

# Effect of Risk Assessment and Credit Risk in Registered Deposit Taking Saccos in Western Kenya

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**Abstract:** The study was aimed at establishing the effect of risk assessment on credit risk in deposit taking Saccos in Western Kenya. A descriptive research design was used while the sample size was obtained through simple random sampling. The target population comprised 212 respondents from all registered deposit-taking SACCOs in Western Kenya. Primary data was collected using questionnaires, while secondary data was obtained from audited financial statements of the SACCOs using a secondary data collection sheet. Validity was ensured using the pilot study to detect any ambiguities while Cronbach Alpha ( $\alpha$ ) was used to measure reliability. Statistics were generated using both descriptive and inferential methods. Descriptive data included; frequencies and percentages. Diagnostic tests comprised; normality, autocorrelation, multicollinearity, and heteroscedasticity. Inferential statistics contained correlation analysis, multiple regression analysis, and ANOVA. Risk assessment was found to have a significant relationship with credit risk in deposit taking Saccos in Western Kenya. It was recommended that SACCOs should have proper risk assessment procedures to help them identify and handle risks.

**Keywords:** Risk Assessment, Saccos, Credit Risk, Western Kenya

## 1. Introduction

The Committee of Sponsored Organizations (COSO) defines risks as the potential for an event to occur that would negatively impact the accomplishment of some organizational objectives in the internal control system framework. An interactive process called risk assessment discovers and assesses potential threats to accomplishing organizational goals. Risk assessment for financial reporting purposes means identifying, analyzing and managing the customer's risks associated with the preparation of a fair presentation of financial statements following generally accepted accounting principles [6].

Recent financial scandals involving publicly traded corporations have resulted in significant losses for many parties involved. In America, the Enron scandal was one of the major financial scandals due to weak internal controls where the auditors had a conflict of interest. Due to public concern about the possible collapse of large companies, the Sarbanes-Oxley Act (SOX) was enacted by the United States Congress in July 2002 [8].

The global financial crisis negatively impacted many countries; Spain was no exception, and its severe economic downturn was considered the greatest crisis the country had ever faced. Due to a rise in nonperforming loans, the number of savings banks dropped from 45 in 2008 to 7 in 2014. The crisis was not just attributed to the global financial crisis but also internal imbalances in the years before the crisis, which caused the issue to worsen. Managerial failures, especially when the bank's internal controls are vulnerable to manipulation, were cited as the cause of the crisis [1].

### 1.1 Statement of the problem

Organizational internal control systems are primarily used to safeguard assets, reduce risks, and identify and prevent malpractice and fraud. Despite the implementation of internal controls, SACCOs are still highly exposed to credit risk with non-performing loans (NPLs) increasing from 5.2% in 2016 to 9.1% in June 2020 [12]. Loans are the most critical earning assets of deposit-taking SACCOs and the quality of loan portfolios must be jealously guarded. The overall amount of unremitted money as of September 2020 was an astounding Kshs 5.04 billion, up from Kshs 3.87 billion as of September 2019, and the biggest percentage of these funds, Kshs 4.31 billion, were owed to deposit-taking SACCOs for loan repayment [10]. Credit risk has led SACCOs to have liquidity problems, leading to some members withdrawing from the SACCOs and the eventual deregistration of some SACCOs. Studies concerning internal control systems and credit risk have mainly focused on commercial banks, yet credit risk is a major concern to many SACCOs in Kenya. Therefore, the need to establish the effect of internal control systems on credit risk in registered deposit-taking SACCOs in Western Kenya.

### 1.2 General Objective

To determine the effect of risk assessment on credit risk in deposit taking Saccos in Western Kenya.

## 2.0 Literature Review

### 2.1 Risk Assessment and Credit Risk

A study by Buro (2019) sought to establish performance of loan portfolios and credit risk management in deposit-taking savings and credit co-operative societies in Garissa County, Kenya. A descriptive research design was employed. The target population covered six deposit-taking SACCOs. Fifty-three managers from the deposit-taking SACCOs were chosen purposively as the sample size. Primary data was collected using questionnaires. Descriptive statistics used for data analysis yielded tables, charts, and a mean

and standard deviation which aided in the interpretation of data. Multiple linear regression was also used. The findings revealed that risk identification and analysis and credit risk management have a significant relationship in SACCOs.

Bosire (2017) studied an assessment of the effects of credit risk management procedures on the financial performance of microfinance institutions in Kisii County. The study used a descriptive research design. The target population comprised 45 respondents from all nine registered microfinance institutions in Kisii County. The Census method was used while primary data was obtained from questionnaires with open-ended and closed-ended questions. Data was presented using tables and charts and analyzed using descriptive statistics. The link between the dependent and independent variables was determined using regression analysis. The results showed that the financial results of microfinance organizations are significantly impacted by risk identification, risk analysis, and monitoring.

Mogga, Mwambia and Kithinji (2018) studied the influence of credit risk management on the financial performance of commercial banks in Juba City, South Sudan. The study's target population comprised 80 respondents who were the bank employees in the bank's credit department. Data analysis was done through SPSS and computed using descriptive statistics. The link between variables was shown using linear regression. The findings established that risk identification and risk analysis were not significant factors affecting the financial performance of commercial banks.

### 3.0 METHODOLOGY

#### 3.1 Research Philosophy

The study was guided by pragmatism which has been identified as the appropriate paradigm for conducting mixed-methods research.

#### 3.2 Research Design

A descriptive research approach was employed because it facilitated the identification of characteristic variables of interest.

#### 3.3 Target Population

The target population comprised 212 respondents from all registered deposit-taking SACCOs in Western Kenya, which are 7 in total from the four counties that make up the western region; Kakamega, Bungoma, Busia and Vihiga counties.

#### 3.4 Research Instruments

Questionnaires were utilized for primary data collection while secondary data was acquired from the SACCOs financial reports in 2021.

#### 3.5 Data Processing, Analysis and Presentation

Descriptive statistics were presented using frequencies and percentages. Multiple regression and correlation analysis constituted the inferential statistics used. Information was displayed using tables. The regression model is as shown below;

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

Where;

Y - Credit Risk

a - Regression constant

$X_1$  - Risk assessment

$\beta_1$  = Measure of sensitivity of variable x to changes in y

e = estimated error of the regression model

### 4.0 RESEARCH FINDINGS AND DISCUSSIONS

#### 4.1 Response Rate

A total of 141 questionnaires were distributed to respondents in various SACCOs, while 118 were returned. The returned questionnaires represented a response rate of 84% of all questionnaires issued.

#### 4.2 Reliability

The Cronbach Alpha ( $\alpha$ ) was used to measure reliability since it was the most efficient when using the Likert scale. A questionnaire was considered reliable if  $\alpha$  was greater than 0.7 [11]. Risk assessment was found to be above 0.7 and therefore deemed appropriate.

**Table 1: Reliability**

Variable	Number of items	Cronbach Alpha	Conclusion
Risk assessment	10	0.865	Reliable

#### 4.3 Validity

Construct validity was evaluated using factor analysis using the Kaiser – Mayer – Olkin and Bartlett's test. Values above 0.5 were deemed appropriate for factor analysis. The p-value for risk assessment was less than 0.05, indicating that the pilot research data was sufficient for factor analysis.

**Table 2: Validity**

	No of Items	KMO	$\chi^2$	Bartlett's test	
				Df	P-value
Risk assessment	10	0.511	104.692	20	0.000

#### 4.4 Descriptive Statistics

Regarding the question as to whether measures are in place to identify pertinent issues relating to credit risk, 44.9% of respondents who were the majority, strongly agreed. Majority of the SACCOs have put in place checks which help them evaluate credit-related issues. These measures help to identify major issues leading to high credit risk levels and how to avoid them. A rise in financial risk necessitates SACCOs to train their employees in risk management to minimize risks.

On the question on whether frequent risk analysis is done to determine priority areas in the SACCOs. The feedback established that 74.6% of the respondents were in agreement, 15.2% remained neutral, while 12 respondents (10.2%) disagreed or strongly disagreed. These findings deduce that most SACCOs actively assess their operations to determine risk causes. Proper analysis identifies significant priority areas that help the SACCOs deal with specific issues and remedy the problems to meet their objectives and targets. On the contrary, SACCOs that lack effective and frequent risk analysis make it difficult to identify areas they need to improve and how to reduce the number of non-performing loans.

Regarding the question on credit mitigation techniques, the outcomes show that SACCOs have controls and preventive procedures to address credit concerns. SACCOs have regularly reviewed various credit policies and procedures to help prevent credit risk and fraud issues. Credit appraisal techniques are also in place to aid in proper evaluation of loaning. However, despite most SACCOs having credit mitigation techniques, some SACCOs still lack them. This leads to situations where SACCOs are at risk of fraudsters and malpractices which may go unnoticed.

Concerning risk mitigation techniques, respondents who strongly agreed that risk mitigation techniques were frequently evaluated were 26.3%, 31.4% agreed, 32.2% were impartial, though 10.1% disagreed. According to the data, the majority of SACCOs constantly review and modify their risk mitigation strategies. This ensures that the SACCOs are ready for any new threats from fraudsters. It also ensures better risk mitigation techniques are implemented in the future. Risk mitigation techniques reduce the occurrence of risk-related activities and open more opportunities.

The study aimed to determine the respondents' opinions regarding creating credit risk assessment reports. The majority (64.4%) of the participants were in agreement, 17.8% disagreed that credit risk assessment reports were frequently prepared and acted upon, while 21 remained neutral. Most of the participants were in agreement with the assertion that credit risk assessment reports are frequently generated and used. This practice is beneficial since any variances are detected early enough and the situation can be salvaged before it worsens. It also helps SACCOs gauge whether their performance is improving or declining and focuses on achieving the set objectives.

Respondents were asked whether identifying pertinent issues relating to credit risk enhances credit risk reduction. 34.7% of all respondents strongly agreed, 28% agreed and 22.9% were neutral. Some of the respondents (14.4%) either disagreed. The majority of respondents indicated that the results were positive, indicating that important credit risk-related concerns are addressed immediately, reducing credit risk. Risks need to be identified through various means such as performance evaluations and customer feedback. These pertinent issues should be treated as priority areas and stern actions taken to ensure they do not recur.

From Table 3, most respondents agree that analysis of risk-prone areas supports credit risk reduction. 59.3% of the respondents either agreed or strongly agreed, 28.8% were uncertain while 11.9% disagreed. Risk assessment procedures are enhanced in these SACCOs to identify risk-prone areas. The risk-prone areas are closely monitored to ensure that risks are minimized. When the SACCO identifies its risk-prone areas, it can put in place measures that ensure that credit risks are not elevated. Risk-prone areas such as investments should be evaluated to ensure that the returns are worth the risks. Issuance of loans to members should also be closely monitored to avoid cases of defaulters.

In Table 3, 30.5% strongly agreed, 32.5% agreed that effective implementation of credit mitigation techniques reduces default risk, 24.6% were unsure whereas 12.7% disagreed. Majority of SACCOs have implemented effective credit mitigation techniques. Credit mitigation techniques employed by SACCOs include credit policies and procedures, credit appraisals and risk management systems. Employees need to be trained on risk management practices to reduce default risks. SACCOs could also employ the services of auditors who advise on ways of mitigating the risks. Credit mitigation will positively impact on the performance of SACCO.

Findings in Table 3 indicate that out of 118 respondents, 25 (21.2%) strongly agreed, 49 (41.5%) agreed, 23 participants were neutral whereas 17.8% did not agree that frequent evaluation of credit mitigation techniques enhances reduction of default risk. A greater percentage of SACCOs evaluate credit mitigation techniques to ensure they are up to date. Fraudsters always devise new methods of committing fraud, so SACCOs must also upgrade their mitigation techniques to curb these malpractices.

The results from the study concerning frequent preparation of credit risk reports reveal that out of 118 respondents, 66.1% of the respondents agreed, 14.4% remained unsure while 19.5% disagreed. Most SACCOs in Western Kenya frequently prepare credit risk reports and information obtained from the reports is acted upon immediately. Feedback from the reports is vital in financial decision-making. Financial risks can be reduced by taking corrective measures based on the reports. These reports ought to be prepared regularly to deal promptly with emerging issues.

**Table 3: Descriptive Statistics**

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. Measures Are in Place to Identify Pertinent Issues Relating to Credit Risk	53	45	7	11	2
2. Effective Analysis of Risk Is Frequently Done to Establish Priority Areas	36	52	18	8	4
3. There Are Effective Credit Mitigation Techniques in Your SACCO	44	43	15	11	5
4. Risk Mitigation Techniques Are Frequently Evaluated for Improvement	31	37	38	9	3
5. Credit Risk Assessment Reports Are Frequently Prepared and Acted Upon	26	50	21	17	4
6. Identification of Pertinent Issues Enhances Credit Risk Reduction	41	33	27	16	1
7. Analysis of Risk Prone Areas Supports Reduction of Credit Risk	35	35	34	10	4
8. Effective Implementation of Credit Mitigation Techniques Reduces Default Risk	36	38	29	12	3
9. Frequent Evaluation of Credit Mitigation Techniques Enhances Reduction of Default Risk	25	49	23	18	3
10. Frequent Preparation of Credit Risk Reports and Prompt Action Supports Reduction of Default Risks	42	36	17	15	8

#### 4.5 Diagnostic Tests

Statistical assumptions tests were done for linear regression to determine normality, autocorrelation, multicollinearity and heteroscedasticity.

##### 4.5.1 Normality

Normality test was performed to determine the statistical methods to be used to analyze data. It was diagnosed using the Shapiro-Wilk test which examines if the elements follow a normal distribution in the population. Statistical ranges of the Shapiro-Wilk test range from 0 to 1 with 1 being a perfect match, while the p-values of more than 0.05 depict normality [7].

**Table 4: Normality**

Variable	Shapiro-Wilk		
	W Statistic	df	Sig.
Risk assessment	0.786	118	0.061

The p-values of risk assessment was above 0.05 hence the null hypothesis was rejected which depicts that the data is normally distributed.

##### 4.5.2 Autocorrelation

The Durbin-Watson test examined autocorrelation, the test statistic ranged from 0 to 4. If the value is less than 1.5 or greater than 2.5, correlation is present, but if it is between 1.5 to 2.5, there is no auto-correlation problem [3].

**Table 5: Model Auto Correlation**

Durbin-Watson
1.91

The value of 1.91 in Table 5 shows no auto-correlation, hence the independence of the residuals.

##### 4.5.3 Multicollinearity

Multicollinearity describes a perfect or linear relationship between two or more regression variables [2]. The VIF measures how strongly two independent variables are related. VIF statistical range is from 0 to 10. VIFs above ten and tolerance below 0.1 depict multicollinearity severity.

**Table 6: Multicollinearity**

	Tolerance	VIF
Risk assessment	.839	1.191

Results from Table 6 show that the VIF values were less than ten, signifying that all the original model variables were kept. The tolerance values were above 0.1, depicting that there was no multicollinearity.

#### 4.5.4 Heteroscedasticity

Heteroscedasticity was tested using the Breusch Pagan test to determine if the regression discrepancy errors vary with the autonomous elements' values. If the probability value is above 0.05, data is considered homoscedastic. Outcomes for testing heteroscedasticity are shown in Table 4.43.

**Table 7: Breusch Pagan Test**

Model	chi2(1)	Prob > chi2
BP test	2.21	0.1326

From Table 7, the probability value is 0.1326 which is more than 0.05 hence we will accept the alternative hypothesis.

#### 4.6 Inferential Statistics

Inferential statistics were employed to determine how the variables were associated.

##### 4.6.1 Model Summary

Multiple regression analysis was used to determine the significance of the correlation between the independent and dependent variables. A strong correlation between variables is shown by an R-value greater than 0.4.

**Table 8: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517a	.267	.213	.143

a. Predictors: (Constant)Risk assessment

b. Dependent Variable: Credit risk

Table 8 shows that internal control systems variables explain 61.2% of the variation in credit risk in deposit-taking SACCOs in Western Kenya, where R= 0.783, R<sup>2</sup>= 0.612, and adjusted R square is 0.583. Thirty-eight-point eight percent (38.8%) of the change in the level of credit risk in SACCOs in Western Kenya is influenced by other factors not included in this study.

##### 4.6.2 ANOVA

Analysis of Variance is used when determining if a model is reliable enough to predict an outcome. The study's significance level was set at 5%, and to be significant, the probability value had to be lower than 0.05. A summary of these findings is provided in Table 4.46.

**Table 9: ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	2.989	4	0.747	3.132	0.007 <sup>b</sup>
Residual	26.951	113	0.2385		
Total	29.940	117			

a. Dependent Variable: Credit risk

b. Predictors: (Constant), Monitoring, Risk assessment, Control activities, Control environment

From Table 9, F ratio is 3.132, greater than the critical value of 2.46, indicating a strong association between internal control systems and credit risk in Western Kenya's deposit-taking SACCOs. The F-statistic had a p-value of 0.007 which was less than 0.05, indicating significance and model fitness.

##### 4.6.3 Multiple Regression Coefficients

Multiple regression was used to ascertain the relation between the variables. The regression coefficients were calculated to demonstrate by how much the mean of the dependent variable shifts for each one-unit shift in the independent variable. The regression results are shown in **Table 10: Multiple Regression**

Model	Unstandardized Coefficients		T	Sig.
	B	Std. Error		
(Constant)	5.110	1.321	3.867	.000
Risk assessment	-0.225	0.089	-2.531	.007

The generated regression results are as shown in Table 10 hence equation 1 shown:

$$Y = 5.11 - 0.225X_3 - \dots \dots \dots (1)$$

The beta value of -0.225 shows that 22.5% of credit risk in Saccos in Western Kenya is affected by risk assessment. The regression constant indicates a significant relationship, as revealed by the probability value of 0.000, which was less than 0.05 at 5% significance level. Risk assessment was statistically significant with a  $\beta$  value of -0.225 and a p-value of 0.007.

#### 4.7 Discussion of Findings

The null hypothesis stated no significant relationship between risk assessment and credit risk. The  $\beta$ , t-statistic and p-values were -0.225, -2.531 and 0.007 respectively. The p-value was significant at a 5% significance level since it was less than 0.05. A unit growth in risk assessment resulted in a decrease in credit risk by 22.5%, as indicated by the  $\beta$  value of -0.225.

The test statistic of -2.531 was smaller than the tabulated value of 1.980, revealing a significant relationship between risk assessment and credit risk. The null hypothesis was rejected since it was established that risk assessment had a significant negative effect on credit risk in SACCOs in Western Kenya. The descriptive and inferential statistics concurred that risk mitigation strategies were in place, lowering the amount of credit risk, with the majority of respondents agreeing.

#### 4.8 Conclusion

##### 4.8.1 Effect of Risk Assessment on Credit Risk

The estimated values of  $\beta$  for regression, t-statistic and p-values were -0.225, -2.531 and 0.007, respectively. The t-statistic was more than the computed value of -1.980. Most SACCO respondents agreed that risk assessment was rigorous and impacted credit risk. This suggests that when risk assessment is efficiently and effectively done, credit risk will reduce greatly and the performance of the SACCO will be boosted. Risk assessment procedures in the SACCOs include; effective analysis of risk to determine priority areas, frequent preparation of credit risk assessment reports, regular evaluation of effective risk mitigation practices. These findings concluded that risk assessment significantly affected credit risk in deposit-taking SACCOs in Western Kenya.

#### 4.9 Recommendations

Concerning risk assessment and credit risk, some SACCOs did not have measures to identify pertinent issues relating to credit risk. In line with the findings, SACCOs should have proper risk assessment procedures to help them identify and handle risks. The organization should set up risk management that will identify, reduce and eliminate risks in the SACCOs. Risk mitigation can be done by the risk management teams training the other employees on identifying risks. Risk assessment ensures that risks are dealt with on time before they worsen. Measures should be implemented to detect major credit risk issues and lower the frequency of defaulted loans.

From the descriptive statistics, it is also evident that some SACCOs do not have effective credit mitigation techniques to avoid fraud and misappropriation of funds. It was therefore recommended that authorizations of transactions and approvals be done with the approval of the relevant parties. Cash transactions should be eliminated and all income should be categorized onto different accounts for transparency and accountability purposes. Furthermore, results from the inferential statistics show that SACCOs must have control procedures such as security measures and physical and computer controls to check for thieves and be able to track them down.

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