RELATIONSHIP BETWEEN CREDIT RISK MANAGEMENT AND FINANCIAL PERFORMANCE OF GRAIN MILLING FIRMS IN MOMBASA COUNTY

BY

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DECLARATION

This research project report is my original work and has not been presented in any University for award of any degree.

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This research project report has been submitted for examination with my approval as the University Supervisor.

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DEDICATION

To my mum and dad, and especially to my husband and two daughters for their support throughout this journey.

ABSTRACT

The study aimed to determine how credit risk management affects financial performance of grain milling firms in Mombasa County and was directed by the following three theories; Moral Hazard Theory, Credit Risk Theory and Liquidity Preference Theory. The study used a descriptive research design that granted the researcher to explain the characteristics of the research variables. The research focused on all the 8 grain milling firms in Mombasa County. Secondary data was collected from annual financial statements obtained from the finance and accounts managers and was recorded on a data collection sheet. The collected data was analyzed using the help of SPSS version 20. Descriptive statistics was used to describe the variables using: mean, standard deviation, skewness and kurtosis. Correlation analysis was used to determine the association of the variables in form of a correlation matrix. Multiple regressions was used to analyze the quantitative data. The descriptive statistics revealed that most grain milling firms were giving credit of more than 30 days that is considered the usual credit terms of most firms. The overdue accounts that was measured by percentage of bad debts indicated a highly skewed distribution curve. Liquidity as measured by quick ratio had an average figure of 1.2 which was higher than the ideal acid test of 1.1 while the liquidity of the firms followed a symmetrical distribution. The skewness results indicated that the firm sizes followed a symmetrical distribution. Kurtosis for all the variables followed a normal distribution. It was observed that there was a significant positive association between credit period and ROA. The relationship between credit period and ROE followed a weak positive correlation. Secondly, a significant positive correlation existed between ROE and liquidity as measured by the quick ratio. Liquidity and ROA also portrayed a significant positive correlation. Thirdly, there was a significant negative correlation between overdue accounts and ROA. This also corresponded to a significant negative correlation between overdue accounts and ROE. Lastly, we observed an insignificant positive correlation between size and ROA. This also corresponded to a significant positive correlation between overdue accounts and ROE. The regression coefficients indicated a positive significant relationship between ROA and credit period with a beta of 0.001. Overdue accounts, liquidity and size did not have a significant impact with ROA. The regression coefficients also postulated a positive significant impact between ROE and credit period with a beta of 0.001. There is also a significant negative relationship between ROE and overdue accounts. Size and liquidity did not have any significant relationship with ROE. The study concluded that having overdue accounts negatively impacts on the ROA and ROE of a company hence recommending managers to strive to enforce prompt payment of company debtors. The study also concluded that credit period as measured by average collection period significantly affected financial performance of grain milling firms in Mombasa County depicted by significant positive correlation between credit period and ROA therefore recommending that credit should be cautiously extended to its customers so as to increase its financial performance.

TABLE OF CONTENTS

LIST OF ABBREVIATION AND ACRONYMS

AR	Accounts Receivable
ACP	Average Collection Period
ANOVA	Analysis of Variance
CAR	Capital Adequacy Ratio
CAMEL	Capital Adequacy, Asset quality, Management, Earning, Liquidity
CRM	Credit Risk Management
EPZA	Export Processing Zone Authority
NCPB	National Cereals and Produce Board
NPLR	Non-Performing Loan Ratio
NPM	Net Profit Margin
ROA	Return on Asset
ROE	Return on Equity
ROS	Return on Shares
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

1.1 Background of Study

Risk management entails forecasting and evaluation of financial risks while identifying the procedures in place so as to minimize or eliminate their negative impact (Ikiao, 2015). Risk management is receiving growing attention within both the financial and non-financial organizations. Credit risk management involves structures of decision-making meant in reducing exposures on the credit asset classification and in the provisioning of loan losses (Tanui, Wanyoike & Ngahu, 2015). Businesses basically allow selling on credit to make the payment process easier and to encourage more sales and hence affecting its financial performance. Accounts receivable arise from the credit sales of a firm, and its proper management enables an improvement in profitability by financing during liquidity emergency (Ahmet, 2012).

This study is anchored on the following three theories: Moral Hazard Theory, Credit Risk Theory and Liquidity Preference Theory. Krugman (2009) explains in his Moral Hazard Theory how a risk can occur when one party's undertaking may result in a hindrance to the other party therefore causing a substantial financial exchange to a transaction. This explains how a grain milling firm may transact on unsafe credit which will result in a good rate of return if the speculation is in their favor but suffer a loss if things don't turn out as planned. Melton (1974) proposed the credit risk theory and he describes the theory as the event in which default originates from a change or evolution of asset. A foundation for measurement and control of credit risk is therefore provided in his theory. Cantor and Frank (1996) presume that the credit risk theory is the major risk model used in credit risk assessment. Default usually occurs when the value of a borrower's loan exceeds the value of his assets, consequently the need to exercise the need to default (Melton, 1974). Liquidity preference theory by Keynes (1936) demonstrates that investors prefer to hold cash, which is less risky, and would demand a premium return in investing the cash in securities with longer maturity compared to shorter maturity period securities. The risk and return element is demonstrated in this theory hence giving foundation and basis of charging interest on credit lending. The theories mentioned above relate the element of risk with financial returns. Sound

management and control of credit should be employed so as to diversify systematic risks and to encourage sustained growth.

Credit risk has become a serious concern for grain milling firms. Many grain-milling firms in Mombasa County are facing serious financial implications due to various credit frauds in the market. Some of these firms are dealing with significant cash flow problems mainly due to poor credit practices. According to Unga Group's (2017) annual report the years 2016 and 2017 have seen a negative impact on its business due to credit challenges facing the retail sector. This has caused them to withdraw from trading with Nakumatt Ltd that is one of their big clients so that they do not continue to increase the already existing debt level. Unga Group has suffered a loss of Shs. 151 million in goodwill as a result of credit issues faced with the retail sector and many other grain milling firms have also faced financial implications and reduced sales. Good CRM should therefore be put in place and should give room for periodical review so that it may incorporate changes according to any divergence in firms' strategy, and also to make sure that the firms competitively operate so that the credit and finance department also benefit from the policy (Eliots, 2009).

1.1.1 Credit Risk Management
According to the third International Conference on Credit Analysis and Risk Management (2015) credit is the provision of access to liquid assets today while promising a repayment at a future date. Habitually, credit ought to be the debt that one party owes another. Credit risk is the probability of loss due to borrower's inability to settle his debt in due time. CRM is simply the recognition, monitoring, measurement and risk control that result from possibility of default in settling a loan. According to Namusonge, Lyani and Sakwa (2016) credit risk management is an approach that is structured to uncertainties management through assessment of risk, coming up with practices mitigate and manage the risk using corporate resources. CRM consequently entail various processes that are internal as well as external to an organization with the aim of strategizing on the best ways to enhance liquidity while minimizing the adverse effects of issuing credit (Mutwiri, 2007).

The goals of credit risk management are to help a firm to minimize the amount of funds held up as AR and to decrease its irrecoverable debts (Mukherjee, 2014). Most

commonly, CRM entails, assessing the credit period, management of overdue accounts, assessing the firm's liquidity and determining the credit limits of a firm. In circumstances that a customer becomes difficult to follow up with, future sales are stopped until the debt is fully paid (Namusonge, Lyani & Sakwa, 2016).

1.1.2 Financial Performance

Warsame (2016) defines financial performance as the process of calculating the outcome of the practices and the activities of firm in form of monetary value and in accordance to the degree of which the financial objectives have been accomplished. Measuring a firm's performance is important for both the managers as well as the company shareholders. Actions occurring outside the non-monetary system are indicated in form of financial measures. It ascertains and quantifies past actions results that were taken by managers and presents them through various financial ratios (Bone, 2017).

Financial performance is measured by use of various ratios. However, the return on asset (ROA) is the most preferred profitability measure by investors (Fujo & Ali, 2016). This is because the higher the ROA, the higher the income that comes along with it compared to the cost of investment. A major disadvantage to the traditional financial measures is being too historical or backward looking. Investors are therefore gradually moving towards more dynamic measures of measuring financial performance, although the traditional measures are still predominantly used (Kalume, 2014).

1.1.3 Credit Risk Management and Financial Performance

Assessment of credit risk for identifying un-creditworthy customers from good ones has become increasingly important especially in the scope of financial risk management. This is due to the increasing incidences of credit fraud that has become a significant contributor to financial crisis. Hence, putting up procedures to prevent loss is very essential in determining profitability and also major component in risk reduction since loss reduction is an important financial interest of an organization (Yu, Li, Tang & Gao, 2016). Moreover, the credit policy of an organization affects its management quality, asset quality, liquidity and its earnings ability depending on how efficiently the policies are constructed and to what extent they are followed. Therefore, an ideal credit management policy should properly adjust for credit standards, credit terms and

collection efforts to ensure that the benefits of lending outweigh the costs (Kimondo, 2013).

A firms' credit policy defines a firm's financial health (Pandey, 1995). This could be interpreted as that good credit policies adopted by a firm will result in higher Return on investments shareholders' value and ultimately more financial stability of a firm (Nduku, 2016). It is therefore critical to determine the various credit risk management practices adopted by grain milling firms and establish the impact it has on their financial performance.

1.1.4 Grain Milling Firms in Mombasa County
Milling is defined as the process of germ and bran separation from the endosperm aimed at reducing the endosperm to form flour (Adewole, 2008). The process is achieved through a defined series of breaking, grinding and separating operations. According to The American Association of Cereal Chemists International whole grains should be that which is intact, cracked, ground or flaked caryopsis, whose main anatomical components that is the starch endosperm, bran and germ are present in the same proportions as they exist in the caryopsis that is intact (Adewole, 2008).

The grain milling industry dates back to the early 1920's, with the introduction of the Hammer Mill (Smale & Jayne, 2003). Ever since, the grain milling industry has been rapidly expanding. Today, the number of registered millers in Kenya is 103 as per the NCPB while the registered Grain Millers in Mombasa County are 12 in total, not to mention the various other emerging posho mills serving the population. This has been due to the increased demand of wheat and maize flour due to the growing of Kenyans and also due to the advancement of technology (NCPB, 2012). According to Frost & Sullivan (2015) grain-milling firms in Kenya are also faced with; high operating costs, foreign exchange fluctuation, difficult regulatory environment and lack of good infrastructure. Such factors impacts the firms to various selling approaches and compels them to sell on risky credit terms which eventually impacts their financial performance.

Mombasa County sees vast competition in the grain milling industry and some previously successful empires have collapsed due to liquidity issues. Small-scale posho mills majorly face inadequate capital as a challenge and could make around 130,000 in

profits annually (Robert, 2016). Being a vital sector in the country's economy, it is therefore quite essential to study about the grain milling industry in light of its financial performance.

1.2 Research Problem

In today's world of aggressive business trade, it has become very crucial for a firm to engage in the practice of selling products on credit. Internal credit management practices weaknesses can result in the failure of an organization while good credit management of an institution can improve its liquidity and overall profitability. When the credit risk management tactics of a firm are relaxed, the likelihood of bad debts arising significantly rises hence affecting the profitability of a firm. It is therefore crucial that a firm adequately manages how it administers its accounts receivables so that the benefit of extending credit outweighs its costs (Warsame, 2016).

The grain milling industry plays a great role in establishing food security in the country and has seen many scandals and received a lot of speculation in the Mombasa County especially in the recent years. During the past decade, a few grain milling firms in Mombasa County have closed down and some are in difficult financial positions due to poor retail credit terms and liquidity problems. Having weak CRM strategies has been the cause of many businesses closing down: Dunn (2009) revealed in his study that debtors account for 15% to 20% of manufacturing firms' assets. The trending financial disarray in the grain milling industry has therefore given the need to study the risks facing the firms in the industry (Warsame, 2016).

There exist mixed findings between the relationship of CRM and financial performance. Kargi (2011) researched on the effects of practices of managing credit risks on the profitability of commercial banks in Nigeria where he indicated a positive relationship between the two and used the panel model to determine the profit function measuring the profitability using ROA. Namusonge, Lyani and Sakwa (2016) sought to examine the influence of practices of credit risk assessment on SMEs' growth in Kakamega County and depicted a positive effect on financial performance. The credit risk policies in his study were measured by credit scoring model, expert system, internal rating system and internal rating. Wanjiru (2017) researched on the effect of CRM on MFI's financial performance in Kenya and concluded a negative effect amongst

performance and credit risk control. The research used capital adequacy and liquidity to measure the banks' financial performance.

From the previous studies on credit risk mentioned above, Capital Adequacy, Asset quality, Management, Earning, Liquidity (CAMEL) or its elements have been used as their independent variables in financial institution contexts for their research. This study is different since it has used the various credit risk policies as independent variables; credit period, overdue accounts and liquidity to consider the relationship between CRM and financial performance. Namusonge, Lyani and Sakwa (2016) similarly used the various CRM policies as independent variables in their research in the context of non-financial institutions that is SME's. The study used similar determinants but in the context of grain milling firms in Mombasa County. This study therefore attempts to fill the research gap by answering the question: What is the relationship between credit risk management and financial performance of grain milling firms in Mombasa County?

1.3 Research Objective
To determine the relationship between credit risk management and financial performance of grain milling firms in Mombasa County.

1.4 Value of the Study
The study will contribute to policy by ensuring food security in the country through knowledge of retail credit risk faced by grain-milling firms. According to National Cereals and Produce Board (NCPB) (2012) having sufficient grain in the country can equate to food security. Agricultural produce in Kenya is very perishable due to its generally hot and humid climate hence food processing is vital in ensuring food security. The NCPB having the mandate by the government to regulate and control processing of grains in Kenya, will gain from the outcome of the research as it may intervene as necessary to minimize the risks grain milling firms face while trading on credit especially to retail outlet chains.

The study will also contribute to theory by contributing to the wider realm of business and academic research. In academics, the study will contribute to the wider area of credit risk management and give hindsight on whether the credit risk theories are

supported or not. The study will also provide a basis for future studies by identifying research gaps that can be researched by academicians and other researchers in future.

 Lastly, the study will contribute to practice by helping managers of grain milling firms to comprehend on the policies they use in managing credit risk. The managers will learn appreciate and realize how concentrating their sales on the risky retail credit which could eventually result in liquidity problems and how to reduce such problems. They will also learn to apply the policies that will likely influence their key decisions and CRM decisions in the future.

CHAPTER TWO: LITERATURE REVIEW

2.1Introduction

This chapter covers literature review on credit risk management. It illustrates the theoretical foundation, the determinants of financial performance, empirical review, summary of literature review and the conceptual framework.

2.2 Theoretical Literature Review

This section analyzes some of the risk management theories studied by various scholars. The theories include the Portfolio Theory, Credit Risk Theory and Liquidity Preference Theory.

2.2.1 Moral Hazard Theory

The Moral Hazard Theory by Krugman (2009) explains how a risk can occur when one party's undertaking may result in a hindrance to the other party therefore causing a substantial financial change to a transaction. The theory further illustrates how information asymmetry contributes to moral hazard hence creating risk exposure and hence financial losses. It is implied by the problem of moral hazard that there is an incentive by the borrower to default unless retribution is in place that will hamper with his future credit transactions.

In grain milling firms, credit sales to various retail outlets is one of their dominant sales strategy therefore making trade debtors a large composition of their current assets (Warsame, 2016). This impact on their financial performance hence the firms must always make sure they can assess the level of wealth of the borrower before sealing a credit transaction or else the borrower will be sure to default. The moral hazard theory will therefore make the grain milling firms practice sound credit risk management to control the quality of credit issued based on the creditworthiness of the borrower.

2.2.2 Credit Risk Theory

The Credit Risk Theory was established by Melton (1974) where he describes the theory as the event in which default originates from a change or evolution of asset. The theory postulates that when economic conditions are attractive, a borrower will

intentionally default because default in itself acts as an embedded put option that has been offered to a borrower. The theory views the shares and bonds of a firm as contingent risks having a claim on the corporate assets. It is the first theory to present a significant connection between a statistical model describing economic-pricing model default. This is one of the first models to establish a link between default risk in a statistical model and in an economic market model whereas linking the two models is a major issue of credit risk modeling. A major weakness that lies in this model is that default can only occur when the bond matures. Later, many authors including Black and Cox (1976) and Vasicek (1984) presented structural models in which this restrictive where the unrealistic assumptions are relaxed (Lando, 2004).

Financial as well as trading firms can apply the credit risk management theory by taking advantage of opportunistic behavior presented by the potential debtors. This theory also influences the establishment of credit policies that define the credit limits and also the way credit portfolios are managed. Before credit is extended to a customer, collateral should be required and some variable interest rate charged depending on the individual terms agreed with the customer. It is therefore essential that a proper credit risk measurement be developed before extending credit by firms (Tanui, Wanyoike & Ngahu, 2015).

Credit risk theory is relevant to grain milling firms when they take advantage of the potential borrowers' opportunistic behaviors in credit transactions. This is evident when charging more when extending credit explained in terms of cash discount that is not available on credit sales. Moreover, many grain milling firms have client screening procedure, credit referencing and credit limits amongst other policies in place to minimize credit exposure.

2.2.3 Liquidity Preference Theory

The Liquidity Theory first established by John Keynes (1936) utilizes the 'demand for money' concept. The theory is founded on the principle that a premium is demanded by investors for longer maturity securities as they are deemed to have a greater risk. This is due to investors preferring to hold cash with is less risky; therefore, the more an investment is liquid, the readily sellable at its full value it becomes (Wessels, 2000).

Keynes (1936) explained the detention of money by the existence of three motives. These are speculative motive, precautionary motive and the transaction motive. The transaction motive denotes that people need to hold cash because it assures them basic day-to-day transactions when their incomes are not available. In this case, liquidity is determined by income meaning that the higher the income one has, the more one spends. The speculative motive states that investors retain liquidity in the hope they take advantage of falling bond prices at one time (Pasinetti, 1997). When there is a fall in interest rate, this leads to a rise in the liquidity demand to hold money until the interest rates increase (Reilly & Norton, 2006). The precautionary motive claims that people prefer to hold cash in order to meet unexpected needs that may call for unusual costs (Al- Khouri, 2011).

Any company issuing goods on credit is likely to encounter failure of the debtor to settle his debt as they fall due which will ultimately cause liquidity problems for the firm. Grain milling firms have therefore put up stringent measures in place, such as credit rating systems and risk rating measures to identify the credit risk they are exposed to from the borrower. Therefore, in light of the liquidity theory of credit, it would be prudent for a firm to minimize the levels of credit risks exposure by making sure the debtors are credit worthy before the sale is made (Rogers, 1997).

2.3 Determinants of Financial Performance

This section discusses the credit period, overdue accounts, liquidity and size as the main determinants of financial performance of grain milling firms.

2.3.1 Credit Period

Credit period is the maximum time allocated to a customer to settle his debt. This is usually measured by the number of days and where applicable includes a certain percentage discount offered for cash settlement. The credit period is in essence part of an organization's credit policy that is in essence a part of the overall CRM policy. If the period is too short, it is deemed to be stringent. If the period is too long, it is likewise said to be relaxed. There is therefore a tradeoff between the profitability and the additional cost of accounts receivable and the determining factor should be the cost (Home and Wachowicz 1998). Pike and Neale (1999) described factors that determine the credit period that include; the industry norms, customers' credit rating and the need

to offer credit as a marketing tool. High-risk customers are usually granted a short period, and the opposite applies for low risk customers.

2.3.2 Overdue Accounts

Overdue accounts are the number of unpaid invoices that have exceeded the agreed credit period as per company policy. Pike and Neale (1999) postulate that the more time it takes for a customer to settle his debt, the higher the chances of default and therefore results in a possible bad debt. Overdue accounts are usually measured by the percentage of bad debts compared with the credit sales. Overdue accounts analysis reveal that a most customers usually take more than 30 days beyond the given credit period to settle their accounts. Offering cash discounts may be costly, but its costs may sometimes outweigh the benefits of a credit transaction if the credit risk exposure is high (Home and Wachowicz 1998).

2.3.3 Liquidity

Liquidity refers to the readily available amounts of funds to a company at any given time, and the period with which the firm can settle its short-term liabilities using their current assets when they fall due (Alkhatib & Harasheh, 2012). The more free cash available for a firm, the more liquid they become hence making it favorable for them to incur expenditure in order to pursue more profitable investments.

All of the grain milling firms in Mombasa County has a specific percentage of wheat they import and they mainly finance their purchases using Letters of Credit. However, if their debt collection policies are weak and for some reason they are not settled by their debtors in due time, the firm will definitely face liquidity problems as they would not have enough liquid funds to settle their suppliers and may also default in servicing their obligations towards their financing banks (Alkhatib & Harasheh, 2012).

2.3.4 Size of the Firm

This factor has a direct impact on its performance as it may affect its goodwill, stakeholder responsiveness and customer loyalty (Foyeke, Odianonsen & Aanu, 2015). Holding other factors constant, the firm's size determines the level of risks its stakeholders are exposed to. A large company tends to have a bigger asset base to keep it going even in times of industry turmoil. This means than larger grain milling firms

have an added advantage in that they have a better bargaining power to its suppliers and financial institutions enabling more trading activities and they can also achieve a larger turnover than their relatively smaller competitors. There therefore exists a direct relation between a firm's size and its ability to generate profits from it.

2.4 Empirical Review

Chinan'ga (2015) performed a study how credit risk management impacted on profitability targeting 4 South Africa banks. ROE, NPLR and CAR were applied as the variables of the panel regression. The study identified a significant link amongst credit risk management and profitability. The study further concluded that size, operational expenses and growth of economy have a similar effect on South Africa banks.

Sabeza, Shukla and Bajpai (2015) conducted a case study on CRM Practices and Performance of Rwandan Commercial Banks. The researcher used a descriptive analytical research. The research results established a direct impact between CRM and commercial banks performance. The study was however limited to BPR ltd only, a bank in Rwanda. Moreover, the study failed to mention the other risks facing commercial banks' financial performance in Rwanda.

Alshatti (2015) conducted a research on effect of CRM on financial performance of Jordanian banks. Using ROA and ROE to measure financial performance, the research findings revealed that the CRM has a direct impact on the study subject. The research further concluded that the CRM indicators have significantly affected financial performance of the selected banks. Regression analysis was performed to establish the effect of CRM indicators to analyze the figures from the bank's annual reports.

Zou and Li (2014) evaluated the impact of CRM on Profitability of 47 largest European Banks between the years 2007 and 2012. The findings suggest a strong link between CAMEL and ROA. In addition, a negative and weak relationship was established between credit risk and ROA. The findings also found a positive relationship between the two variables.

Locally, Mbula, Memba and Njeru (2016) established a positive relationship between AR and the financial performance of venture capital funded by the government in

Kenya. Their study used descriptive design and inferential analysis. The study however was limited to those firms that were small in size and did not factor in other elements of working capital such as accounts payables period and inventory management.

Tanui, Wanyoike and Ngahu (2015) analyzed credit administration and scoring on performance in financial perspective in Nakuru County SACCOs. The study postulates a strong relationship between the credit scoring and the performance in light of a financial perspective of the SACCOs. A descriptive survey design was used and focused on credit managers and credit officers in the selected SACCO's. The researchers recommended that there should be an improvement in credit administration in SACCO's order to better on their financial performance. The study was however limited to SACCO's in Nakuru County.

Mumbi and Omagwa (2017) conducted a study on the impact of CRM on financial performance of selected Kenyan commercial bank. A descriptive study design was done utilizing probability sampling to derive his sample. Bank performance is not significantly related to the process used in debt recovery. Moreover, the process of loan appraisal, credit risk management and lending requirements were found to significantly affect bank performance. The researcher recommended that stringent measures be put in place to ensure that officers responsible should adhere to all the lending requirements but the researcher failed to focus on the challenges commercial banks face when implementing credit risk management strategies.

Namusonge, Lyani and Sakwa (2016) conducted a research on debtors risk management practices and growth of SME's the County of Kakamega and revealed that credit risk significantly and directly affects a firm's performance. The study used a casual research design and used stratified random sampling to collect its samples. The findings revealed that SME's faces considerable growth when good credit risk assessment practices are adopted. It was recommended that managers and owners to be trained and make them understand the different risk management techniques on how to properly manage them so as to see the firm's growth.

2.5 Summary of Literature Review and Research Gap

The importance of credit risk management cannot be over emphasized in an organization therefor warranting intensive research on CRM. The theories discussed in this chapter have introduced a very important element for financial firms, that is, the risk and return and risk diversification in a given portfolio of assets. In summary, the proponents of the theories discussed have mainly focused on the stock and bonds market. This leaves us with an unclear conclusion about the effect of CRM on Financial Performance in trading and manufacturing firms such as grain-milling companies.

The review of the empirical analysis indicates the importance of CRM in financial institutions. Most of the studies however lean towards the CAMEL model in measuring a firm's credit risk. Results from the various researches done also show that firms are increasingly adopting more credit management policies to control, mitigate or divert the risks involved in credit. There however exists a contextual gap as no studies have been done in the grain-milling sector in relation to CRM. Most of the studies have focused mainly on the Banking sector and little has been done on the non-banking sectors.

2.6 Conceptual Framework

The independent variables used are; credit period measured by average collection period; overdue accounts measured by percentage of bad debts; and liquidity measured by quick ratio. The dependent variable is the financial performance measured by ROA and ROE. The moderating variable size is measured by total assets.

Independent Variable   **Dependent Variable**

Credit Period
- Average Collection Period

Overdue Accounts
- Percentage of bad debts

Liquidity
- Quick Ratio

Financial Performance
- ROA
- ROE

Control Variable

Size
- Total Assets
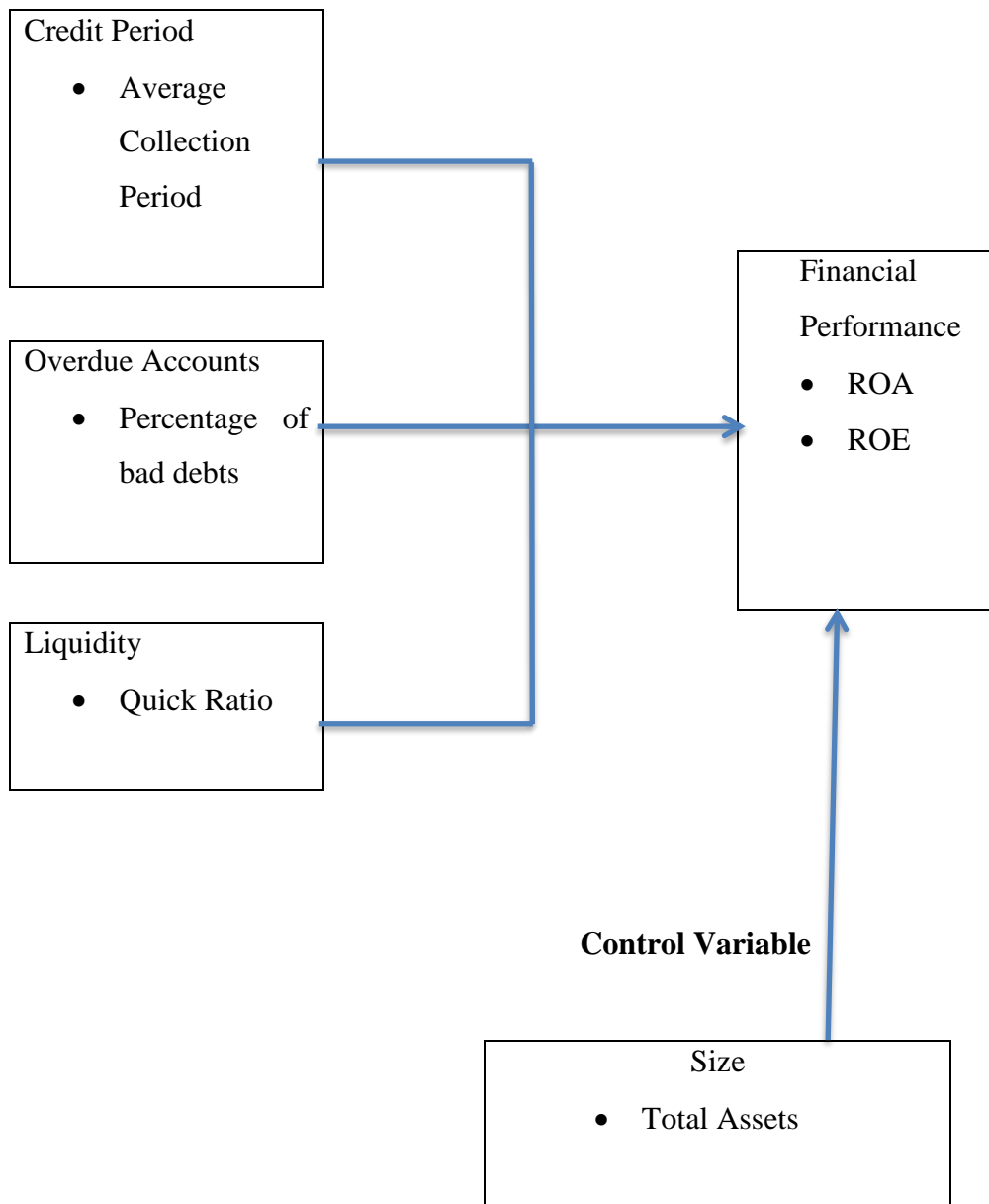
Figure 2.1: Conceptual framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the research design, population of study, data collection techniques, data analysis, analytical model and the diagnostic tests that will be used.

3.2 Research Design

A descriptive research design was used. It enables to demonstrate factors associated with certain types of behavior, occurrences, or, conditions (Burns & Grove, 2003). The research design was appropriate as the analysis involved a comprehensive study of credit risk management and investigated the relationship between the two study variables.

3.3 Population of Study

The target population was all grain milling firms in Mombasa County. This included a total of 8 firms in Mombasa County. The study covered the grain milling firms present in Mombasa between years 2013 and 2017 that were listed by the relevant regulatory authorities in charge of the subsector namely the NCPB and the Cereal Millers Association (CMA). The study was a census of the grain milling firms in Mombasa County.

3.4 Data Collection

The research used secondary data to extract information on the firms that was obtained through the financial statements for the past five years (2013-2017) of the firms to determine the financial performance of the firm. A data collection sheet containing all data collection points was given to the accounts manager of each of the grain milling firms under study. The requested information was derived from the income statement and the balance sheets of the grain milling firms. This data was used to evaluate the financial performance of the firms measured by ROA and ROE.

3.5 Data Analysis

The data collected was edited and checked for completeness, accuracy and consistency before any further analysis. The data collected was analyzed using correlation and regression analysis. A further elaboration of the regression model is as below.

3.5.1 Analytical Model

The regression equation was expressed as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where:

Y –   ROA and ROE

X_1 –   credit period

X_2 –   overdue accounts

X_3 –   liquidity

X_4 –   size of the firm

α –   intercept

e – error term representing other factors not in the model, and

β_1, β_2, β_3 and β_4- represent the slope of the regression lines or the coefficients of the regression model.

3.5.2 Operationalization of Variables

The variables were operationalized and measured as follows:

Variable	Measurement
Credit period (days) Nominal scale	• Average collection period = AR X 365/net sales
Overdue accounts (%) Ratio scale	• Percentage of bad debt = Bad debts / Credit sales
Liquidity (times) Interval scale	• Quick ratio = Current assets / current liabilities
Firms' size (Shs) Interval scale	• Log of Total assets
ROA (%) Ratio scale	• Net income/ Total Assets
ROE (%) Ratio scale	• Net income/ Shareholders' equity

Table 3.1: Operationalization and Measurement of Variables

3.5.3 Test of Significance

A regression analysis was performed to establish the relationship between CRM and financial performance. A two-tailed test was used to test the overall significance of the model while the Pearson's test was performed to denote the correlation co-efficient. Data distribution was tested using measures of skewness and kurtosis. The research used a confidence level of 95% to test the significance level of the variables.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND INTERPETATION

4.1 Introduction

This chapter presents the analysis of data that was collected from all 8 grain millings firms in operations in Mombasa County. It also discusses the findings of the relationship between credit risk management and financial performance of the study subjects.

4.2 Descriptive Statistics

Table 4.1 summarizes the descriptive statistics that comprises of the mean, Standard deviation, variance and kurtosis.

Table 4.1 Descriptive Statistics

	Mean	Std. Deviation	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
Average Credit Period	40.7	13.661	0.8916	0.4031	1.3107	0.7879
Size	6.3317	2.2251	0.1360	0.4031	-0.9453	0.7879
Overdue accounts	0.0662	0.0500	1.4432	0.4031	1.7467	0.7879
Liquidity	1.2233	0.5970	-0.3777	0.4031	-0.6405	0.7879
Return on Equity	0.0624	0.0476	-0.9471	0.4031	1.7648	0.7879
Return on Assets	0.0501	0.0408	-0.6023	0.4031	0.2096	0.7879

Source: Research (2018)

According to table 4.1, results indicate that the mean average collection period for the firms is 40.7 days with a standard deviation of 13.661 days. This points out that most grain milling firms are giving credit of more than 30 days that is considered the usual

credit terms of most firms. In terms of measures of distribution, measurement of skewness reveals that the credit period as measured by ACP is moderately skewed.

The amount of bad debts as a percentage of net credit sales averaged 6.6% with a deviation of 5%. This implies varied amounts of irrecoverable debts amongst companies in the grain milling sector. This could possibly mean that some firms have tighter collection policies in place compared to others. The overdue accounts that is measured by percentage of bad debts analysis indicates a highly skewed distribution curve. Kurtosis follows a normal distribution.

Liquidity as measured by quick ratio has an average figure of 1.2.which is higher than the ideal acid test of 1.1. This means that most of the grain-milling firms are able to settle their short-term obligations as they fall due. However, there is a std. deviation of 0.5970, signaling that some of the firms are facing difficulty in settling their short-term obligations while the liquidity of the firms follow a symmetrical distribution. Kurtosis follows a normal distribution and is therefore platykurtic.

Size as measured by natural log of total assets had meaned 6.3317 with a std. deviation of 2.2251. Skewness results from the table indicate that the firm sizes follow a symmetrical distribution. The statistic finally indicates that the Kurtosis follow a normal distribution and is therefore platykurtic.

The ROE and ROA have a mean value of 6.24% and 5.01%and having a standard deviation of 4.76% and 4.08% respectively. This indicates that on average the grain milling firms are maximizing on their assets and equity on generating revenue. The ROA and ROE follow a symmetrical distribution and Kurtosis follows a normal distribution.

4.3 Correlation Analysis

This part presents the correlation results between credit risk management and financial performance of grain milling firms in Mombasa County. The correlation matrix is summarized in table 4.2 below.

Table 4.2: Correlation Matrix

Variable		Return on Assets	Return on Equity
Credit Period	Pearson Correlation	.345*	0.271
	Sig. (2-tailed)	0.046	0.121
Overdue Accounts	Pearson Correlation	-.479	-.478
	Sig. (2-tailed)	0.004	0.004
Liquidity	Pearson Correlation	.571	.409*
	Sig. (2-tailed)	0.001	0.016
Size	Pearson Correlation	0.248	0.161
	Sig. (2-tailed)	0.158	0.364

*. Correlation is significant at 0.05 level (2-tailed).

Source: Research (2018)

It was observed from the study findings that there is a significant positive correlation between credit period and ROA since the p-value was 0.046 ($p < 0.05$) and correlation value of 0.345. The relationship between credit period and ROE follows a weak positive correlation with p value of 0.121 ($p > 0.05$) and correlation value of 0.271.

Secondly, a significant positive relationship exists between ROE and liquidity as measured by the quick ratio with a p-value of 0.016 ($p < 0.05$) and the correlation value was 0.409. Liquidity and ROA follow a significant positive correlation giving a p of 0.001 ($p < 0.05$). The correlation value from the analysis is 0.571.

Thirdly, there is a significantly negative correlation between overdue accounts and ROA with a p value of 0.004 ($p < 0.05$) and a correlation value of -0.479. This also corresponds to a significantly negative correlation between overdue accounts and ROE with a correlation value of -0.478 and a p value of 0.004 ($p<0.05$).

Lastly, we observed an insignificantly positive correlation between size and ROA with a p of 0.158 (p> 0.05) and a correlation value of 0.248. This also corresponds to a significantly positive correlation between overdue accounts and ROE with a correlation value of 0.364 and a p of 0.161 (p<0.05).

4.4 Regression Analysis

The regression results consists of the model summary, analysis of variance and the summary of coefficients of regression.

4.4.1 Model Summary

The regression model summary for financial performance indicators ROA and ROE are as per the tables 4.3 and 4.4 respectively.

Table 4.3 Model Summary- Dependent Variable (ROA)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.656[a]	0.4303	0.3517	0.0329

Source: Research (2018)

Predictors: (Constant), Log of Total Assets, Percentage of Bad

Debts, Average Collection Period, Quick Ratio

The model had a correlation value of 0.656, therefore indicating a fairly good linear relationship between the dependent variable ROA and the independent variables of study. The coefficient of determination is 0.4303 and adjusted is 0.3517. This means that 35.17% of the ROA is explained by the independent variables of study.

Table 4.4 Model Summary- Dependent Variable (ROE)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.564 [a]	0.3181	0.2240	0.0419

Source: Research (2018)

Predictors: (Constant), Log of Total Assets, Percentage of Bad

Debts, Average Collection Period, Quick Ratio

Similarly, the model had an 'R' value of 0.564, therefore indicating a fairly good linear association between ROE and the independent variables of study. The coefficient of determination is 0.3181 and adjusted is 0.2240. This suggests that 22.4% of the ROE is explained by the independent variables of study while 77.6% of ROE is explained by other factors outside this model.

4.4.2 Analysis of Variance

The analysis of variance (ANOVA) is indicated in table 4.4 below.

Table 4.5 ANOVA- Dependent Variable (ROA)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.024	4	0.006	5.491	.002 [b]
Residual	0.031	29	0.001		
Total	0.055	33			

The findings form ANOVA tend to indicate either the models strength or level of weakness. From the research results, for ROA the F test value was 5.491 with a significance of 0.002 at 0.05 significance level. Because p value is less than the confidence level, we can conclude that the regression model used was good.

Table 4.6 ANOVA- Dependent Variable (ROE)

	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.024	3	0.008	4.653	.002b
Residual	0.051	30	0.002		
Total	0.075	33			

Similarly, for ROE, the F test value was 3.386 with a significance of 0.002 at 5% significance level. Because p value is less than the confidence level, again we can conclude that the regression model used was good and there is a significant impact between the variables.

4.4.2 Regression Coefficients- Independent Variable (ROA)

Table 4.7 Regression Coefficients- Dependent Variable (ROA)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Tolerance	VIF
	B	Std. Error	Beta				
Constant	-0.005	0.028		-0.179	0.847		
Credit Period	0.001	0.001	0.299	1.000	0.047	0.940	1.063
Overdue Accounts	-0.216	0.159	-0.265	-1.358	0.185	0.515	1.943
Liquidity	0.023	0.014	0.330	1.643	0.129	0.441	2.269
Size	0.001	0.003	0.050	0.333	0.751	0.812	1.231

Source: Research (2018)

The data in table 4.7 above reveals a positive significant relationship between ROA and credit period with a beta of 0.001. There is an insignificant negative relationship between ROA and overdue accounts with Beta= -0.216. ROA and liquidity follows an insignificant positive relationship with a beta value of 0.023. Lastly, there is an insignificant positive relation between size and ROA with a beta value of 0.001. The VIF values are below 10 while the tolerance values are more than 0.1 therefore multicollinearity between the independent variables is not detected.

Table 4.8 Regression Coefficients- Dependent Variable (ROE)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Tolerance	Statistics VIF
	B	Std. Error	Beta				
Constant	0.040	0.028		1.429	0.275		
Credit Period	0.001	0.001	0.275	1.000	0.093	0.940	1.063
Overdue Accounts	-0.432	0.159	0.454	-2.717	0.042	0.515	1.943
Liquidity	0.004	0.018	0.044	0.222	0.850	0.441	2.269
Size	0.001	0.004	0.055	0.250	0.747	0.812	1.231

The data in table 4.8 postulates a positive significant impact between ROE and credit period with a beta of 0.001. There is also a significantly negative relationship between ROE and overdue accounts with Beta = -0.432. ROE and liquidity follows an insignificant positive relationship with a beta value of 0.018 while size has an insignificant positive relation with ROE with a beta value of 0.001. The VIF values are below 10 therefore multicollinearity between the independent variables is not detected. Hence, from the research analysis, the following regression equations were obtained:

$$ROA = -0.005 + 0.001X_1 - 0.216X_2 + 0.023X_3 + 0.001X_4$$

$$ROE = 0.04 + 0.001X_1 - 0.432X_2 + 004X_3 + 0.001X_4$$

4.5 Interpretation of Findings

The study found an insignificant negative relationship between ROA and the overdue accounts of Mombasa County grain milling firms. This means that one unit decrease in overdue accounts increases grain milling firms ROA by 0.216 units. Moreover, there is also a significant negative association between ROE and overdue accounts whereby a unit decrease in overdue accounts increases the firms ROA by 0.432 units hence an

inverse relationship between overdue accounts and financial performance of grain milling firms in Mombasa County.

The study follows a positive significant relationship between ROA and credit period indicating that a unit increase in credit period increases the firms ROA by 0.001 units making the relationship linear in nature though not significant. There is also a significant positive impact between ROE and credit period indicating that a unit increase in credit period increases the firms ROE by 0.001 units making the relationship linear.

In addition, the study postulated an insignificant positive relationship between ROA and liquidity. This means that a unit increase in liquidity increases grain milling firms ROA by 0.004. Similarly, ROE and liquidity follows an insignificant positive relationship corresponding to a unit increase in liquidity causing an increase in ROE by 0.004.

The study also postulated an insignificant positive relationship between ROA and size. This means that a unit increase in size increases grain milling firms ROA by 0.001. Similarly, ROE and size follows an insignificant positive relationship corresponding to a unit increase in size resulting in an increase in ROE by 0.001. The study results are consistent with those of Namusonge, Lyani and Sakwa (2016) conducted a research on accounts receivable policies of management of risk and growth of SME's in County of Kakamega and revealed that credit risk is a crucial factor that directly affects a firm's performance and that SME's faces considerable growth when good credit risk assessment practices are adopted.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the findings summary, conclusions, and recommendations of the research. The study pursued at ascertaining the effect of credit risk management on the financial performance of the grain milling firms in Mombasa County.

5.2 Summary

The analysis of credit period depicts that the mean average collection period for the firms was 40.7 days indicating that most grain milling firms were giving credit of more than 30 days that is considered the usual credit terms of most firms. In terms of measures of distribution, measurement of skewness revealed that the credit period of the firms as measured by ACP was moderately skewed. A significantly positive correlation existed between credit period and ROA. The relationship between credit period and ROA and ROE followed a weak positive correlation. There was also a positively significant impact between ROA and credit period and also a significantly positive impact between ROE and credit period.

The analysis of overdue accounts implied varied amounts of irrecoverable debts amongst companies in the grain-milling sector. This could possibly mean that some firms had tighter collection policies in place compared to others. There was a significant negative correlation between overdue accounts and ROA that also corresponded to a significantly negative correlation between overdue accounts and ROE. The study also found an insignificant negative relationship between ROA and the overdue accounts of Mombasa County grain milling firms and also a significant negative relationship between ROE and overdue accounts.

Liquidity as measured by quick ratio had an average figure of 1.2.which was higher than the ideal acid test of 1.1 indicating that some of the firms were facing difficulty in settling their short-term obligations. Liquidity analysis of the firms portrayed a negatively skewed and normal distribution. There was a significantly positive association between both ROA and ROE with liquidity. In addition, the study

postulated an insignificant positive relationship between both ROA and ROE with liquidity.

Size as measured by total assets log had a mean value of 6.3317 with a standard deviation of 2.2251. The skewness results from the table indicated that the firm sizes followed a symmetrical distribution. The statistic finally indicated that the Kurtosis followed a normal distribution and is therefore platykurtic. The study concluded an insignificant positive correlation between size and ROA. This also corresponded to a significantly positive correlation between overdue accounts and ROE. Additionally, there was an insignificant positive relationship between ROA and size and also an insignificant positive relationship between size and ROE.

5.3 Conclusion

The study concludes that credit period as measured by average collection period significantly affected financial performance of grain milling firms in Mombasa County. This was illustrated by a significant positive correlation between credit period and ROA. The study findings also revealed a significant negative relationship between return on assets and overdue accounts of Mombasa County grain milling firms. Also, a significant positive correlation between ROE and overdue accounts was observed. The study therefore postulates a linear positive relationship between credit period and financial performance, meaning that extending of credit sales indeed improves a firm's financial performance.

The study also revealed that liquidity did not greatly affect the financial performance of the firms an indicated by an insignificant positive relationship between ROA and liquidity. Similarly, ROE and liquidity followed an insignificant positive relationship therefore concluding the study that liquidity has an insignificantly positive relationship with the financial performance of grain milling firms in Mombasa County. The study deduced an insignificant positive correlation between size and ROA. This also corresponded to a significantly positive correlation between overdue accounts and ROE. Additionally, there was an insignificant positive relationship between ROA and size and also an insignificant positive relationship between size and ROE. This concludes that size was not a critical influencer of the financial performance of grain milling firms in Mombasa County.

5.4 Recommendations

The research concluded that having overdue accounts negatively impacts on the ROA and ROE of a company. Hence the study recommends that the managers of grain millings firms with an objective of maximizing the firm's assets and equity should strive to enforce prompt payment of company debtors. This could be done by implementing standard operating procedures in debt collection which would send email reminders, follow up with telephone reminders, pay visits to the overdue account owners and finally take legal action.

The study also recommends charging of interest on overdue accounts so as to discourage such moral hazards of debtors staying long overdue without settling their debts. The interest charged would therefore tend make up for the time value of money on the late settlements of their sales. This will also tend to improve the cashflow of the company.

The study also recommends that reasonable credit terms should be offered to the clients because credit sales seemed to increase the financial performance of a firm. Proper credit analysis should be done, implementing the use of the 3 C's in assessing credit application. This is the capital, character and capacity. These areas should satisfy the management before credit is issued.

5.5 Limitations of the Study

This study explored credit risk management and the implication it has on the grain milling firms' performance in financial perspective. Therefore, the findings of the study are limited to grain milling firms and not to other manufacturing firms in the regions. The study was also limited to the context of Mombasa County.

This study obtained data using a data collection and were issued to the accounts finance managers of the firms under study. The data was therefore based on the figures provided by the managers in charge and was secondary in nature as these were private companies and the financial statements not published for the public to access. The study findings are also generalizable to all 8 grain milling firms in Mombasa County and not to any one specific firm.

5.6 Suggestions for Further Research

This study focused on management of credit risk in Mombasa County grain milling firms and not for the entire manufacturing sector. The study thus recommends further research on management of credit risk on performance of manufacturing firms which will give a broader base of study.

The study also recommends additional research on other measures of credit risk in relation to the financial performance. Furthermore, this study recommends an evaluation of credit risk management using qualitative views obtained through interviews to establish an in-depth effect of CRM on grain milling firms' performance in financial perspective.

REFERENCES

Adewole, B. (2008). *Nigeria's Flour Milling Industry: An analyst's perspective* (1st ed.). Lagos: Leadcapital Ltd.

Ahmet, G. S., and Emin, H. C. (2012). Effects of working capital management on firm's performance. *International Journal of Economics and Financial Issues, 2*(4), 488-495.

Al-Khouri, R. (2011). Assessing the Risk and Performance of the GCC Banking Sector, *Australian Journal of Business and Management Research.65* (3), 72- 80.

Alkhatib, A., & Harasheh, M. (2012). Financial Performance of Palestinian Commercial Banks. *International Journal of Business and Social Science, 3*(3), 2 – 8.

Alshatti, A. S. (2015). The effect of credit risk management on financial performance of the Jordanian commercial banks. *Investment Management and Financial Innovations*, *12*(12) 34 - 56.

Bizuayehu, M. (2015). The Impact of Credit Risk on Financial Performance of Banks in Ethiopia. *Unpublished Thesis.* Addis Ababa University.

Black, Fischer, & Cox C. C. (1976). Valuing Corporate Securities: Some Effects of Bond Indenture Provisions, *Journal of Finance, 7* (31), 351-367.

Bowman, E. H. (1980). A Risk/Return Paradox for Strategic Management, *Sloan Management Review*, (21) 17 – 33.

Burns, N., & Grove, S. K. (2003). *Understanding nursing research* (4th ed.). Philadelphia: Saunders.

Bone, H. (2017). The effects of financial and non-financial performances towards the managerial performances with interpersonal trust as a mediation variable, *International Journal of Law and Management, 59* (6), 1190-1202.

Cantor, R., &Frank, P. (1996). Determinants and Impact of Sovereign Credit Ratings. *Economic Policy Review, 6* (2), 37-53.

Chinang'a ,F. (2015). The effect of credit risk management on the profitability of the major four South African Banks. *Unpublished MBA research project*, University of Johannesburg.

Eliots, V. (2009). The role of customers in financial profitability. *Journal of Management and Education, 11* (12), 2-5.

Fabozzi, F., Gupta, F., & Markowitz, H. (2002). The Legacy of Modern Portfolio Theory. *Journal of Investing, 11*(3), 7-22.

Foyeke, O. I., Odianonsen, I. F., & Aanu, O. S. (2015). Firm size and performance: A determinant of Corporate Governance Disclosure Practices of Nigerian Companies. *Journal of Accounting and auditing, 7* (8), 223-22.

Frost & Sullivan (2015). *Kenyan Agro Processing Growth Excellence Leadership Award,* Best Practices Research. City Centre, Nairobi.

Fujo, K. G. & Ali, A. I. (2016). Factors Affecting Financial Performance of Savings and Credit Societies in Kilifi County- A Case Study of Imarika Sacco. *The International Journal of Business & Management*, *4* (2), 448-469.

Home, C. J. & Wachowicz, J. M. (1998). *Fundamentals of Financial Management,* (4ᵗʰ ed.). New Jersey: Prentice Hall.

Ikiao, S. K. (2015). The Effect of Technology on Risk Management Practices by Fund Managers in Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Ikechukwu, O. I. & Nwakaego, D. A. (2015), "The Effect of Receivable Management on the Profitability of Building Materials/Chemical and Paint Manufacturing Firms In Nigeria," *Journal of Research in Humanities and Social Science, 3* (10), 1-6.

Kalume, P. K (2014). The Relationship Between Credit Risk Management Practices And Financial Performance Among Commercial Banks In Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Kargi, H. (2011). The Impact of Credit Risk Management Practices on the Profitability of Nigerian Banks. *Unpublished MBA Research Project,* University of Nairobi.

Kimondo, N. (2013). The Effect of Credit Policy on the Financial Performance of Deposit Taking Microfinance Institutions in Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Lando, D. (2004). Credit Risk Modeling: Theory and Applications. *Princeton Series in Finance*, *2* (1), 30-35.

Lintner, J. (1956). "Distribution of incomes of corporations among dividends, retained earnings, and taxes", *American Economic Review, 46*(2), 97-123.

Myles E. M, (2013). A Simplified Perspective Of The Markowitz. *Global Journal of Business Research, 7*(1), 6-10.

Mbula, K. J., Memba, S. F., & Njeru, A. (2016). "Effect of Accounts Receivable on Financial Performance of Firms Funded By Government Venture Capital in Kenya," *IOSR Journal of Economics and Finance, 7*(1)*,* 62-69.

Megginson, W. (1996). A historical overview of research in finance. *Journal of Finance*, *39*(2), 323-346.

Mumbi, W. M. & Omagwa, J. (2017). The Relationship Between Credit Risk Management and Financial Performance of Selected Kenyan Banks. *Unpublished MBA Research Project,* Kenyatta University.

Mutwiri, M. M. (2007). Credit Risk Management Practices by Oil Companies in Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Namusonge, G. S., Lyani, M. N., & Sakwa, M. (2016). Accounts Receivable Risk Management Practices and Growth of SMEs in Kakamega County, Kenya*, Expert Journal of Finance, 4*(1), 31-43.

Nduku, N. R. (2016). The Effect Of Credit Risk Management On Financial Performance Of Commercial Banks In Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Pandey, I.M (1995). *Financial Management,* (7th ed.). New Delhi: Vikas Publishers House.

Pasinetti, L. (1997). *The Marginal Efficiency of Capital and Investment,* (2nd ed.). London: Routledge.

Pike, R. & Neale, B. (1999). *Corporate Finance and Investment: Decisions and Strategies* (6th ed.). Harlow: Prentice Hall.

Raad, M. L. (2015). Credit Risk Management (CRM) Practices in Commercial Banks of 41 Bangladesh: A Study on Basic Bank Ltd. *International Journal of Economics, Finance and Management Sciences, 3*(2), 78-90.

Rahman, M. & Mazlan, A. (2014). Determinants of Financial Sustainability of Microfinance Institutions in Bangladesh. *International Journal of Economics and Finance*, *6*(9), 107-115.

Rogers, C. (1997). *Post Keynesian Monetary Theory and the Principle of Effective Demand in Financial Institutions,* (3rd ed.). Columbus, Ohio: Houghton Mifflin.

Sabeza, F., Shukla, J., & Bajpai, G. Case Study of Banque Populaire Rwanda 2011-2013. *International Journal of Social Science and Humanities, 3*(1), 7-15.

Sharpe, W.F. (1964), "Capital asset prices: a theory of market equilibrium under conditions of risk", *The Journal of Finance,19* (3), 425-442.

Smale, M. & Jayne, T. (2003). *Maize in Eastern and Southern Africa: "Seeds" of success in retrospect* (Discussion Paper No. 97). Washington, D.C.: International Food Policy Research Institute.

Stern, N. and Chew, S., (1987). *New Developments in International Finance* (1st ed.). Blackwell, Oxford : University of Southern California.

Tanui, J. K., Wanyoike, D. M. & Ngahu, S. (2015). Assessment of Credit Risk Management Practices on Financial Performance among Deposit Taking SACCOs in Nakuru East Sub County, Kenya. *International Journal in Management and Social Science, 3*(5), 602-610.

Vasicek, O. A., (1984), *Credit Valuation* (2nd ed.). California, USA: KMV Corporation.

Wanjiru, J. W. (2017). The Effect Of Credit Risk Control On Financial Performance Of Commercial Banks In Kenya. *Unpublished MBA Research Project,* University of Nairobi.

Warsame, M. (2016). Credit Risk Management Practices and Its Impact on Banks' Financial Performance: An Empirical Study of Islamic and Conventional Banks in Kenya. *Proceedings of Business and Social Sciences Research Conference, 11 – 13.*

Wessels, J. W. (2000). *Economics* (4th ed.). Hauppauge, NY: Barron's Educational Series.

Yu, L., Li, X., Tang, L., & Li Gao, L. (2016). An ELM-based Classification Algorithm with Optimal Cutoff Selection for Credit Assessment. *Filomat, 30*(15), 4027-4036.

Zou & Li F.Y. (2014). The impact of credit risk management on profitability of commercial banks in Europe. *Unpublished research project*, Umea School of Business and Economics.

APPENDICES

Appendix I: Grain Milling Firms in Mombasa County

	Name of Company
1.	Atta K Ltd
2.	Kitui Flour Mills
3.	Coast Maize Millers Ltd
4.	Maizena Millers Ltd
5.	Mombasa Maize Millers Ltd
6.	Bakhresa Grain Milling K Ltd
7.	TSS Grain Millers
8.	M B Salloo and Company

Source: Cereal Millers Association and NCPB 2018