EFFECTS OF CREDIT RISK ON PERFORMANCE OF TRANSPORT FIRMS IN KENYA

[1]Jamal Ali Mohamed Noor

PhD Student- Assistant Director, Finance and Administration Mombasa County Government;

jamnur79@gmail.com; P.O Box 83230 – 80100 Mombasa

[2]Dr. Agnes Njeru

Lecturer - Jomo Kenyatta University of Agriculture and Technology – Karen Campus;

agnes3198@gmail.com P.O. Box 62000-0200, Nairobi – Kenya

[3]Dr. Esther Muoria

Registrar, Academic Affairs - Jomo Kenyatta University of Agriculture and Technology

emuoriah@yahoo.com; P.O. Box 6200-00200, Nairobi- Kenya

ABSTRACT

The specific objective of this study was to establish the effect of credit risk on performance of transport firms in Mombasa County. The study employed triangulation (Mixed of quantitative and qualitative) research design. The target population was 2013 firms and the sample size was 172 firms arrived at through stratified and purposive sampling methods. The questionnaire was the primary data tool. The study found out that credit risk has significant effects on financial performance of transport firms in Kenya. It concludes that transport firms should maintain appropriate credit measurement, administration and monitoring. It recommends that managers of Transport firms should continuously ensure adequate controls over credit risk are put in place.

Key words: Risk, Credit Risk, Triangulation, Financial Performance, Firms; ROI; ROA.

1.1 INTRODUCTION

Credit risk the risk of a credit institution suffering losses due to default, late or incomplete execution of the debtor financial obligations before the credit organization in accordance with the terms of the contract. It is an exposure that the potential borrower or counterparty will fail to meet its obligations according to the terms agreed upon (Lapteva, 2009) . Basel, (2000) assert that since exposure to credit risk is the leading source of problems in banks world-wide, banks and thus it is spiral in nature cutting across financial and non- financial institutions, (transport firms included).The core objective of transport firms is to maximize its profit and shareholders' wealth regardless of their size thus, must determine the acceptable risk/reward trade-off for its activities, factoring in the cost of capital.

Credit exposure is a situation by which a contractual arrangement is not honored means that there is a risk of non-performance. This has the capacity to hurt the objectives of a firm when what it considered will happen, in fact, does not (Brown & Moles, 2014).

1.2 Credit risk and Performance

Ownership and management of transport firms are subsistence ranging from one truck to a fleet of 500 or more. The microenterprise kind of ownership is that insurance cannot obtain the protection because traditional banks are unwilling to operate under these conditions (Omar, Namusonge, & Sakwa, 2017). The poor are often trapped in a vicious circle, thus, generating income at a subsistence level which makes it difficult to accumulate savings or other assets and making it difficult for firms to access finance. In this study, firm's performance is indicated by its profitability which is measured in terms of return on assets (ROA), returns on Investment (ROI) or its Net profit Margins which is the net profit as a percentage of the revenue.

1.3 Statement of the Problem

Among Finance theory's assumptions, is that the market value maximization of shareholders' equity through investments in an environment where outcomes are uncertain. In order to ensure that financial risk strategy add value for shareholders, therefore, a sound relationship between risk management and shareholder value has to exist (Flesch, 2009).

Financial globalization has intensified a country's exposure to foreign shocks. This process is inevitable as countries embrace internationalization of financial and investment services in the effort to benefit from the international market and to be able to diversify risks (Schmukler & Vesporani, 2006).

A key justification for this study is that Globalization has brought about growth in infrastructure which has led to development of businesses including transport industry. The strategic location of Mombasa Port has developed neighboring landlocked countries making transport industry perform well hence grow very fast. Performance of any financial entity involves risks thus the need for this study of financial risks of transport firms.

2.0 REVIEW OF LITERATURE

Credit risk means the quality or collection difficulty an entity (lender) is exposed to when another (borrower) fails to meet its obligation in a manner agreed upon. A bank' credit risk means exposure that a borrower will be unable to make payment of interest or principal in a timely manner (Credit risk is an exposure to defaults, failures and untimely honoring of agreement of borrower to the lender. This has the capacity to hurt the objectives of a firm when what it considered will happen, in fact, does not (Brown & Moles, 2014).

Credit risks are collection difficulties, such as delinquencies and losses due to economic ability or health of an Industry. Sources of credit risk include, limited firm's capacity, poor credit policies, volatility interest rates, poor management, poor government policies, liquidity levels, poor loan regulations, over lending, poor credit assessment by the lender, laxity, poor lending practices and lack of supervision by the central bank (Coyle, 2000).

A rise or fall in profitability makes a difference in the liquidity and working-capital ratios of firms borrowing capacity. Also the economic environment will influence credit risk due to amount required to borrow and invest, changes in income, unemployment and inflation. These changes will have an important impact on the incidence of collection difficulties and

default by borrowers. However, these risks can be minimized through banks with stable capital, increase scope of customers, information sharing borrowers through (Credit Reference Bureau) CRBs, stabilization of interest rates (Interest capping), reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers (Laker, 2007; Sandstorm, 2009).

In the case of Banks, credit extensions had always used a static approach whereby subsequent to the loan origination, the credit risk of the borrower would remain on the issuing creditor's balance sheet until time for maturity. As the credit markets started to change over the years, the rising defaults led to diverging loan costs and firm revenues that spiraled out of control for most banks. An agency conflict started to develop between bank profitability and account officers' performance compensation while funding and administrative costs on defaulted loans were not being recovered. Credit markets also change as innovative financial products came on stream into the markets, only to reveal the emerging credit quality disparities among borrowers (Joetta, 2007).

Credit risk is a concern when an organization is owed money or must rely on another organization to make a payment to it or on its behalf. The failure of borrower is less of an issue when the organization is not owed money on a net basis, although it depends to a certain degree on the legal environment and whether funds are owed on a net or aggregate basis on individual contracts. Karen, (2005) indicates that the deterioration of credit quality, such as that of securities issuer, is also a source of risk through the reduced market value of securities that an organization might own.

The first component of credit risk is the continuing stock of consumer credit outstanding, the credit risk of which is reduced significantly over the course of the business expansion as incomes rise, unemployment falls, prices rise, etc. The second component is the flow of credit paid off, with lower-than-average credit risk, which probably doesn't change much over the business cycle. The third component is the flow of new credit. The credit risk on new credit is usually higher than average, and during a business expansion the availability of credit on easier terms and to less creditworthy borrowers tends to raise that risk substantially.

3. RESEARCH METHODOLOGY

This study used triangulation research method, which is a combination of quantitative and qualitative research in a single study. The target population was 2013 transport firms in Kenya. Stratified sampling method was used to classify Transport firms in four categories as follows; truck cargo/heavy equipment carrier; Truck Fuel Tank carriers; Truck Logistics/Container carriers; and buses. Purposive sampling meant for qualitative and Probability sampling used to identify 172 transport firms as sample size (Creswell, 2014).

172 questionnaires were distributed to each firm earmarked for study. Validity and reliability were tested using Cronbach alpha and KMO and Bartlett test respectfully. Data was analyzed both quantitatively and qualitatively. Descriptive statistics were generated. Regression analysis and ANOVA were generated. Presentation Data collected was by using tables for ease of interpretation and analysis.

4.0 DATA ANALYSIS AND INTERPRETATION

4.1 Response Rate

Out of the 172 questionnaires distributed, 155 were completed and received back hence the response rate was 90.11%. This response rate was sufficient for the study as indicated in Table 4.1.

Table 4.1 Response Rate

Response	Frequency	Percentage
Responded	155	90.11
Non-response	17	9.89
Total	**172**	**100**

4.2 Reliability and Validity Analysis

The reliability of an instrument refers to its ability to produce consistent and stable measurements. The most common reliability coefficient is the Cronbach's alpha, which is a measure of internal consistency, that is, how closely related a set of items are as a group. A high value of alpha is often used as evidence that the items measure an underlying construct. Cronbach's alpha was used to determine the reliability of the questionnaire used in this study.

Theuri, Namusonge and Mugambi (2015) held a view that value for Cronbach alpha to be should ranges between 0 and 1.0. And 1.0 indicates perfect reliability, while 0.70 is deemed to be the lower level of acceptability. Same was adopted in this study as indicated in Table 4.2

Table 4.2 Reliability Analysis

	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Credit Risk	.733	.723	6

The findings indicated that Credit Risk had a coefficient of 0.733, thus the construct were reliable for this study.

4.3 Credit Risk on Financial Performance

The study sought to investigate the influence of credit risk on financial performance of transport firms in Kenya. Among the objective of this study was to establish credit risks effect on performance of transport firms in Mombasa County. Credit Risk was assessed by default risk, concentration risk and country Risk.

4.4 Sample Adequacy Results of Credit Risk on Financial Performance

This study based on the constructs which was refined by utilizing principal component analysis on the initial sub variable comprising each construct. Each principal component analysis extracted factors, and factor loadings greater than 0.5 were retained .The researcher examined Kaiser Meyer-Olin Measure of Sampling Adequacy indicator to assess the factorability of items.

Table 4.3: Credit Risk KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	276.869
	df	21
	Sig.	.000

The Bartlett's Test of Sphericity result is 0.000 which shows high significance. Rusuli *et al*., 2013, explained that Measure of Sampling Adequacy should exceed 0.5 and for Bartlett's test of Sphericity the significant level of p at less than 0.05. Table 4.3 gives a KMO of 0. 809 which is more than the 0.5 thresh hold while the Bartlett's test of Sphericity has a p value of

less than 0.05. Therefore it can be seen that the credit risk data is sufficiently adequate for further analysis

4.5 Factor Analysis Results of Credit Risks

Factor Analysis is either Exploratory Factor Analysis (EFA), which tries to discover the nature of the constructs influencing a set of responses or Confirmatory factor analysis (CFA) which investigates if an intended variable or a specified set of constructs is influencing responses in a predicted way. This study was based on the Principle Factor Analysis (PCA) which is to derive a relatively small number of components that can account for the variability found in a relatively large number of measures through data reduction procedure. The study sought to establish credit risks effect on performance of transport firms in Mombasa County.

Table 4.4 Factor Analysis Results of Credit Risks Total Variance Explained

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.054	43.634	43.634	3.054	43.634	43.634	2.508	35.830	35.830
2	1.046	14.949	58.583	1.046	14.949	58.583	1.593	22.754	58.583
3	.810	11.576	70.159						
4	.671	9.585	79.745						
5	.586	8.371	88.116						
6	.544	7.769	95.885						
7	.288	4.115	100.000						

Extraction Method: Principal Component Analysis.

Credit Risk was assessed by two constructs namely default risk and credit risk management. Through factor analysis, two factors were identified which had the biggest influence on credit risk with cumulative variance of 64.047%. Factor one was the highest with 46.280% and factor two had 17.767% of total variance. These two factors had their Eigen values greater than 1 and had the greatest influence on credit risk and explain about 64.047% of variance as shown in Table 4.4.

4.6 Credit Risk Rotated Component Matrix Results

In order to make the interpretation of the factors that are considered relevant, the first selection step is generally followed by a rotation of the factors that were retained. Two main types of rotation are used: orthogonal, when the new axes are orthogonal to each other and oblique when the new axes are not required to be orthogonal to each other. By rotating factors, this study attempted to look for a factor solution that is equal to that obtained in the initial extraction of Factor Analysis but which has the simplest interpretation. This study used Varimax Rotation Method as shown in table 4.5.

Table 4.5 Credit Risk Rotated Component Matrix[a]

	Component	
	1	2
Political and Government's economic policies	.770	
Foreign Investments	.758	
Credit Risk Management	.751	
Default	.586	
Foreign Investments	.569	
Bank Control of credit Risk		.889
Concentration(Containers,Tippers,Passengers,Tankers)		.674

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Seven constructs of credit risk variable have a factor loading of higher than 0.5. This study found out that the leading constructs were two, namely; Economic Policies and Bank Control. Therefore, the component values indicate that there was interrelation of the factors rotated using varimax method of rotation method.

4.7 Descriptive Results of Credit Risks

Descriptive measures are used to make a comparison in the variability of the two series which purportedly differs widely in their averages. The researcher calculated the coefficient of dispersion based on different types of descriptive measures of deviation or dispersion.

Credit Risk was assessed by one measure on one sub-variable of country risk. The measure carried out was on Mean, standard deviation and Cronbach Alpha. Descriptive data shown on Table 4.6 presents the relevant results on a scale of 1 to 5 (where 5 = Strongly Agree and 1 = Strongly Disagree).

Credit risk was assessed by one measures namely Country Risk. Descriptive data shown on Table 4.6 presents the relevant results on a scale of 1 to 5 (where 5 = Strongly Agree and 1 = Strongly Disagree).

Table 4.6 Results of Credit Risks Descriptive Results

Variable	Mean	Std. Deviation	Cronbach's Alpha
Credit Risk	4.1428	.95090	.733

It was established that the respondent strongly agreed that Credit risk had effect on financial performance of transport firms in Mombasa. Country risk as a sub variable influences credit risk than default and concentration risk in Transport firms as indicated by mean scores of

4.1428. It was strongly agreed that transport firms concentrated more on country risk than other types of credit risk.

According to Ali, Namusonge & Sakwa (2016), Cronbach's alpha is used to test the reliability of constructs within a given questionnaire. The findings indicated that credit risk measures had a coefficient of 0.733. Thus, measures depicted Cronbach's alpha of above the suggested value of 0.7 hence the reliability of this study.

4.8 Credit Risks Data Normality Test Results

Normality tests are statistical analysis tools that take the assumptions that the variables are normally distributed. To test for Normality, the researcher used skewness and Kurtosis test and autocorrelation test. These tests give confidence and reliability inferences in the data collected.

4.8.1 Skewness and Kurtosis

Measures of skewness is based on mean and median while kurtosis measures the peaked-ness of the curve of the frequency distribution (Kothari & Garg, 2014). The results in Table 4.7 show that a skewness coefficient of -1.397 and kurtosis coefficient of 1.200. Based on these results, it was concluded that data was normally distributed since their statistic values were between -1 and +1. George and Mallery, (2010) were of a view that in order to prove normal univariate distribution the values of asymmetry and kurtosis have to be between -2 and +2 to be acceptable.

Table 4.7 Credit Risk Skewness and Kurtosis test

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Credit_Risk	155	4.1428	.95090	-1.397	.195	1.200	.387
Valid N (listwise)	155						

4.8.2 Kolmogorov-Smirnov (K-S) Test for Normality

Ali et al. (2016) argued that many commonly used statistical methods require that the population distribution be nearly normal. Unfortunately, in some studies the one sample Kolmogorov-Smirnov test has been used for testing normality while the assumptions of applying this test are not satisfied. To conduct this test, it is assumed that the population distribution is fully specified.

Table 4.8 Credit Risk Kolmogorov – Smirnov Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Credit_Risk	.184	155	.000	.814	155	.000

a. Lilliefors Significance Correction

Decision making process in K-S test with test is if the value of sig. < 0.05, then data is normal and if the value sig. >0.05, then data is not normal. Based on output coefficients the obtained value sig. of credit risk is 0.00, meaning that the value of the variables sig < 0.05, it can be concluded that the data normal. From the table 4.8, the data on credit risk did not deviate significantly from the normal distribution and thus, it can be asserted as fit for statistical tests and procedures that assume normality of the variables.

4.9 Credit Risk Auto Correlation test Results

Correlation is the existence of some definite relationship between two or more variables. Correlation among residuals of the regressions' data sets may produce inefficient results.

Durbin and Watson's test statistic (Yupitun, 2008) is used to detect the presence of serial of correlation among the error terms in time series.

Table 4.9 Credit risk Durbin-Watson Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.764[a]	.584	.581	.43614	1.772

a. Predictors: (Constant), Credit_Risk
b. Dependent Variable: Performance

Makori and Jagongo (2013) stated that a value of between 1.5 to 2.5 is acceptable. As indicated in table 4.9, the statistics ranges from 0 to 4. A value of 1.772 can be asserted to be within the acceptable range.

Table 4.10 Correlation Analysis Results between Financial performance and Country Risk

Correlations

		Performance	Credit Risk
Performance	Pearson Correlation	1	.764**
	Sig. (2-tailed)		.000
	N	155	155
Credit Risk	Pearson Correlation	.764**	1
	Sig. (2-tailed)	.000	
	N	155	155

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

The results as indicated in table 4.10 show there was some positive significance association between Performance and credit risk ($\rho = 0.000$). Therefore, the credit risk is very important factor in determining financial performance.

4.10 Credit Risks ANOVA Results

Table 4.11 shows the analysis of variance of the study on Credit Risks and financial Performance of Transport Firms. The results show that a significant relationship exists between Credit Risk and Performance (F = 214.974, p = 0.000) as indicated in Model 1.

Table 4.11 Credit Risks ANOVA Results

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.893	1	40.893	214.974	.000[b]
	Residual	29.104	153	.190		
	Total	69.997	154			

a. Dependent Variable: Performance

b. Predictors: (Constant), Credit_Risk

4.11 Credit risks Goodness-of-fit Model Results

The results on Table 4.12 reveals that Credit Risk, had explanatory power on performance of the transport firms as it accounted for 58.40% of its variability (R Square = 0.5840) on Model 1. This implies a moderate positive relationship between credit risk and performance of transport firms.

Table 4.12 Credit risks Goodness-of-fit Model Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.764[a]	.584	.581	.43614	1.772

a. Predictors: (Constant), Credit_Risk

b. Dependent Variable: Performance

4.12 Regression Results of Credit Risk and Performance of Transport Company

To establish the influence of Credit Risk, the following hypotheses were stated:

1. Hypothesis One

H_{01}: There is no statistically significant influence of Credit Risk on the Performance of Transport.

$H_{0A:}$ There is statistically significant influence of Credit Risk on the Performance of Transport.

Table 4.13 Regression Results of Credit Risk and Performance of Transport firm

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.624	.157		10.341	.000
	Credit_Risk	.542	.037	.764	14.662	.000

a. Dependent Variable: Performance

Table 4.13 shows the regression results of the Credit Risks (County Risks). Credit Risks (supported by β=0.764, p-value = 0.000) is statistically significant in explaining performance of transport firms.

This implied that the null hypothesis rejected and the alternative hypothesis is accepted. The regression model is summarized by equation:

$$Y = 1.624 + 0.542x_1 \quad (4.1)$$

It is concluded that there is statistically significant correlation between Credit Risk and performance of transport firms.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The relationship between credit risk and performance of transport firm was found to be statistically significant, thus, the study rejected the null hypothesis and failed to reject the alternative hypothesis. The study identified country risk as having the highest magnitude on the performance of transport firms in Mombasa.

5.2 Recommendations

It can be evidenced that credit risk affects firms' performance. This study recommends that Transport firms should establishing an appropriate credit risk environment; Firms should operate under sound credit granting process; Also maintain an appropriate credit administration, measurement and monitoring process; and lastly transport firms should ensure adequate controls over credit risk.

6.0 REFERENCES

Ali, I. A., Namusonge, G.S., & Sakwa, M.M.(2016). Effect of Firm Managerial Risk Aversion on Corporate Hedging of Listed Firms in Nairobi Securities Exchange in Kenya. - *Journal of Business Management (IJRDO)*. Volume-2., 45-64. ISSN: 2455-6661

Basel. (2000). *Principles for the Management of Credit Risk.* Washington, D.C.: Basel Committee on Banking Supervision.

Brown, K., & Moles, P. (2014). *Credit Risk Management.* Edinburgh: Edinburgh Business School.

Coyle, B. (2000). Framework for Credit Risk Management;. *Chartered Institute of Bankers, United Kingdom*.

Creswell, J. W. (2014). *Research Design: Quantitative,Qualitative and Mixed Methods Approach.* California : SAGE Publications, Inc.

Flesch, A. (2009). Shareholder value creation using asset yield swap contracts. *Acta Oeconomica, 59(3).,*

George, D., & Mallery, M. (2010). *Spss windows step by step: A Simple Guide and Reference 17.0* Update (10ed). Boston: Pearson.

Joetta, C. (2007). *Credit Risk Management. How to avoid lending Disasters and maximize Earnings.* New York: McGraw-Hill.

Karen, A. (2005). *Essentials of Financial Risk Mangement.* Hoboken, New Jersey: John Wiley & Sons, Inc.

Kothari, C., & Garg, G., (2014). *Research Methodology.* New Age International (P) Ltd. Publishers. New Delhi

Laker, A. (2007). Go to Every Laker Home Game for College Credit, The Los Angeles. *Lakers Community Relations department, Los Angeles*.

Lapteva, M. N. (2009). Credit Risk Management in the Bank. *Vestnik Samara State University of Economics*, 37-38.

Makori, D. & Jangongo, A., (2013). Working Capital Management and Firm Profitability: Empirical Evidence from Manufacturing and Construction Firms Listed on Nairobi Securities Exchange in Kenya. *International Journal of Accounting and Taxation*, 1(1), 1-14.

Njeru, M. D., Njeru, A., Member, F., & Tirimba, O. I. (2015). Effect of Loan Repayment on Financial Performance of Deposit Taking SACCOs in Mount Kenya Region. *International Journal of Innovation and Applied Studies ISSN 2028-9324 Vol. 10.*

Omar, N., Namusonge, G., & Sakwa, M. M. (2017). Influence of Financing on the Growth of Family Businesses in Kenya. *Imperial Journal of Interdisciplinary Research (IJIR) Vol-3, Issue-2*, 57-72

Rusuli, C, Tasmin, R., Takala, J. & Norazlin, H., (2013). Factor Retention Decisions in Exploratory Factor Analysis Results: A Study Type Knowledge Management Process at Malaysian University Libraries. *Asian Social Science*, 9(15), 1911-2017.

Sandstorm A. (2009). Political Risk in Credit Evaluation. *World Bank Group*.

Schmukler, & Vesporani, S. L. (2006). Financial Globalization and debt Maturity in EmergingEconomies. *Journal of Development Economics 79.*, 183-207.

Theuri, Namusonge and Mugambi (2015). Strategic Management Determinants of Value ddition in the Sea Food Processing Sub-Chain: A Survey of Industrial Fish Processors in Kenya.*International Journal of Managerial Studies and Research (IJMSR)* Volume 2, Issue 6, PP 53-62 ISSN 2349-0330 (Print) & ISSN 2349-0349 (Online.

Yupitun, M., (2008). Agency Trade-offs in Family Firms: *Theoretical Model, Empirical Testing and Implications.* Unpublished Doctoral Dissertation, Bond University.