study revealed that there exists a strong relationship between credit risk management and loan delinquency. Thus, the study concluded that credit risk management practices significantly influenced loan delinquency in SACCOs in Meru County. The study recommends the adoption of a more stringent policy on credit risk management practices in SACCOs for effective debt recovery. Yet, the study was limited to SACCOs in Meru County and focused on loan delinquency rather than asset quality in Tier One SACCOs in Nairobi, which the current study sought to explore.

Muthoni, Mwangi and Muathe (2020) did a study that aimed at examining the effect of credit management on the loan performance of commercial banks in Kenya. The study used an explanatory research design, and the research philosophy adopted was positivism. Primary data was collected through structured questionnaires, while secondary data was obtained from a review of existing bank loan records in relation to the loan amount advanced. The data collected was analysed using both descriptive and inferential statistics with the help of SPSS version 22. The study found that debt collection policy and lending policy had a significant and positive effect on the loan performance of commercial banks in Kenya. However, client appraisal had no significant effect on the loan performance of commercial banks in Kenya. Nonetheless, the study focused on commercial banks and not SACCOs, and it did not examine asset quality in Tier One deposit-taking SACCOs in Nairobi, which is the gap addressed by the current study.

METHODOLOGY

Research Design

This study employed a descriptive research approach to examine the effects of credit management and asset quality of deposit taking Sacco's in Nairobi, Kenya. The descriptive research design is effective in this case because the research seeks to answer the question of asset quality based on the current status without manipulating the variables (Vaughn & Jacquez, 2020). The tactics used to accomplish the research's objectives are referred to as the research design. According to Cooper and Schindler (2003), a study design serves as a roadmap for selecting the data sources. It is a description of the researcher's process for acquiring data and integrating the results of the investigation. A descriptive research design can be used to discover more about the current status of a phenomenon in relation to outside causes or circumstances.

Population of the study

A population is a group of objects that need to be examined. A population is a particular group of people from which data is sought in statistics. A population is everything that is included in any field of study, also referred to as the researcher's universe (Kothari, 2004). The target population for this study was the tiered one deposit-taking Saccos in Nairobi, Kenya, regulated by SASRA. As of December 2023, there were 16 deposit-taking Sacco societies licensed to undertake deposit-taking Sacco business in Nairobi, Kenya, for the financial year ending December 2023.

Data Collection Instrument

A research instrument is a tool used to collect data on study variables to obtain factual information about a phenomenon, with its choice guided by the research problem, variables, and questions (Mugenda, 2011). This study utilized a data collection sheet to obtain secondary data from relevant sources. Secondary data were carefully scrutinized to ensure suitability and adequacy for the study context (Mugenda, 2011). Quarterly data were extracted from SASRA, securing SACCO funds' annual reports and audited financial statements.

Data Collection Procedure

Before data collection, an introduction letter was obtained from the Department of CES at Jomo Kenyatta University of Science and Technology, and an authorization certificate was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). The study collected secondary data utilizing a data collecting form, which was used to compile information from reports released by the SACCO Societies Regulatory Authority SASRA Securing SACCO funds, Annual Reports and Financial Statements

Data Processing and Analysis

Data analysis involves applying logical techniques to interpret collected information, identify patterns, and summarize key findings (Olive & Abel, 2003). The collected secondary data were verified, coded, and tested for completeness before being analyzed using Microsoft Excel and Stata Version 17. The study applied both descriptive statistics, including frequencies, percentages, means, variances, and standard deviations, and inferential statistics, including Pearson's Product-Moment correlation and panel data analysis. The findings were presented using tables.

Model Specification

The following panel regression model was used to examine the effect of credit risk management on asset quality (non-performing loans):

$$Y=\beta 0+\beta 1\chi 4it+\varepsilon \quad \text{Equation 1}$$

RESULTS

Descriptive Statistics

The study sought to analyze effect of credit risk management on asset quality. The table below shows the analyzed result.

Table 1: Descriptive Statistics

	N	Min	Max	Mean	Std	Variance
Credit Risk	112	0.732792	10.64101	1.190777	0.997672	0.812715
Asset Quality	112	0.0076	0.48	0.069679	0.070836	1.016607

The above table reveals that the credit risk, which was measured as the ratio of loan amount to the appraised value of collateral, had an average value of 1.1908. This suggested that, on average, loans issued were approximately 119.08% of the appraised value of collateral, indicating that some institutions lend amounts exceeded the collateral value. The standard deviation was 0.9678, showed moderate variability, while the coefficient of variation was 0.8127, the lowest among the examined variables. Asset quality, which reflected the proportion of outstanding loans at risk after 30 days, had a mean value of 0.0697, indicating that, on average, approximately 6.97% of total loans remained at risk after 30 days. The standard deviation was 0.0708, suggesting moderate dispersion in asset quality across institutions. The coefficient of variation was 1.0166, highlighting a moderate level of variability in loan quality management.

Correlation Analysis

To explore the effect of credit risk on asset quality, a correlation analysis was conducted. The results of the correlation between credit risk and asset quality are summarized below.

Table 2: Correlation

		Asset quality
	Pearson Correlation	0.3323
	Sig. (2-tailed)	0.0003
Credit risk management	N	112

The Pearson correlation for credit risk management and asset quality was 0.3323, with a p-value of 0.0003, indicating a weak to moderate but significant positive relationship. While weaker than the other variables, the result still suggested that SACCOs with structured risk management practices tended to experience better loan performance. Credit risk management entails assessing borrower default risk, setting lending thresholds, provisioning for doubtful debts, and policy enforcement.

Panel Regression Analysis

Linear regression analysis was conducted to establish the direct effect of credit management indicators on the asset quality of tier 1 deposit-taking Saccos in Nairobi. The study sought to examine the effect of credit risk on the asset quality of deposit-taking Saccos in Nairobi. The study adopted fixed effect model.

Table 3: Regression Fixed Effect of Credit Risk on Asset Quality

Fixed-effects (within) regression	Number of obs	=	112	
Group variable: DT Sacco	Number of groups	=	16	
R-sq:	Obs per group:			
within = 0.1385	min	=	7	
between = 0.5182	avg	=	7	
overall = 0.2801	max	=	7	
	F(1,95)	=	13.96	
corr(u_i, Xb) = 0.3836	Prob > F	=	0.0003	

Asset Quality	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
Credit risk	0.177096	0.047406	3.74	0	0.082983	0.271209
_cons	-2.90449	0.049636	-58.52	0	-3.00303	-2.80595

The strength of the model is shown by its R-squared values. As shown in Table 3 above, the within R-squared of 0.1385 indicates that 13.85% of the variation in asset quality within SACCOs over time can be explained by improvements in credit risk management. The R-squared of 0.5182 shows that 51.82% of the variation across different SACCOs is due to differences in how they manage credit risk. The overall R-squared of 0.2801 means that the model explains 28.01% of the total variation in asset quality, reflecting a moderate but significant explanatory power. The F-statistic of 13.96 with a p-value of 0.0003 confirms the model's overall statistical significance. Additionally, the correlation between the unobserved effects and the explanatory variable (corr(u_i, Xb) = 0.3836) suggested moderate influence from time-invariant characteristics.

The coefficient for credit risk management was 0.17710, with a p-value of less than 0.001, indicating a high level of significance. This means that a one-unit increase in credit risk management efforts results in a 0.177-unit increase in asset quality, assuming all other variables are held constant. The negative and significant constant (−2.90449) implies that in the absence of credit risk management strategies, SACCOs would face a sharp decline in asset quality. The regression model is as shown below:

Asset quality (Y) = **−2.90449** + **00.17710** Credit risk management (X)

Regression Coefficients

The general objective of the study was to examine the effect of credit management on the asset quality of tier I deposit-taking Saccos in Nairobi.

Table 4: Regression Fixed Effect of Credit management on Asset quality

Fixed effects (within) regression				Number of obs =		112
Group variable: DT Saccos				Number of groups =		16
Rsq:				Obs per group:		
within = 0.3513				min =		7
between = 0.5834				avg =		7
overall = 0.5018				max =		7
corr(u_i, Xb) = 0.3462				F(4,95)=		12.45
				Prob > F=		0.000
Asset Quality	**Coef.**	**Std. Err.**	**T**	**P>t**	**[95% Conf.**	**Interval]**
Credit risk	0.124415	0.04278	2.91	0.005	0.03945	0.20938
_cons	-2.15453	0.16201	-13.3	0.000	-2.4763	-1.83276

The within R-squared of 0.3513 shows that 35.13% of the variation in asset quality within SACCOs over time is explained by changes in credit management. The between R-squared of 0.5834 indicates that 58.34% of the variation across SACCOs is attributable to differences in credit management practices. The overall R-squared of 0.5018 reflects strong explanatory power of the model. The F-statistic (12.45, p = 0.000) confirms the statistical significance and robustness of the regression model.

The regression results revealed that credit management significantly and positively influenced asset quality in Tier One deposit-taking SACCOs in Nairobi. The coefficient of 0.1244 indicated that a one-unit improvement in credit management practices led to a 0.1244 increase in asset quality. The constant term (-2.1545) suggested that without effective credit management, asset quality would decline sharply.

Asset quality (Y) **= 2.15453** + **0.12442** Credit risk management (X)

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary of the Study and Key Findings

Panel data Pearson correlation results indicated a significant positive relationship between credit risk management and asset quality of deposit taking Sacco's in Nairobi. Fixed effect linear regression analysis indicated that credit risk management significantly accounts for variance in asset quality of deposit taking Sacco's in Nairobi. Fixed effect multiple regression analysis revealed that when other variables are controlled in the model, an increase in credit risk management would results to a significant increase in asset quality in the same direction.

Conclusion of the Study

The study concluded that credit risk management plays a crucial role in influencing the asset quality of deposit-taking SACCOs in Nairobi. This variable was conceptualized using the ratio of the loan amount to the appraised value of collateral, reflecting the institution's exposure in relation to the security provided. A lower ratio indicates more conservative lending and better protection against default, while a higher ratio suggests elevated risk. Findings revealed that SACCOs with structured credit risk management practices, such as prudent collateral evaluation, risk-based lending, and exposure limits, achieved better asset quality. Effective risk assessment minimizes potential losses by ensuring that loans are adequately secured.

Recommendation of the Study

SACCOs should institutionalize credit risk management by establishing structured lending guidelines, regularly assessing borrower exposure, and conducting thorough collateral evaluations. Risk monitoring tools and internal oversight committees should guide lending decisions. Policy makers should support this by introducing national standards for risk assessment and collateral verification. Regulatory bodies should routinely audit SACCOs' risk management practices, provide training for credit staff, and promote the use of technology for risk tracking. Together, these actions will reduce exposure to loan defaults and enhance the quality of financial assets across SACCOs in Nairobi.

Suggested Area for Further Research

This study examined the effect of credit management on asset quality among deposit-taking SACCOs in Nairobi, focusing on credit risk management. However, credit management is a broader concept that may include additional dimensions such as loan restructuring practices, client follow-up mechanisms, and credit information sharing. Moreover, since this study was geographically limited to SACCOs operating within Nairobi, future studies should consider expanding the scope to include all deposit-taking SACCOs across Kenya to enhance generalizability. Comparative studies across microfinance institutions and commercial banks would also offer cross-sectoral insights into credit management dynamics in the wider financial services industry. Finally, this study did not incorporate any moderating variables. Future research should explore the moderating effect of SACCO size, ownership structure, or regulatory compliance on the relationship between credit management and asset quality.

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