Factors Influencing Credit Risk For Small And Medium Enterprise Loans: A Survey Of Banks In Kitale Town, Kenya

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Abstract: There has been an increased concern over high credit risk for small and medium enterprise loan in financial institutions. High interest rates, credit rating, recovery mechanisms and business experience play an important role in influencing credit risk for small and medium enterprise loans. The main objective of this study was to investigate factors influencing credit risk for small and medium enterprise loans a survey of banks in Kitale Town, Kenya. The specific objectives of the study were: To establish the influence of interest rates on credit risk of small and medium enterprise loans in banks, bto find out the influence of credit rating in credit risk of small and medium enterprise loans in banks, to establish the influence of recovery mechanism in credit risk of small and medium enterprise loans in banks, and to assess the influence of business experience in credit risk of small and medium enterprise loans in banks. Credit management theory, trade-off theory, modern portfolio theory were used to underpin the study. Explanatory research design was used in this study. The study targeted 331 employees from 11 Commercial Banks in Kitale. The study used stratified sampling technique. Interest rates, credit rating, recovery mechanism and business experience were taken as the independent variables while credit risk was the dependent variable. Pilot study was used to test the validity and reliability of the research instrument. Interest rates showed a positive and significant effect on credit risk ($\beta= 0.153$, $\rho<0.05$). Also credit rating showed a positive and significant effect on credit risk ($\beta= 0.256$, $\rho<0.05$). Further, recovery mechanism showed a positive and significant effect on credit risk ($\beta= 0.243$, $\rho<0.05$). While business experience showed a positive and significant effect on credit risk ($\beta= 0.233$, $\rho<0.05$). In conclusion, the study has established that whenever there are high short-term interest rates, there is an increase in credit risk. In addition, interest rate shifts are heterogeneous across the firm and have different implications for leverage and default in the short run than in the longer run. Hence the study recommends for need for a comprehensive risk management process that ensures the timely identification, measurement, monitoring, and control of risk.

Keywords: Business Experience, Credit Risk, Credit Rating, Interest Rate & Recovery Mechanism.

1. INTRODUCTION

Small business investments and loans (small credit) is nothing new. It first emerged as a means of empowering the poor in the third world countries such as India and Bangladesh. This has enabled millions of poor to gain access to capital and loans enabling them to lift themselves out of poverty (Zicchino, 2003). Credit is a transaction between two parties in which one, acting as creditor or lender, supplies the other, the debtor or borrower, with money, goods, services, or securities in return for the promise of future payment. As a financial transaction, credit is the purchase of the present use of money with the promise to pay in the future according to a pre- arranged schedule and at a specified cost defined by the interest rate. In modern economies, the use of credit is pervasive and the volume enormous. Electronic transfer technology moves vast amounts of capital instantaneously around the globe irrespective of geopolitical demarcations (Zicchino, 2003).

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Increase in credit risk for financial institution on small and medium loans has become common. According to Kiiru (2007), a research on loan default showed that 17 per cent were able to repay their loans from their business returns. The majority, 62 per cent of borrowers, repaid their loans under duress – repayment due to excessive peer pressure. Another 17 per cent had to sell their pre-existing assets, while four per cent had their property confiscated by financiers. Of the 260 Small finance institutions that reported their "Portfolio at Risk over 30 days ratio" to the MIX (a World Bank clearing house for small finance information) for 2004, the average rate of Portfolio at Risk was 4.76%, with some Small finance institutions reporting up to 63.65% of their portfolio delinquent.

Despite the application of a number of remedial measures (supplying fresh loans, loan rescheduling, imposition of penalty interest rates, denial of additional credit to repeat defaulters, management take-over of problem projects, and legal actions) in managing the credit risk, credit risk problems continued to rein the credit markets in the country. Loan default occurs when borrowers are not able and/or willing to repay loans. There are borrowers who are willing but not able to repay loans and there are borrowers who are able but not willing to repay loans. Loan default occurs in either case (Mann, 2009).

It is against this background that the study seeks to establish factors influencing management of credit risk for small and medium enterprise loans and come up with a way where by the different aspects of credit risk can be used in managing credit risk through a standard appraisal. The study is base on a survey of banks in Kitale Town. With over 70% of its clientele having small loans therefore management of small credits is a key determinant of the success of the banks (AMFI, 2013).

Study Hypothesis:

The study tested the following hypotheses:

H_{01}: Interest rate has no significant effect on credit risk of small and medium enterprise loans.

H_{02}: Business experience has no significant effect on credit risk of small and medium enterprise loans.

H_{03}: Credit rating has no significant effect on credit risk of small and medium enterprise loans.

H_{04}: Recovery mechanism has no significant effect on credit risk of small and medium enterprise loans.

2. LITERATURE REVIEW

Theoretical Framework:

A theory is a reasoned statement or group of statements, which are supported by evidence meant to explain some phenomena. A theory is a systematic explanation of the relationship among phenomena. Theories provide a generalized explanation to an occurrence. Therefore a researcher should be conversant with those theories applicable to his area of research (Kombo and Tromp, 2010, Smyth, 2012).

Credit Management Theory:

The study is guided by credit management theory propounded by Woolcock, (2000). He asserts that credit market are shaped by lenders strategies for screening potential borrowers and for addressing opportunistic behavior encouraged by the inter-temporal nature of loan contracts. Their transaction involves heterogeneous goods since the qualities of credit contracts vary due to difference in the credit worthiness of borrowers. The transaction are inter temporal since credit is exchanged for a promise to repay later. It is influenced by the level of risks and profitability of projects. Lenders tend to raise the price of the credit to a level where they expect returns to be maximized. This often excludes small, risky and costly borrowers. The consumption of credit tends to be inversely related not only to interest rates but also to collateral requirements. This theory is applicable in the study since financial institutions need to have in place mechanisms of monitoring and managing credit.

Modern Portfolio Theory:

The study was propounded by Markowitz and formally defined by Fabozzi *at el* (2002). The theory implies that a diversified loan portfolio has lower total credit risk than a more focused one. Portfolio theory bases this assumption on the fact that credit risk includes systematic and unsystematic risk. Modern portfolio theory argues that shareholders can

management risk associated to credit to eliminate firm-specific (idiosyncratic) risks. Stulz (1996), however, argues that risk management creates value by reducing or eliminating the costs and losses of financial distress. Froot, Scharfstein and Stein (1993) advocate that credit risk management adds value if it helps the firm avoid unfavorable outcomes, or states of the world, that prevent it because of insufficient internal funds from investing in attractive, positive net present value opportunities. This theory suggests that credit risk management is more valuable for highly leveraged companies that also have volatile earnings, and limited cash reserves. This theory is applicable in the study since financial institutions need to have in place mechanisms of monitoring and managing credit.
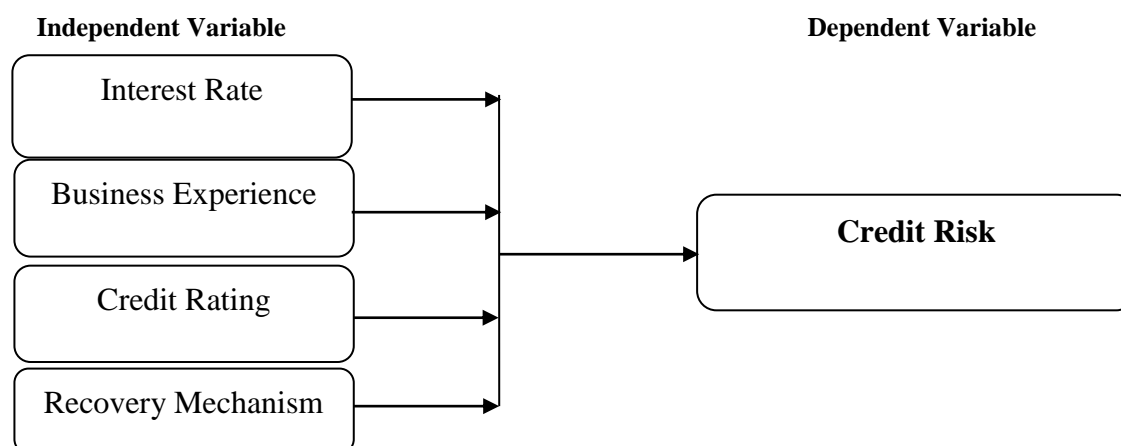
Conceptual Framework:

Independent Variable

Dependent Variable

Figure.2.1: Conceptual Framework

Interest rates and Credit Risk:

According to a study done by Adelson, (2003) each financial transaction that a bank completes may affect its interest rate risk profile which ends up influencing its credit management capacity. Banks differ, however, in the level and degree of interest rate risk they are willing to assume. Some banks seek to minimize their interest rate risk exposure in order to minimize credit risk. Such banks generally do not deliberately take positions to benefit from a particular movement in interest rates.

A bank should also consider how interest rate risk may act jointly with other risks facing the bank hence mitigate its credit risk. For example, in arising rate environment, loan customers may not be able to meet interest payments because of the increase in the sizeof the payment or a reduction in earnings. The result will be a higher level of problem loans. An increase in interest rates exposes a bank with a significant concentration of adjustable rate loans to credit risk. For a bank that is predominately funded with short-term liabilities, a rise in rates may decrease net interest income at the same time credit quality problems are on the increase (Forest and Wong, 2004).

Business Experience and Credit Risk:

More experienced business personnel provide a cornerstone of safe and sound banking is the design and implementation of written policies and procedures related to identifying, measuring, monitoring and controlling credit risk. Credit policies establish the framework for lending and guide the credit-granting activities of the bank. Credit policies should address such topics as target markets, portfolio-mix, price and non-price terms, the structure of limits, approval authorities, exception procesing/reporting, etc. Such policies should be clearly defined, consistent with prudent banking practices and relevant regulatory requirements, and adequate for the nature and Credit risk management complexity of the bank's activities. The policies should be designed and implemented within the context of internal and external factors such as the bank's market position, trade area, staff capabilities and technology (Abrams, 2007).

Credit Rating and Credit Risk:

Zelmer (2007) argues that credit ratings published by the major rating agencies offer important benefits to market participants and public institutions in ensuring effective credit risk management. They provide a commonly recognized source of independent opinions on creditworthiness, which can serve as a useful starting point for assessing the credit

quality of counterparties and their financial instruments. The use of credit ratings is also cost-effective, because rating agencies benefit from economies of scale in assessing credit risk. Indeed, agencies rate almost all of the counterparties used in the treasury activities of the Bank and the government. But credit ratings are not flawless indicators of credit risk management. Rating agencies have been periodically criticized for, among other things, overreliance on historical information and for being slow to react to new information (Titman, 2007).

Recovery Mechanism and Credit Risk:

Fishman, (2007) argues that evidence from many countries in recent years suggests that collateral values and recovery rates on corporate defaults can be volatile and, moreover, that they tend to go down just when the number of defaults goes up in economic downturns thus significantly affecting the level of credit risk management. This link between recovery rates and default rates has traditionally been neglected by credit risk models, as most of them focused on default risk and adopted static loss assumptions, treating the recovery rate either as a constant parameter or as a stochastic variable independent from the probability of default. This traditional focus on default analysis has been partly reversed by the recent significant increase in the number of studies dedicated to the subject of recovery rate estimation and the relationship between default and recovery rates.

According to Halling, (2011) business knowledge should give the credit risk strategy of any bank and should provide continuity in approach thus effective credit risk management. Therefore, the strategy will need to take into account the cyclical aspects of any economy and the resulting shifts in the composition and quality of the overall credit portfolio. Although the strategy should be periodically assessed and amended, it should be viable in the long-run and through various economic cycles.

3. RESEARCH METHODOLOGY

Explanatory research design was used in this study. According to Cooper and Schindler, (2000) explanatory research focuses on why questions. In answering the `why' questions, the study is involved in developing causal explanations. Causal explanations argue that phenomenon Y (credit risk) is affected by variable X (firm performance). This design was chosen because it applied closely to the research objectives of this study and will be practical in testing the study hypothesis.

The study targeted 331 employees from 11 Commercial Banks in Kitale (CBK, 2013). Target population above was chosen since it was accessible to information required by the researcher and they are directly affected by the organizations credit operations. From the target population of 331, Yamane (1973) sample size formula was used to select a sample size of 181 employees as shown below:

$$n = {N}/{1 + N_{e^2}}$$

Where:

n = Sample size

N = Population size

e = the error of Sampling

This study allowed the error of sampling on 0.05. Thus, sample size was as follows:

n = 331/[1 + 331(0.05)^2]

= 181

The study used stratified sampling technique to select the employees where a respondent was picked from. Therefore, employees were stratified into six strata's where the sample size was distributed according to Neyman allocation formula (1934).

The researcher used questionnaires as a tool for data collection and the questionnaires consisted of only closed ended questionnaires because they are easier to administer and analyze since each item is followed by an alternative answer. Content validity of the instrument was determined through piloting, where the responses of the subjects will be checked against the research objectives. A Crobanch's alpha value of α>0.7 was considered reliable for the study.

The study used quantitative method to analyze data. The information was codified and entered into a spread sheet and analyzed using SPSS (statistical package for social sciences). Quantitative data was analyzed using descriptive statistical method, the statistical tools such measures of central tendency such as mean, mode and standard deviation will be used. Inferential statistic such as ANOVA, Pearson correlation coefficients r and multiple regression models was also used. Multiple regression analysis was applied to analyze the relationship between a single dependent variable and several independent variables (Hair *et al.*, 2005).

4. FINDINGS AND DISCUSSIONS

Response Rate:

Out of the targeted 181 respondents, 125 completed the questionnaire. This gave a response rate of 69% as presented in Table 4.1. The response rate is considered adequate given the recommendations by Saunders, Lewis and Thornhill (2007) who suggest 30-40%   response, Sekeran (2003) who document 30%, and Wilson, Pollack and Rooney (2003) recommends 50%.

Table.4.1: Response Rate

Category	Target Population	Sample Size	Realised	%
Contract sales staff	218	119	85	71
Credit Staff	19	10	6	70
Tellers	47	26	21	85
Customer care staff	27	15	7	60
Departmental heads	20	11	6	59
Total	**331**	**181**	**125**	**Overall=69**

Demographic Information:

Demographic information shows the characteristics of the elements in the sample size: it helps the researcher understand the general view of the respondents based on the research objectives. As such the researcher sought to establish the general information of the respondents, which forms the basis under which the interpretations are made. The study is carried out to assess credit risk management on organizational performance among banks in Kitale. The respondents were required to provide information about their gender, age, education and experience in banking. The target population was; credit officers, contracted sales staff, customer care staff, tellers and business departmental officers in banks.

Table.4.2: Demographic Characteristics of the Respondents

	Category	Frequency	Percentage
Gender	Male	69	55.2
	Female	56	44.8
	Total	125	100
Age	Under 25 years	21	16.8
	26-35 years	74	59.2
	36-45 years	18	14.4
	46 years and above	12	9.6
	Total	125	100
Education	Masters	21	16.8
	Undergraduate	68	54.4
	Advanced Diploma	24	19.2
	Diploma	6	4.8
	Certificate	2	1.6
	Other	4	3.2
	Total	125	100.0
Experience	Less than 2	17	13.6
	3-4 years	50	40
	5-6 years	30	24
	Over 7 years	28	22.4
	Total	125	100.0

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Demographic results revealed that majority 69 (55.2%) were male and 56 ((44.8%) were male; this shows that there was gender balance among the respondents..The Study findings revealed that most 74(59.2%) of the respondents were aged between 26 – 35 years followed   by 21 (16.8%) were under 25 years, 18(14.4%) were aged between 35- 45 years and only 12 (9.6%) were aged 46 years and above. Hence, most of banks have employed young employees.

For the highest level of education of respondents results indicated that most 68(54.4%) of the respondents had undergraduate degree as their highest level of education, followed by 24(19.2%) of respondents with Advanced diploma 29(20.1%), Masters 21(16.8%) Diploma 6(4.8%), Certificate 2(1.6%) and others 4(3.2%) respectively. Results revealed that most of the respondents 50(40%) had worked in the banks between 3-4 years whereas 30(24%) had worked for between 5-6 years, 28 (22.4%) for over 7 years and those who had worked for less than 2 years were 17(13.6%). Thus, most of the respondents were well experienced with operations of the bank which was important in responding to the study questionnaire. The demographic characteristics of the

respondents are summarized in Table 4.2.

Recovery Mechanism:

Findings on recovery mechanism were illustrated in Table 4.3 where it was confirmed that Board of directors' approve and periodically (at least annually) review the credit risk policies of the bank (mean=3.63), Credit risk strategy reflects the institutions' tolerance for risk and the level of profitability (mean=3.41). Moreover, it was established that institutions ensure that the risk of products and activities new to them are subject to adequate risk management procedures and controls before being introduced or undertaken, and approved in advance by the board of directors or its appropriate committee (mean = 4.12, SD = 0.021). However, findings revealed that respondents were neutral on whether senior management implements the credit risk strategy approved by the board of directors for developing policies and procedures for identifying, measuring, monitoring and controlling credit risk(mean = 3.33).They also neither agree nor disagreed on whether credit risk policies and procedures addresses credit risk in all of the institutions 'activities and at both the individual credit and portfolio level meaning they were neutral (mean = 3.18) . The lowest mean, which was less neutral, showed that institutions should identify and manage credit risk inherent in all products and activities (Mean = 3.17).

Table.4.3: Recovery Mechanism

Code	Items	Mean	Std. Dev
RM1	Board approve periodically credit risk policies	3.63	1.105
RM2	Credit risk strategy reflects the banks tolerance for risk	3.41	1.223
RM3	Senior management implements the credit risk strategy	3.33	1.186
RM4	Credit risk policies and procedures addresses credit risk	3.18	1.203
RM5	Bank ensure that the risks are subject to adequate controls	4.12	0.021
RM6	Bank identifies and manage credit risk inherent in all products	3.17	1.148
	Mean	**3.23**	**0.732**

Credit Rating:

Further, credit rating was inquired from the respondents. From the study results, it was established that credit ratings are good indicators of credit risk (mean, 3.55) and debtor's ability to pay back the debt and the likelihood of default is assessed (mean = 3.49). As such, the institutions operate within sound, well-defined credit-granting criteria (mean = 3.65).However, there is doubt whether the institution has in place a system for monitoring the overall composition and quality of the credit portfolio (mean = 3.41). The results are summarized in Table 4.4.

Table 4.4: Credit Rating

		Mean	Std. Dev
CR1	Credit ratings are good indicators of credit risk	3.55	1.206
CR2	We assess debtor's ability to pay back	3.49	1.144
CR3	We calculate creditworthiness of customers	3.43	1.165
CR4	We operate within sound credit-granting criteria	3.65	0.233
CR5	Composition and quality of credit portfolio is monitored	3.41	1.052
	Credit Rating	3.3175	0.796

Interests Rate:

Table 4.5 illustrates the results on interest rate. From the table, it is evident that high short-term interest rates increase credit risk, at least in the short run and certainly for the most indebted borrowers (mean = 3.81). Also, interest rate cuts and interest rate rises have asymmetric effects on leverage and default (mean = 3.58). Further, the response to interest rate shifts is heterogeneous across firm (mean = 3.52). Similarly, interest rate shifts have different implications for leverage and default in the short run than in the longer run (mean = 3.45).

Table 4.5: Interest Rate

		Mean	Std. Dev
IR1	High short-term interest rates increase credit risk	3.1	1.118
IR2	Interest rate cuts/rises have asymmetric effects on default	3.8	1.021
IR3	The response to interest rate shifts is heterogeneous across firm	3.2	0.934
IR4	Interest rate shifts have different effects for leverage and default	3.5	1.193
	Interest rate	3.51	0.644

Business Experience:

Study results in table 4.6 presents the results on business experience. From the table, it is evident that the institutions has put in place a system for the ongoing administration of their various credit risk-bearing portfolios (mean = 3.67). The system in place also monitors the condition of individual credits, including determining the adequacy of provisions and reserves (mean = 3.66).Besides, the institution has developed and utilized an internal risk rating system in managing credit risk (mean = 3.64).Thus, the rating system are consistent with the nature, size and complexity of a bank's activities (mean = 3.54) .However, it has not been fully established if the institutions management information system provides adequate information on the composition of the credit portfolio, including identification of any concentrations of risk (mean = 3.41).

Table 4.6 Business Experience

		Mean	Std. Dev
BE1	Credit risk-bearing portfolios are well managed	3.67	1.032
BE2	There is a system for monitoring individual credits	3.66	0.964
BE3	There is an internal risk rating system in managing credit risk	3.64	0.978
BE4	Rating is consistent with the size and complexity of activities	3.54	1.015
BE5	MIS system give information on credit portfolio	3.41	1.02
	Business Experience	3.50	0.644

Credit Risk:

In table 4.7, results on credit risk were revealed. Results indicated that the institution has been making sufficient profits to cover up all its operational costs (mean = 3.96), institution employed more workers over the last 2 years (mean = 3.87) and the institutions have increased the number of members for the last 2 years (mean = 3.77). They also revealed that institutions have been able to add its asset for the last 3 years (mean = 3.72). In general results on credit risk summed up to a mean of 3.837, standard deviation 0.663.

Table 4.7: Credit Risk

		Mean	Std. Dev
CR1	Bank has been making profits to cover up its operational costs	3.96	1.162
CR2	Institution employees more employees over the last 2 years	3.87	0.947
CR3	Bank has improved the numbers of members for the last 2 years	3.77	0.996
CR4	Institutions has been able to add it assets for the last three years	3.72	1.041
	Credit Risk	3.83	0.663

Test of Regression Assumptions:

The data was tested to determine whether the assumptions of ordinary least square (OLS) are met.

Test of Normality:

Both kurtosis and skewnness were used to determine the normality of the data distribution for the variables recovery mechanism, credit rating, interest rates, business experience, and credit risk. The results are presented in Table 4.8.

Table 4.8: Skewnness and Kurtosis Results (N=125)

	Skewnness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Recovery Mechanism	-.158	.180	-.911	.358
Credit Rating	-.183	.180	-.833	.358
Interest Rates	-.233	.180	-.894	.358
Business Experience	.250	.180	-.300	.358
Credit Risk	.228	.180	-.893	.358

The skewnness statistic and kurtosis statistic obtained for the variables of interest in this study were in the range -0.233 to 0.250 for skewnness and -0.911 to-.300 for kurtosis. According to Hair *et al.,* (2010) the requisite range for normally distributed data is between -1.00 and +1.00. All the values of skewnness and kurtosis fell in the range -1.00 and +1.00 and it was concluded that the distribution of data for the variables was normal.

Further, Kolmogrov-Smirnov test was used to check the normality of the distribution for the variables recovery mechanism, credit rating, interest rates, business experience, and credit risk. Kolmogrov-Smirnov test compares scores in the sample to a normally distributed set of scores with the same mean and standard deviation and if the test is non-significant (p>0.05) then the distribution of the sample is not significantly different from normal distribution. The K-S test statistic for the variables recovery mechanism, credit rating, interest rates, business experience, and credit risk were not significant and it is concluded that the variables were normally distributed. The results of the K-S test were as indicated in Table 4.9.

Table 4.9: One-Sample Kolmogorov-Smirnov Test (N=125)

		Recovery Mechanism	Credit Rating	Interest Rates	Business a) Experience	Credit Risk
Normal Parameters[a,b]	Mean	1.5281	1.5170	1.5742	1.4462	1.4599
	Std. Deviation	.45834	.43007	.45279	.37263	.45818
Most Extreme Differences	Absolute	.269	.294	.314	.181	.281
	Positive	.269	.220	.246	.181	.281
	Negative	-.256	-.294	-.314	-.157	-.266
Kolmogorov-Smirnov Z		3.630	3.969	4.230	2.438	3.786
Asymp. Sig. (2-tailed)		.230	.342	.145	.298	.524

Test of Independence of the Error Terms:

Test of independence of the error terms was done using Durbin-Watson test. The test was used to test for presence of serial correlation among the residuals. This assumption of independence of errors requires that the residuals or errors in prediction do not follow a particular pattern from case to case. The value of Durbin-Watson test statistic ranges from 0 to 4 as suggested by Hair *et al., (*2010) the residuals are not correlated if the Durbin-Watson statistic is approximately 2 and the acceptable range is 1.5-2.50. The Durbin-Watson statistic for the estimated models was 1.336 as shown in Table 4.16. Hence serial correlation among the residuals.

Multicollinearity Diagnostics:

Collinearity means that two or more of the independent/explanatory variables in a regression have a linear relationship. This causes a problem in the interpretation of the regression results. First, an examination of the correlation matrix of the independent variables was done. The presence of high correlations in the region of r=0.9 and above is an indication of substantial collinearity. Secondly, collinearity could be due to the combination of two or more other independent variables. Multicollinearity was assessed using Variance Inflation Factors (VIF). A threshold of Variance inflation factor of 10 is suggested Kleinbaum *et al.,* (1988). The variance inflation factor values recovery mechanism, credit rating, interest rates, business experience and credit risk are in the range of 1.591 -3.584 and are less than the set threshold which indicate that multicollinearity was not an issue. The results are presented in Table 4.10.

Table 4.10: Collinearity Statistic for Variables

Variables	Tolerance	VIF
Recovery Mechanism	0.521	1.918
Credit Rating	0.466	2.147
Interest Rates	0.479	2.089
Business Experience	0.479	2.088

Validity of Study Variables:

Validity is the degree to which a variable actually measures what it has intended to measure (Nunnally and Burnstein, 1994). For the purpose of this study two forms of validity were utilized- content validity and construct validity.

Content Validity of Study Variables:

Content validity refers to the adequacy of indicators to measure the concepts. The better the scale items measure the domain of content, the greater the validity. An assessment of content validity requires experts to attest to the content validity of each instrument (Sekaran, 2000). In order to ensure content validity, previously validated measures were pretested and the preliminary questionnaire was pre-tested on a pilot set of respondents for comprehension, and relevance.

Respondents in the pre-test were drawn from Eldoret in Uasin Gishu County which were similar to those in the actual survey in terms of background characteristics, familiarity with the topic of research. The institutions were not part of the target population of study as this would have brought about assessment biases. As recommended by Malhotra (2007), the questionnaire pre-tests were done by personal interviews in order to observe the respondents' reactions and attitudes. All aspects of the questionnaire were pre-tested including question content, wording, sequence, form and layout, question difficulty and instructions. The feedback obtained was used to revise the questionnaire before administering it to the study respondents.

Construct Validity of Study Variables:

Construct validity measures the degree to which a scale measures what it intends to measure and this was assessed by factor analysis. In order to assess the construct validity, the items were examined by principal components extraction with varimax orthogonal rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, and Bartlett's test of sphericity were conducted. The following sections present the factor analysis results for each study variable. The items for recovery mechanism, credit rating, interest rates, business experience, and credit risk were factor analyzed with a view to further understand the underlying characteristics of the construct.

For recovery mechanism, credit rating, interest rates, business experience, and credit risk the Kaiser-Meyer-Olkin (KMO) had a measure in the range .503-.874, which is above the threshold of 0.5. The Bartlett's test was significant. The KMO values and a significance of Bartlett's statistic confirmed the appropriateness of the factor analysis for the four constructs. Recovery mechanism results indicated that, there was one factor whose eigenvalues exceeded 2.922 thus exceeded the threshold of 1.0. Hence one component was extracted explaining 48.705% of the total variance. Any item that fails to meet the criteria of having a factor loading value of greater than 0.5 and loads on one and only one factor is to be dropped from the study (Liao *et al.,* 2007). This implies that the six observed items of Recovery mechanism loaded exclusively to one component as presented in table 4.11.

Considering credit rating, two components with eigenvalues greater than 1 were extracted. The two components explained 64.159% of the total variance. Business experience principle components with eigenvalues greater than 1 were extracted. Using this criterion, three components that met the criteria were extracted. The three components explained 81.835% of the total variance. Orthogonal rotation using Varimax was used to enable easier interpretation of factor loadings on the extracted components.

The observed items interest rate were factor analyzed. Sampling adequacy of .800 was obtained using KMO statistic. This confirmed that factor analysis was appropriate for this study. Using the criteria of eigenvalues greater than 1.0 one component that met the criteria was extracted. The component explained 59.514% of the total variance. All the 4 items measuring interest rate are distinctly loading to one of the two components extracted indicating that they are significantly contributing to the explanation of the construct being measured. The results of principal component analysis for credit risk indicated on factor whose eigenvalues exceeded 1.0. Hence the factor extracted explained 67.404% of the total variance. The results are presented Table 4.12.

Table 4.12: Factor Analysis Results

Component		Total variance Explained	
Item	Loading	Eigen Values	%Var.
Recovery Mechanisms		2.922	48.705
Board approve periodically credit risk policies	.642		
Credit risk strategy reflects tolerance for risk	.753		
Management implements the credit risk strategy	.800		
Credit risk policies addresses credit risk	.739		
Bank ensure that the risks have adequate controls	.566		
Bank manage credit risk inherent in all products	.727		
KMO measure of sample adequacy	.75		
Credit Rating		2.57	64.16
Credit ratings are good indicators of credit risk	.912		
We assess debtor's ability to pay back	.856		
We calculate creditworthiness of customers	.716		
We operate within sound credit-granting criteria	.611		
Quality of credit portfolio is monitored	.749		
KMO measure of sample adequacy	.663		
Business Experience		3.42	81.835
Credit risk-bearing portfolios are well managed	.723		
System for monitoring individual credits	.770		
Internal risk rating system in managing credit risk	.541		
Rating is consistent with complexity of activities	.863		
MIS system give information on credit portfolio	.723		
KMO measure of sample adequacy	.763		
Interest Rate		2.647	59.514
High interest rates increase credit risk	.887		
Interest rate cuts/rises have effects on default	.723		
The response to interest rate is heterogeneous	.770		
Interest rate have different effects for and default	.541		
KMO measure of sample adequacy	.863		
Credit Risk		1.647	67.404
Bank making profits to cover its operational costs			
Bank employees over the last 2 years	.887		
Has improved members for the last 2 years	.723		
Has added it assets for the last three years	.770		
Has been making profits to cover operational costs	.541		
KMO measure of sample adequacy	.763		

Source Study survey (2016)

Reliability Test:

Cronbach's alpha reliability test was used to determine the internal consistency of the question items that measured the variables recovery mechanism, credit rating, interest rates, business experience, and credit risk. Sekeran (2000) benchmark of Cronbach's coefficient value of greater than 0.7 indicates the tool is reliable to measure the variable was used. Table 4.13 presents the results of the reliability test.

Table 4.13: Cronbach's alpha Reliability coefficient

Variable	No of items used	Alpha Value
Recovery Mechanism	6	.966
Credit Rating	5	.910
Interest Rates	4	.915
Business Experience	4	.894
Credit Risk	5	.970

From tabulated results in Table 4.8, alpha coefficient for all the variables intelligence were in the range .910 – .970. Hence are above the benchmark of 0.7 suggested by Sekeran (2000) and thus the scales were reliable for measuring the variables.

Correlation:

Correlation analysis is a technique of assessing the relationship between variables. Thus, the study analyzed the relationships that are inherent among the independent and dependent variables. The results regarding this were summarized and presented in Table 4.8. From the results, the most significant relationship exists between business experience and credit risk with a correlation coefficient value of 0.682 (significant at $\alpha = 0.01$). Also, credit rating correlated with credit risk as indicated by the correlation coefficient value of 0.679 which is significant at $\alpha = 0.01$.

Further, recovery mechanism had a positive and significant correlation with credit risk as evidenced by correlation coefficient value of 0.650 (significant at $\alpha = 0.01$). Similarly, interest rates had a positive and significant correlation with credit risk as evidenced by correlation coefficient value of 0.643 (significant at $\alpha = 0.01$). . Table 4.14 presents the results of the correlation analysis.

Table 4.14: Correlation Statistics

	1	2	3	4	5
Credit Risk	1				
Interest Rates	.643**	1			
Business Experience	.682**	.624**	1		
Credit Rating	.679**	.614**	.655**	1	
Recovery Mechanism	.650**	.621**	.566**	.603**	1

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

Regression Results:

Model Summary:

The regression results from Table 4.15 shows that the study multiple regression model had a coefficient of determination (R^2) of about 0.622. This means that 62.2% variation of credit risk is explained/predicted by joint contribution of interest rates, business knowledge, credit rating and recovery mechanism. Durbin–Watson statistic is within the thumb rule value of 1 to 2, thus from the table Durbin Watson statistics value was 1.336 indicating lack of serial correlation. Table 4.16 further reveals that the F-value of 139.914 with a p value of 0.00 significant at 5% indicate that the overall regression model is significant, hence, the joint contribution of the independent variables was significant in predicting credit risk.

Hypothesis Results:

The study's first hypothesis (H_{O1}) stated that interest rate has no significant effect on credit risk of small and medium enterprise loans. Study results findings rejected the hypothesis as evidence of β_1=0.153, ρ<0.05, and infer that interest rates had positive effect on credit risk of small and medium enterprise loans in banks. A statement supported by p-value=0.000.

The second Hypothesis (H_{O2}) of the study stipulates that business experience has no effect on credit risk of small and medium enterprise loans in banks. As evidence from the study results (β_2 =0.233, ρ<0.05) hypothesis 2 was rejected, implying that business knowledge has positive significant effect on credit risk of small and medium enterprise loans in banks. This showed that the more the knowledge, the higher the credit risk as evidenced by a p-value = 0.000 which also shows that it has the highest effect.

The third Hypothesis (H_{03}) of the study stipulated that credit rating has no significant effect on credit risk of small and medium enterprise loans in bank. As evidence from the study results ($\beta_3 = 0.256$, $\rho < 0.05$) null hypothesis 3 was rejected suggesting that appropriate credit rating has significant positive effect on credit risk of small and medium enterprise loans in bank.

Finally null hypothesis four (H_{04}) of the study postulated recovery mechanism has no significant effect on credit risk of small and medium enterprise loans in banks. The study findings showed that hypothesis 4 was rejected as illustrated by $\beta_4 = 0.243$, $\rho < 0.05$, thus, credit mechanism has a positive and significant effect on credit risk of small and medium enterprise loans in banks. The results are captured in Table 4.16.

Table 4.16: Multiple Regression Results

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.844	0.135		6.271	0.000
Interest rates	0.153	0.044	0.169	3.517	0.000
Business knowledge	0.233	0.04	0.279	5.802	0.000
Credit Rating	0.256	0.05	0.249	5.092	0.000
Recovery mechanism	0.243	0.048	0.236	5.118	0.000
R Square		0.622			
Adjusted R Square		0.618			
F		139.914			
Sig.		.000			
Durbin-Watson		1.336			

Hence the estimated model takes the form:

$y = 0.844 + 0.153X_1 + 0.233X_2 + 0.256X_3 + 0.243X_4$

Model : X_1 = Interest rates

X_2 = Business knowledge

$X_{3\ =}$ Credit rating

X_4 = Recovery mechanism

All independent variables x_1-x_4 are significant predictors of credit after adjusting for the effect of other independents in the variable in the model. R^2-adjusted $= 0.618$ which implies that 61.8% of the variations in credit risk is explained by the independent variables.

5.   DISCUSSION OF RESULTS

Interest Rate and Credit Risk:

Interest rates showed a positive and significant effect on credit risk ($\beta = 0.153$, $\rho < 0.05$). A study done by Adelson, (2003) revealed that each financial transaction that a bank completes may affect its interest rate risk profile which ends up influencing its credit management capacity. This means that an increase in interest rate risk profile has an influence on credit management capacity. In a similar vein, Forest and Wong, (2004) inferred that a rise in interest rates results to credit quality problems. Therefore, Allen, (2004) recommends that there is need for the bank's risk measurement to identify and quantify the major sources of a bank's interest rate risk in a timely manner in order to enhance effective credit risk management.

Credit Rating and Credit Risk:

Credit rating showed a positive and significant effect on credit risk ($\beta = 0.256$, $\rho < 0.05$). Titman, (2007) argues that credit ratings are not flawless indicators of credit risk management since credit agencies have been criticized for overreliance on historical information and for being slow to react to new information. However, Zelmer (2007) argues that credit ratings offer important benefits to market participants in ensuring effective credit risk management. Additionally, Bolton, (2001) posits that through credit ratings, the government is able to effectively manage credit risk.

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Recovery Mechanisms and Credit Risk:

Recovery mechanism showed a positive and significant effect on credit risk ($\beta= 0.243$, $\rho<0.05$).In line with the results, Fishman, (2007) argues that recovery rates on corporate defaults can be volatile hence significantly affecting the level of credit risk management. It is therefore important for the board to meet regularly perhaps at least annually either within the credit risk strategy or within a statement of credit policy (Zechner, 2011).On the same note, Halling, (2011) stipulates that business knowledge should give the credit risk strategy of any bank and should provide continuity in approach thus effective credit risk management.

Business Experience and Credit Risk:

Business experience showed a positive and significant effect on credit risk ($\beta= 0.233$, $\rho<0.05$). Halling, (2011) argues that business knowledge should give the credit risk strategy of any bank and provide continuity in approach thus effective credit risk management. Further, Alavi, (2001) argues that banks should have experienced business personnel that develop and implement policies and procedures to ensure that the credit portfolio is adequately diversified. Generally, business experience makes it possible for the senior management of a bank to implement the credit risk strategy approved by the board of directors thus contributing to effective credit risk management policies.

6. SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

Summary of Findings:

The main objective of this study was to investigate factors influencing credit risk for small and medium enterprise loans a survey of banks in Kitale Town, Kenya. To achieve the objectives of the study primary data was collected. The target population was employees from 11 Commercial Banks in Kitale (Kenya Commercial Bank data base, 2013). This section presented the findings from the study in comparison to what other scholars have said about effect of interest rates, credit rating, recovery mechanism and business experience on credit risk of Small and medium enterprise loans in banks.

Interest Rate and Credit Risk:

As evidenced in chapter four, interest rates showed a positive and significant effect on credit risk ($\beta= 0.153$, $\rho<0.05$). This means that an increase in interest rate risk profile has an influence on credit management capacity. Cognate to the results, a study done by Adelson, (2003) revealed that each financial transaction that a bank completes may affect its interest rate risk profile which ends up influencing its credit management capacity. In a similar vein, Forest and Wong, (2004) inferred that a rise in interest rates results to credit quality problems. Therefore, Allen, (2004) recommends that there is need for the bank's risk measurement to identify and quantify the major sources of a bank's interest rate risk in a timely manner in order to enhance effective credit risk management.

Credit Rating and Credit Risk:

Also, credit rating showed a positive and significant effect on credit risk ($\beta= 0.256$, $\rho<0.05$).Consistently, Titman, (2007) argues that credit ratings are not flawless indicators of credit risk management since credit agencies have been criticized for overreliance on historical information and for being slow to react to new information. However, Zelmer (2007) argues that credit ratings offer important benefits to market participants in ensuring effective credit risk management. Additionally, Bolton, (2001) posits that through credit ratings, the government is able to effectively manage credit risk.

Recovery Mechanisms and Credit Risk:

Further, recovery mechanism showed a positive and significant effect on credit risk ($\beta= 0.243$, $\rho<0.05$).In line with the results, Fishman, (2007) argues that recovery rates on corporate defaults can be volatile hence significantly affecting the level of credit risk management. It is therefore important for the board to meet regularly perhaps at least annually either within the credit risk strategy or within a statement of credit policy (Zechner, 2011).On the same note, Halling, (2011) stipulates that business knowledge should give the credit risk strategy of any bank and should provide continuity in approach thus effective credit risk management.

Business Experience and Credit Risk:

Business experience showed a positive and significant effect on credit risk ($\beta= 0.233$, $\rho<0.05$).In conformity with the results, Halling, (2011) argues that business knowledge should give the credit risk strategy of any bank and provide continuity in approach thus effective credit risk management. Further, Alavi, (2001) argues that banks should have experienced business personnel that develop and implement policies and procedures to ensure that the credit portfolio is adequately diversified. Generally, business experience makes it possible for the senior management of a bank to implement the credit risk strategy approved by the board of directors thus contributing to effective credit risk management policies.

7. CONCLUSION

Interest Rate and Credit Risk:

In conclusion, the study has established that whenever there are high short-term interest rates, there is an increase in credit risk. This is especially the case for the most indebted borrowers. In addition, interest rate shifts are heterogeneous across the firm and have different implications for leverage and default in the short run than in the longer run. This points to the need for a comprehensive risk management process that ensures the timely identification, measurement, monitoring, and control of risk.

Credit Ratings and Credit Risk:

Also, credit ratings are an effective tool in the management of credit risk. Through credit ratings, banks are able to establish the debtor's ability to pay back the debt and the likelihood of default. The banks are therefore protected against loss from a credit event. Therefore, credit ratings are an effective tool in assessing the credit quality of counterparties and their financial instruments thud ensuring effective credit risk management.

Recovery Mechanisms and Credit Risk:

Moreover, the study has established that recovery mechanism significantly influences credit risk. This is exhibited by adequate risk management procedures and controls for products and activities that are new. In addition, the credit risk strategy and policies are effectively communicated throughout the banking organization hence good credit risk management. There is however doubt if the senior management implements the credit risk strategy approved by the board of directors and addresses credit risk in all of the institutions 'activities.

Business Experience and Credit Risk:

Finally, the study has established that business experience has a significant influence on the management of credit risk. Specifically, there is a system in place for the ongoing administration of various credit risk-bearing portfolios as well as monitoring the condition of individual credits, including determining the adequacy of provisions and reserves. Furthermore, on a positive note there is an internal risk rating system in managing credit risk.

8. RECOMMENDATIONS

In light of the aforementioned findings, the following recommendations are made:

1. It is evident that an increase in interest rate results in increase in the credit risk. It is therefore utmost necessary for firms to have a comprehensive risk management process that ensures the timely identification, measurement, monitoring, and control of risk. As well, bank's interest rate risk management procedures needs to establish responsibility and authority for identifying the potential interest rate risk arising from new or existing products.

2. Further, in order to manage credit risk, it is important for banks to make use of credit ratings. With the use of credit ratings, banks will be able to determine debtor's ability to pay back the debt and the likelihood of default. As well, it is recommended that banks put in place a system for monitoring the overall composition and quality of the credit portfolio. Further, it would be prudent for the banks to have well-defined credit-granting criteria so as to ensure effective credit risk management.

3. Additionally, it is recommended that the credit risk strategy and policies be effectively communicated throughout the banking organization. Besides, the bank's board of directors should approve the bank's strategy for selecting risks and maximizing profits. As well, the banks need to ensure that the risk of products and activities new to them are subject to adequate risk management procedures and controls before being introduced or undertaken. To sum up, business managers should have knowledge of credit risk strategy and give recognition to the goals of credit quality so at enhance effective credit risk management.

4. Finally, in order to enhance credit management, banks should have experienced business personnel that develop and implement policies and procedures to ensure that the credit portfolio is adequately diversified. Further, credit policies must be communicated throughout the organization by experienced individuals. For the banks themselves, a system that monitors the condition of individual credits, including determining the adequacy of provisions and reserves is required. They should also develop and utilize an internal risk rating system in managing credit risk. In so doing, the management of credit risk will be enhanced.

9. FURTHER RESEARCH RECOMMENDATIONS

This study was conducted to investigate factors influencing credit risk for small and medium enterprise loans a survey of banks in Kitale Town, Kenya. Since the current research was limited to banks in Kitale town, a larger sample and a more specific instrument might be desirable and might validate the findings of the study. Apart from extending the sample size, including moderator factors and looking forward to direct or indirect relationship towards credit risk can also be made in the research models of the new research by other scholars in future.

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