INTERNAL CONTROLS AND CREDIT RISK IN COMMERCIAL BANKS LISTED AT NAIROBI SECURITIES EXCHANGE, KENYA

GABRIEL NJUGUNA MWICHIGI

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JUNE, 2019
DECLARATION

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This study project is presented with my permission as the supervisor at the University

Signature: ……………………………. Date: ……………………………..

Gerald Atheru

Department of Accounting and Finance

Kenyatta University
DEDICATION

For their unconditional assistance during my research, I dedicate this job to my entire family and relatives.
ACKNOWLEDGEMENT

First of all, I would like to recognize the assistance and guidance of my supervisor, Gerald Atheru, during this academic trip. My gratitude is to God for this research's strength and capacity. I am also thankful for the love, care and support from my family.
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# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AICPA</td>
<td>American Institute of Certified Public Accountants</td>
</tr>
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<td>BIS</td>
<td>Banks for International Settlement</td>
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<tr>
<td>BODs</td>
<td>Board of Directors</td>
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<td>CB</td>
<td>Central Bank</td>
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<td>CBK</td>
<td>Central Bank of Kenya</td>
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<tr>
<td>COSO</td>
<td>Committee on Sponsoring Organizations</td>
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<td>CR</td>
<td>Credit Risk</td>
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<tr>
<td>CRB</td>
<td>Credit Reference Bureau</td>
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<tr>
<td>CRM</td>
<td>Credit risk</td>
</tr>
<tr>
<td>EBA</td>
<td>European Banking Authority</td>
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<tr>
<td>GAO</td>
<td>General Accounting Office</td>
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<td>IC</td>
<td>Internal Controls</td>
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<td>ICS</td>
<td>Internal Control Systems</td>
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<td>LC</td>
<td>Letter of Credit</td>
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<td>MFBs</td>
<td>Microfinance Banks</td>
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<td>MRPs</td>
<td>Money Remittance Providers</td>
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<tr>
<td>NPLs</td>
<td>Non-Performing Loans</td>
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<td>SPSS</td>
<td>Statistical Package for Social Science</td>
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OPERATIONAL DEFINITION OF TERMS

Control Activities: are the bank’s operational performance, steps and strategies that administer management’s instructions for sustainability of the banking firms.

Control Environment: entails instituting structures, establishment of commitment to integrity as well as ethical values, demonstrating authority and responsibility, implementing oversight responsibilities and demonstrating proficiency.

Credit Risk: is the probability of risk posed by a borrower because of his incapacity to make required payments to the financier.

Credit risk: is the identification, comprehending the extent, observing and managing of bank’s risk emerging from the prospect of nonpayment of loans.

Internal Control: is an administrative tool which encompasses the overall undertakings in every department of an organization, at all levels with regard to communicating material weakness, safeguarding the assets, protecting stakeholder interest, ensuring compliance and transparency so as to attain set long term objectives of an organization.

Non-Performing Loans: are loans not yet paid by the debtors and expose banks to potential losses.

Risk Assessment: is a procedure and strategy whereby the association recognizes and examinations all dangers related with the capacity to accomplish its authoritative objectives.
ABSTRACT

Recently in the banking sectors, some banks have suffered severe losses, this has significantly gone up over the last 10 years due to non-performing loans, thus, necessitating stringent talks about internal control measures. Given the kind of operations they engage in, financial institutions and particularly, banks are exposed to serious risks including borrowers’ default. Banks have to do away with non-performing loans for them to grow and remain stable. Hence, this study’s main objective was to assess how internal controls relate to credit risk using Kenya’s commercial banks contained in the list of NSE. The study reviewed the agency theory, information theory as well as the contingency theory. The researcher adopted a technique that is descriptive in nature. The study conducted a census of the 11 banks trading at the Kenya securities. The target respondents were the risk managers, compliance and monitoring managers, internal auditors and credit managers of all these commercial banks which are based in the context of Nairobi. Data was collected from primary source with the use of questionnaires. Descriptive and inferential statistics was applied for analysis of data using the SPSS software. The findings were demonstrated using graphs and tables. From inferential analysis findings, the study concludes that on the overall all the internal control components studied had a significant influence on credit risk. The regression coefficients p-values were less than 0.05 indicating a significant relationship between the dependent and independent variables. However, the findings showed that the efficiency of the checks in the banks are not assured since the association value indicated a positive relationship yet it should be inverse, an indication of ineffective internal control systems. Hence the study recommends that: the management, policy makers and all banking industry players of commercial banks to institute structures that promote devotion to integrity and ethical conducts demonstrating authority and responsibility to enhance adequacy of banking activities; the banks’ board of directors and the administration team should also implement oversight responsibilities, demonstrating commitment to competence and enforcing accountability; every bank in Kenya should have proper quality control structures, effective audit programs and monitoring activities; enhancement of information systems, effective channels of communication and accurate reporting of operational, compliance, managerial and financial information in the commercial banks and finally, the credit policy and other guidelines be easily accessible to all lending officers; any updates or changes to the policy be communicated immediately so as to minimize credit risk exposed to the banks.
CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The intensifying uncertainties as well as increase of additional instruments has put a lot of pressure in the banking sector to find functioning internal strategies to change their institutions as insecurity becomes a reality (Gizaw, Kebede & Selvaraj, 2015). The financial sustainability of the financial institutions relies on the internal controls and risk management facets. In the current globalized market, the top leadership of the banks sought to possessa functioning risk management construct. This will alleviate the level of risks they are exposed to (Abdelkarim and Burbar, 2012).

It is therefore crucial to implement an internal control system designed to deal with known business risks that can hinder an organization in attaining its set goals. Rajkumar (2009) emphasizes the development of a functioning internal control system that easily identifies and assesses continually all kinds of risks, whether they are internal or external, that can hinder bank’s implementation of the objectives.

Gamage et al. (2014) point internal control as the development and execution process by the management and governance workforces to bring a surety about the realization of an organization’s goals in relation to consistency of monetary recording, effectiveness and efficiency of operations as well as compliance with applicable laws and regulations. Internal control is defined as the established policies, strategies, processes and structures controlled by directors, management and employed staff to maintain bank property, mitigate risks, and achieve the goals of the bank.

Credit risk refers to the probability that a borrower in either a bank or counterparty unwilling to pay in accordance with agreed terms (Basel Committee, 2003). It is the risk of default on a debt that may result from a borrower failing to make required payments (Brown & Moles, 2014). The risks of the lender in this regard include losing the loan and the anticipated interest, interference to cash flows, and escalated collection costs. The loss could be either fractional or complete (Abdelkarim & Burbar, 2012). Credit risk aims at optimizing on the bank’s risk-adjusted
rate of return by sustaining the exposure of credit risk within standard levels. According to Ibrabas (2015), any banking institution should control the credit risk inherent in the whole portfolio in addition to the risk in personal credits or transactions.

Majority of the banks worldwide have various sources of credit risk, such as, loans, banking book, trading book, both on and off the balance sheet. Whereby, loans are the main source of credit risk (Akwaa-Sekyil, 2016). Furthermore, banks are not only facing credit risks through loans but are also exposed to credit risk in other financial instruments including trades, foreign exchange transactions, interbank transactions, acceptances, bonds, trade financing, the settlement of transactions, financial futures, options, and in the extension of obligations to customers (Ibrabas, 2015).

Fukuda, Kasuya and Akashi (2009) reported that banks should consider reducing NPLs because it has tremendously affected the financial stability of the Japanese banking sector as a result of rising standard rates and due to the rising default rates and impairment to loan policy. In the Spanish banking industry, Saurina and Jimenez (2006) established that lenient credit terms and rapid credit expansion among other factors determines non-performing loans which are traceable to weak internal control structures. Haq, Faff, Seth and Mohanty (2014) assert that where the internal governance mechanisms are weak, the performance of any bank will be crippled by the credit risk which can be translated into other risks.

The European Banking Authority (2015) showed that Impairments on economic assets reduced from a weighted average of 26.6% to 17.5% overall working revenue. In addition, from 2009-2014, other ratios increased like impaired loans to total loans and advances from 5.1 to 6.6 and impaired financial assets to the overall assets from 1.6 to 2.0. This was a September 2015 report by Mesnard, Margerit, Power and Magnus (2016). Greece and Cyprus revealed an NPL ratio that exceeds 40%, whereby tough capital controls were applied. The aggregate NPL ratio for Hungary, Croatia, Bulgaria, Romania, Ireland, Italy, and Portugal ranged from 10% and 20%. Cho and Chung (2016) inspected the association between loan loss provision (credit risk estimate) and bank internal control weakness, this inspection showed that banks with poor internal controls combined with good policies gradually lowered their loan loss provisions.
Regionally, Akinyomi (2010) studied the influence internal control systems had on banks in Ghana, the finding revealed a direct association between risk assessment and internal controls. Tunji (2013) discovered most of the banks in Nigeria had ICS. However, the management undermined the ICS and as a result there were poor risk assessment measures. This study focused on quality ICs as remedy for challenges facing the banking sector in Nigeria. Kessey (2015) study’s concentrated on processes and challenges of credit risk management plan in the banking industry in Ghana, it showed that, banks face difficulty in managing credit risks especially the banks who do not implement the credit policy as indicated in the credit manual policy as well as internal controls. Further, Angella and Eno (2009) evaluated internal control systems in Uganda, their study focused on accessing the internal control tools that had earlier been approved by countries that are members of African Development Bank Group. They concluded that several elements of the internal control structure needed proper execution.

Consequently, it has become considerably the biggest in East Africa over the previous few years. The Kenyan banking sector is unique in terms of size and diversification compared to other East African countries (Gathaiya, 2017). However, the industry experienced growth difficulties due to elements such as non-performing loans and weaknesses in corporate governance despite the fact that Kenya has a range of financial institutions and markets.

Wanjohi (2014) points that the Kenyan banking sector have been faced with issues which occurs from poor lending rates, poor risk management policies, or not taking heed to gradual economic changes and other factors that cause decline in credit rating of a bank’s counterparties. Also, Central Bank Report (2016) indicates that the estimation of non-performing advances rose by 47.5% from Kshs. 117.2 billion in March 2015 up to 172.9 billion in March 2016. Subsequently, it increased ratio of gross NPLs to gross loans of 7.8% in March 2016 from 5.7% in March 2015. As a consequence, it declined the asset quality, estimated as a percentage of the net NPL to gross loans from 2.06% in March 2015 to 4.3% in March 2016. Central Bank Report (2016) also showed that by end of quarter 1, 2016, the banking sector’s average liquid assets was Kshs. 1023.2 billion whereas total short term liabilities were worth Kshs 2567.3 billion; translating liquidity ratio of 39.9% which was similar to that of quarter 1 of 2015.
Lending remains to be the main pillar in banking business, especially where capital markets are in the process of development; an example of such a nation is Kenya (Mwisho, 2011). However, in Kenya these lending activities are faced by many contentions. This is basically due to various complains by different business enterprises about high bank rates and their lack of funds. Similarly, Commercial Banks (CBs) are not left out for they face great losses; a result of issuing bad loans (Richard, 2012). However, Basel Committee on Banking Supervision (2010) emphasizes CBs to have an effective Credit Management (CRM) system and efficient internal check frameworks available to reduce loan losses.

1.1.1 Banks’ Internal Controls

The internal control structure has some elements such as processes and systems. These elements have to be created for validity purposes in given areas. Some of the areas include; internal policies, financial and operational, assets protection, regulations, efficiency and usefulness of setups and monitoring passivity of set laws. Internal control is an administrative tool which encompasses the overall undertakings in every department of an organization, at all levels with regard to communicating material weakness, safeguarding the assets, protecting stakeholder interest, ensuring compliance and transparency so as to attain set long term objectives of an organization (Akwaa-Sekyi & Moreno, 2016).

Internal controls as per the Standards of Auditing is an already developed process by the management and governance workforces, to bring a surety about the realization of an organization’s goals in relation to valid monetary report, usefulness of setups, efficiency and are in agreement with the set laws (Briciu, Dănescu, Dănescu and Prozan, 2014). Internal control systems can also be expressed as the complete control structure, financial and governed by management so as to carry out business sufficiently (Kumuthinidevi, 2016).

According to Dube (2005), the bank’s leadership instituted three common internal controls that depend on the information technology environment. These types include preventive, corrective and detective internal controls. The controls minimize information asymmetry, enhances transparency and guard shareowners against any manipulation (Salhi and Boujelbene, 2012). Usually, internal controls reduce the expense loss, anticipated loss and sudden losses (Abbas
and Iqbal, 2012). COSO framework (2013) shows the different dimensions of internal control, they comprise: data and correspondence, observing, control condition, control exercises, and hazard appraisal.

Globally, an in-depth assessment of various banks’ monetary reports revealed figures alleged to be loan losses (Akwaa-Sekyi and Moreno, 2016). This weakness was on top list of bank’s shortcomings as identified by (AICPA, 2006). Observing keenly sound and effective internal controls enhances investor confidence and boosts reputational capital to an organization. On the contrary, careless handling of credits in regard to how it is instituted, organized, funded, examined and monitored can create a problem and cause bank fall.

The Basel Committee (2010) listed major sources of internal control shortcomings to include: insufficient management oversight and accountability as well as absence of a quality control structure in a bank; lack of adequate identification and risk evaluation of some financial operations; inadequate required control structures and setups including, but not limited to isolation of obligations, endorsements, confirmations, compromises, and surveys of working execution; inadequate correspondence of information between a bank’s administration structures the executives, more so in the upward communication of problems as well as lack of or incapable review projects and checking exercises (BSBC, 2010).

1.1.2 Credit Risk

Management of credit risks involves the administrative actions undertaken to reduce credit worries through risk evaluation, management strategies and risk prevention by use of administrative resources (Maltritz and Molchanov, 2014). It is a process that entails identifying, capacity, observing and control occurring possibly from nonpayment of loans (Golin and Delhaize, 2013). Credit risk management is the alleviation of losses by a close check on suitability of a bank’s loan loss reserves and its capital. Credit risk on the other hand is the probability that a debtor will either default in some or all the set agreements of lending (Sobehart and Keenan, 2001). Credit risk is the threat posed by a borrower because of his incapacity to make required payments (Brown and Moles, 2014). It is the likelihood that the return attained from
lending especially if the credit was extended is different from the initial estimated return (Conford, 2010).

Aduda and Gitonga (2011) points that banks give loans to boost their revenues, to remain competitive in the market and also maintain good relationships with customers. They use different ways to offer credit to their clients, such as, overdrafts, loans, off balance sheet operations, like credit card facilities. Bank Supervision Annual Report (2011) listed the main sources of credit risk to include: sloppiness in credit assessment, inadequate institutional capacity, unsuitable credit policies, unstable interest rates, direct lending, lack of appropriate laws, poor credit assessment, poor management, massive licensing of banks, inappropriate loan underwriting, low capital and liquidity levels, absence of non-executive directors, poor lending practices, government interference and lack of adequate supervision by the central banks (Laker, 2013; Sandstorm, 2014).

1.1.3 Commercial Banks in Kenya

In 2014, the amount of local local private private commercial banks and local private banks was 24 and 27, respectively, according to the Bank Supervision Annual Report (2015); local private commercial bank dropped in number because of the liquidation of Dubai Bank and bankruptcy state of Imperial Bank (CBK, 2015). There was an increase in total net assets from 64.0% to 64.5% in 2014 instituted by local private commercial banks. The rise was attributed to more customers demand for loans prompting the banks to increase loans and fees which contribute the largest share of bank’s property. Further, it was noted that, in 2015 thirteen commercial banks owned by foreigners accounted for 30.9% of the industry’ resources in comparison to 31 per cent in 2014. The drop is as a result of a rise in total quantity sales by local private banks from 64% to 64.6% in 2014 and 2015 respectively (Bank Supervision Annual Report, 2015).

In Kenya, we have three types of commercial banks, namely: large banks, medium banks and small banks. A bank is classified to be large, medium or small using a composite index with these elements; net assets, customer deposits, capital and reserves, number of deposit accounts and number of loan accounts. If a bank has a composite index of 5% and above then it is termed
as a large bank. If the index is between 1% and 5% it is termed as a medium bank; while the index of a small bank is less than one per cent (CBK, 2015).

1.2 Statement of the Problem

Although the banking sector in Kenya has put in place internal controls, CBK Supervision Report (CBK, 2016), indicated that the level of non-performing loans has been increasing steadily in Kenya. The World Bank report (2017) shows an increase in the level of non-performing loans to total gross loans from 4.59 % in 2012 to 5.05%, 5.46, 5.99% and 7.82% in 2013, 2014, 2015 and 2016 respectively as shown in Table 1.1.

Table 1.1: Trend of Non-Performing Loans

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
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<tr>
<td>NPL %</td>
<td>4.59</td>
<td>5.05</td>
<td>5.46</td>
<td>5.99</td>
<td>7.82</td>
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Despite the implementation of credit risk strategies responsible for regulating lending risks; still banks are recording high levels of non-performing assets in their books (World Bank, 2017). Unsuitable credit policies as well as limited institutional capacity by Kenya’s financial sector has led to several of the banking institutions collapsing due to poor management of credit risks consequently increasing amounts of loans that were not being serviced (CBK, 2014). The poor management of threats associated with credit extension exposed the banks to non-performing loans which were subsequently written off hence decreasing the bank’s profitability (Kithinji, 2010). The main sources of credit risks in banks cited include, unsuitable credit policies, unstable interest rates, poor management, lack of appropriate laws, poor credit assessment, direct lending, massive licensing of banks, inappropriate loan underwriting, low capital and liquidity levels, absence of external directors, inappropriate credit practices, government involvement and lack of adequate oversight by the central banks limited institutional
capacity, inappropriate credit policies (Bank Supervision Annual Report, 2011; Laker, 2013; Sandstorm, 2014).

Several researches seeking to inspect the association between internal mechanisms and credit risk has been done mostly in developed economies. These include (Akwaa-Sekyi and Moreno, 2016; Caselli, Gatti and Querci, 2016; Mesnard, Margerit, Power and Magnus, 2016; Lakis and Giriunas, 2012; Bedard and Graham, 2011; Dedu and Chitan, 2013; Ji, Lu and Qu, 2015) among others. Regionally, Angella and Eno (2009) did a study on evaluation of internal control systems in Uganda which focused on assessing the approved measures of internal control by member countries of African Development Bank Group to enhance administration of Public sector project financing. According to their study some elements needed proper execution in the internal control structure.

The connection between authorized corporate governance and internal control schemes was checked by Olumbe (2012). He discovered a powerful positive association between corporate governance and internal control systems. Wainaina (2014) assessed Kenya Polytechnic University College's inner control function. He established that internal controls should show the potential of the general accounting, accurate monetary records of an organization. In addition they should detect and prevent any fraud.

Review of previous empirical studies inspecting factors that cause these credit risks have not dealt with specific components of internal control system on credit risks specifically in Kenya providing a contextual and geographical gap. The study therefore aimed to bridge these gaps by conducting a study on the association between internal controls and credit risks using the listed commercial banks in Nairobi Securities Exchange in Kenya.
1.3 **Objectives of the Study**

1.3.1 **General Objective**

General objective of this study was to examine the internal controls and credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya.

1.3.2 **Specific Objectives**

Specific objectives were as follows:

i. To establish the effect of control environment on credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya
ii. To determine the effect of risk assessment on credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya
iii. To examine the effect of control activities on credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya
iv. To assess whether information and communication affect credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya

1.4 **Research Questions**

The questions below apply in commercial banks listed in NSE

v. What is the effect of control environment and credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya?
vi. To what extent does risk assessment affect credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya?

vii. How do control activities affect credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya?
viii. What effect does information and communication have on credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya?

1.5 **Significance of the Study**
The study findings may be beneficial to the management of the banks as it will help them on understanding the importance of implementing internal controls so as to reduce/prevent credit risks.

The government and Central bank of Kenya may also benefit from the study as it will enable them to adopt appropriate policies and regulations so as to enable the banking sector to reduce their credit risks consequently improving their performance and survival.

For academicians, the managers as well as professionals related to the field in question will be provided with quality pool of resourceful knowledge to supplement their further studies in their future endeavors academically.

1.6 Scope of the Study

The research focuses on the effect of internal controls on credit risk in Kenyan commercial banks. The study targeted all the eleven registered and operational banks trading in the Kenya securities market. The target respondents were the risk managers, compliance and monitoring managers, internal auditors and credit manangers of all these banking institutions.

1.7 Limitations of the Study

The study relied on behavior whereby several respondents felt bothered; however a prior orientation by the researcher was of essence before the data collection tools were given to the respondents which helped avert this challenge. The scholar also clarified the purpose of the research to the respondents which allayed any fears that would have contributed to this problem.

The study collected the data using the questionnaires which was mainly primary data. Therefore substantial effort was made to guarantee data quality during both the development of the questionnaire as well as data collection. The probability of survey biases, however, could not be omitted completely therefore requiring other studies to be conducted which uses both the primary and secondary data so as to minimize the biasness and compare the findings.
This study was limited to all the listed commercial banks in Kenya hence the findings may not be similar in other financial institutions as well as other organizations in various sectors thus necessitating further studies to be repeated. Further, this study was conducted within a limited geographical area.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The first section of chapter two captures various theories that focus on internal controls and credit risk. The second section contains the empirical review of literature that relates with the topic under study and conceptual framework; finally, the chapter will delve on the summary and gaps that arise from this literature.

2.2 Theoretical Review

According to Kothari (2008), a mutual relation of facets and propositions that highlight the relationship between variables that aid in predicting an occurrence. Reviews of theories that are related to the study are presented in this subsection.

2.2.1 Agency Theory

The theory deals with agency relationships where one party is the owner and the other is the manager representing the agent. Jensen and Meckling (1976), referred agency concept as a deal under where a party or parties hire another party (the agent) to conduct certain services on their behalf and gives authority to that agent to make decisions (Aman & Nguyen, 2008). An agency problem occurs there is conflicting interests of the owner and the agent consequently leading to
difficulties and incurring of cost for monitoring agents (Eisenhardt, 1989). The problem of sharing risk on the other hand, occurs when the owner and the agent have diverse risk attitudes (Rezaee, 2007).

The agency theory states that the existing agency difficulties in an organization are the separation of ownership and control, which results in conflicts of interests and risk sharing. Letza, Kirkbride, Sun and Small (2008) asserts that the fundamental basis of the agency concept is; increase of the value of shareowners by managers depend on the manager’s will. In that, if his will is not interrupted then the value is increased. The board of directors helps balance the interests of company members. The corporate governance mechanism under the board of directors can be divided into internal governance, which entails internal controls, and external governance mechanism.

Agency theory is of essence to the study because it implies that the behavior of managers is influenced by the Board of Directors (BODs); these groups offer managers and shareowners security because they characterize the primary internal control structure. The set lending structures have been altered by managers leading banks to incur losses, in their attempt to facilitate credit supply so that they can meet customers demand. Hence, a suggestion is made by the agency theory that independent bodies should be brought on board, that monitor the manager’s personal interest to curb agency expenses. Further, they should mitigate such occurrences and enforce measures that will reduce such losses. This will ensure that an effective internal control structure is in place.

2.2.2 Information Theory

The theory stresses that debtors should be diligently screened by banks through credit assessment before their issued with loans (Derban, 2005). The theory of symmetric information demonstrates that collecting consistent details from potential borrowers is crucial in order to achieve a perfect screen. Adequate customer information, reviewing of loans and risk rating system allow the personnel behind it to recognize gradual changes in individual credits.
Evaluation of borrowers can be done using qualitative and quantitative approaches, although the use of qualitative model is subjective. Nonetheless, different features of borrowers measured using qualitative models can be allocated figures and the sum of the values compared to onset (Derban et al., 2005). This method lowers the cost of production, reduces independent decisions. Any adjustments in the foreseen dimension of credit advance misfortune will make the rating frameworks significant.

Brown (1998) concluded that quantitative models enables banking institutions to numerically ascertain characteristics that are essential in explaining risk of nonpayment, highlighting all bad loans applicants for disqualification, improving nonpayment risk price, evaluating the level of importance of the elements involved and calculating reserve required to meet post-loan losses. Default, crisis, and bank failure tend to cause the inaccuracy with which loans are launched, financed, serviced, and controlled. The relevance of this model to the analysis emphasizes strong internal controls especially relating to risk assessment and usefulness of operations, information validity and compliance with set standards that ensures reduction of credit risks and survival of banking institutions.

2.2.3 Contingency Theory

Chenhall (2003); Luft and Shields (2003) posits that every company has to select the most appropriate control system considering its contingency characteristics. Further, Donaldson (2001) emphasize that there exists a correlation between contingency characteristics and internal control structure; contingency features influence internal control structure. In addition, the author asserts that every stage of contingency facets has a fit of the level of the internal control structure. Due to the differences in organizational features, the internal control framework emphasizes the development of contingency characteristics that are different (Girinjnas, 2009). The factors that determine these differences include organization measure, culture, administration theory, destinations, operational condition (Girinjnas, 2009; Lakis, and Girinjnas, 2012). However, these factors vary from one organization to another based on their goals and objectives.
Basically, contingency theory approach explains the diversity of internal controls (IC) (Jokipii, 2010). The key fundamentals of contingency theory are chosen to be the backbone of IC framework of COSO and Basel. Hence the relevance of this model to the analysis provides an approach to research IC and its effectiveness in relation to credit risk. This is more so to the banking institutions which are facing constant dynamics in organization’s operations that requires new internal controls and also changing times in the business world.

2.3 Empirical Review

2.3.1 Control Environment

Any internal control structure that is strong requires a strong risk setup acting as a support factor (COSO, 2013). Typically, a control setup is the key foundation of any internal controls structure as it determines the route to be taken to manage, control and operate an organization (Oseifuah & Gyeke, 2013). A control setup visualizes the responsiveness of the board and governance of a bank, their outlook as well, inallocating sufficient level of importance to all bank’s operations. The control setup reveals the developments made by the bank’s board and governance team to safeguard and maintain appropriate internal control structure (Kamuthinidevi, 2016).

The control environment entails instituting structures, establishment of commitment to integrity as well as ethical values, demonstrating authority and responsibility, implementing oversight responsibilities, demonstrating commitment to competence and enforcing accountability (Akwaa-Sekyi and Moreno, 2016). The control setup provides an organizational culture that controls the perception of employees in an organization to be morally upright, have a good business conduct, observe and operate within the set organization practices and standards (Coca-Cola Amatil, 2011). In addition, the internal control environment includes the setting of an appropriate tone by the top management of any organization showing their appropriate outlook towards internal controls (COSO, 2013).

According to Kamuthinidevi (2016), the key elements of an effective control environment include: dedication to staff competence and skill enhancement; personnel integrity and ethical
values; effective policies and practices for human resources; unified contribution by the board team; a good organization structure that allows the management of the bank; positive influence of management's commitment; authority and responsibility that is clearly defined.

2.3.2 Risk Assessment

Risk assessment is a process and procedure whereby the organization identifies and analyses all risks associated with the ability to achieve its organizational goals (Cascarino & Van Esch, 2012). Risk assessment deals with all the processes and procedures that guide the board and management of a bank in evaluating the risk possibilities that might hinder the bank from executing its goals (Kamuthinidevi, 2016). This element is focused on determining exactly the kinds of risks that are present in an organization, ways of managing those risks identified and identification of the right controls are required to be established (Akwaa-Sekyi & Moreno, 2016).

Management in every institution; in order to alleviate risks as well as a monitoring activity, usually evaluates the possible risks and by so doing, the internal control system is operated and designed, (Hayes et al, 2010; Oseifuah and Gyeke, 2013). Banks’ risks are dynamic, they change because of different factors including: a changes in bank's operating environment; changes in information system; changes in a bank's growth rate and/or pattern; changes in staffing occurring due to reassignments or new employees; technology advancements; a launch of new brand; extension of business in different location; and/or change in monetary structure (Kamuthinidevi, 2016).

As a result of dynamic business environment and changes in regulatory context, the banking institutions implement methods that enable them to note, evaluate and control the risks, whether they are internal or external risks that could immensely affect the execution of the set goals (Dedu and Chitan, 2013). Although there are many factors that could lead to credit risks, banks should observe keenly all the internal controls so as to control and prevent risks that could be avoided
easily. Ellul and Yerramilli (2013) noted that financial institutions with quality internal control structures were in a position to stand strong in times of financial calamities.

Various studies that have been conducted have proved that risk assessment have a significant influence on credit risks, for instance, Akwaa-Sekyi and Moreno (2016) established that credit risk was heavily impacted by risk assessment among banks in Spain. Abiola and Oyewole (2013) in their study of the impact internal control system has on credit risk using some commercial banks in Nigeria indicated a strong relationship between risk assessment and credit risk. Similarly, Akinyomi (2010) did a similar study in the same country using banks and found that there was a significant association between risk assessment and fraud management.

In Kenya, Wanjohi (2014) established the percentage of employee related frauds was high, a clear indication of poor risk assessment strategies. This representative extortion unfolded using false documents, card trick, PC misrepresentation and redirection of funds to anticipation accounts, theft of assets and requesting undeserved payments. Sitienei (2012) reviewed highlights that triggered financial-field charging card extortion. He built up that these highlights had solid effect on charge card misrepresentation chance administration in the field of banking.

2.3.3 Control Activities

The activities in the control system are grouped into directive and prevention activities; they usually involve anticipating the possibility of problems occurring before they actually happen and instigating ways of mitigating (Ndenge et al., 2015). These activities of the control structure entail measures and procedures approved by the bank to help the bank personnel in executing practices that have been enacted by the board and management team (Kamuthinidevi, 2016). The overall activities in the control system help the administration to control possible risks that would affect bank’s services.

Control procedures are the orders, rules, methods, decisions, policies and procedures that ensure executive instructions are carried out in time and correctly (Jackson and Stent, 2014). These control activities include information processing, performance reviews, segregation of duties and
physical controls. These tasks and activities are implemented to ensure attainment of organizational goal and objectives as well as risk mitigation (Caselli, Gatti and Querci, 2016). Management establishes these controls over a variety of duties with the aim of mitigating risks or checks risks that could affect the institution from attaining its goals. The set measures that govern these control activities should also ensure that the team set up these activities does not analyze their work in these areas (Ndenge et al., 2015).

Oseifuah and Gyeke (2013) explain how a number of acceptable tools can help prevent and manage risk possibilities, the tools are either manual or automated. According to General Accounting Office (GAO) [1994], control procedures occur at all the stages and functions of the organization. They are part of a variety of activities including, authorizations, performing reviews, certifications, reconciliation, sanctions, security upkeep and the formation and sustenance of interrelated records that are considered as evidence of activities executed and their suitable documentation.

According to Abbas and Iqbal (2012), the control activities entail identifying and developing activities of a control system and implementing set measures in the entire organization. It pertains to holding cautionary measures and establishing effective risk levels through acceptable risk tolerance levels through strategies, drafts and balances. Akwaa-Sekyi and Moreno (2016) established that bank control activities significantly minimize credit risk among banks in Spain.

### 2.3.4 Information and Communication

This component reflects on the use of pertinent information and communication both internally and externally, to share owners using given intelligences (Abbas and Iqbal, 2012). Zhang, Zhou and Zhou (2007) emphasize that for banks to earn remarkable capital they have to avail valid and timely information to all their entities. Information and Communication as a key element of internal control capture and convey important and appropriate information in a way that allow the administration and employed personnel to perform their duties well.

Information and communication structure help the entire staff to comprehend their tasks in the control system, the connection between their roles and their liability (Kamuthinidevi, 2016).
Information systems generate reports concerning operations, monetary, and amenability that make it easy for the management and board to run the banks’ processes. The IT systems that facilitate these information systems must be physical and logically protected, hence ensuring that the information stored is not lost (Dedu and Chitan, 2013). Accounting systems entails the methodology used to identify, assemble, evaluate, group, record, and outline a bank’s dealings (Caselli, et al., 2016).

To ensure banks’ operational continuity there is need to implement proper back-up procedures. The banking organization ought to implement measures that will make sure that every detail and information is accessed by all players in the bank and in time. This will enable them to perform their duties, (Abbas and Iqbal, 2012). Sufficient facts and proficiency of communication are essential for effective working of internal control structure. From the perspective of a bank, information must be relevant, reliable, timely, accessible, and presented in a steady format for it to be useful (Caselli, et al., 2016).

An organization’s information ranges from internal to external information, that is, from financial, to operational, to compliance data, and finally to information about events and conditions. All this influence decision making (Dedu and Chitan, 2013). Internal data is component of a method of record-keeping that should include defined record-keeping processes. An essential element of a bank’s operations is the responsibility of the MIS covering the complete variety of its operations generally supplied by electronic and non-electronic means (Ndenge et al., 2015).

The executives basic leadership could be adversely influenced by untrustworthy or deluding data got from the frameworks that are ineffectively structured which could result to bank losses because information was not dependable or in full and because communication in the bank was ineffective (Wanjohi, 2014). Banking agencies need to be conscious of the mechanisms that operate internally relating to the electronic processing of data and the need for an appropriate audit path (Gamage, 2014). For example, financial data may be incorrectly transmitted; inaccurate data series from external sources may be used to assess economic positions; and tiny but high-risk operations may not be reflected in management reports.
Bank personnel when dealing with timely, dependable, and apprehensible information are able to manage, conduct, and manage their operations effectively especially relating to credit processing. The pressures on information and communication affect the quality and accuracy of information about the credit borrower. Therefore it should be timely, appropriate, accurate, current and accessible (Owusu et al., 2017). These principles are critical and should be taken into consideration when designing an internal control system not only in banks but also in other institutions. Without this, the parts of the control system internally cannot work as a whole. A system of information and communication has to be able to identify, capture, process, and report (Ofosu-Okyere, 2014).

2.3.5 Credit Risk

According to Mwengei (2013) credit risk management is an all-inclusive progressive structure that involves ascertaining the lending rates, and proceeds through set stages until the loan is paid. Credit risk is termed as the likelihood of loss due to a borrower’s failure to make payments on any type of debt. Aduda and Gitonga (2011) points that banks give loans to boost their revenues, to remain competitive in the market and also maintain good relationships with customers. They use different ways to offer credit to their clients, such as, overdrafts, loans, off balance sheet operations, like credit card facilities.

Mwengei (2013) points that financial institutions face extreme challenges in managing credit risk because of various factors which include; government controls resulting from political uncertainties and pressures, monetary limits, market disruptions, untimely production and time to time instability in the business field, production challenges which weaken the financial state of borrowers (Mwengei, 2013). Globally, most of the banks’ failure is attributed to their exposure to credit risk. Evidently, 80% plus of all banks balance sheet transmit to credit. NPLs make issues for the financial division's accounting report on the advantage side, and negatively affect the salary proclamation because of provisioning for credit misfortunes (Kumar and Tripathi, 2012).

A banking system that is loaded with NPLs causes a universal risk, where deposits are immensely affected, financial intermediation is limited, and consequently stock and growth (Istrate, Debasree and Weissburg, 2007). This occurrence could become worse, if it is combined with external
blows, or lack of political or legitimate back up (Tiwari, 2011). In addition, a crisis in a bank is identified if the ratio of NPLs to total unpaid loans is high (Alhassan, Kyereboah-Coleman and Andoh, 2014). Clearly, from the past studies most monetary crises in Saharan African nations and Sub-East Asia were heralded by high NPLs (Collins and Wanjau, 2011; Rono, Wachilonga and Simiyu, 2014; Vatansever and Hepsen, 2013; Latif, Kyereboah-Coleman and Andoh, 2014). In Kenya, Obiero (2002) revealed that top two causes of bank failures were poor management and credit risk respectively.

2.4 Summary and Gaps of Literature Review

The research concentrated on creating an association among Kenya's commercial banks listed on the Nairobi Securities Exchange between domestic checks and credit risk. The research identified the impacts of four main internal control aspects, including: set-up of controls, risk assessment, control operations, data and communication. From the literature, internal control is entails instituting structures, establishment of commitment to integrity as well as ethical values, demonstrating authority and responsibility, implementing oversight responsibilities, demonstrating commitment to competence and enforcing accountability (Akwaa-Sekyi and Moreno, 2016). Internal control systems were instituted by the Basel Committee on Banking Supervision to make the financial system effective and stable. Circumstantial sign of failures and recent financial crisis in banks shows us that credit is a major determinant of these failures. Credit risk is the possibility that a debtor or counter party will not meet the set requirements of a loan settlement. Credit risk is the risk of evasion on money borrowed that could result if the debtor fails to make payments as required, (Brown and Moles, 2014).

The rate of loans nonpayment is remarkable in the monetary services field. General Accounting Office (GAO) (1994) was concerned about an apparently unjust delivery for loan losses which cannot be validated. Two separate studies revealed that poor internal controls shakes loan loss provision (GAO, 1991; GAO, 1994). Altamuro and Beatty (2010) in their study only tackled the conservative attitude. They never studied the association between credit risk and internal controls.

Table 2.1: Summary and Gaps of the Literature

<table>
<thead>
<tr>
<th>Author and Topic</th>
<th>Findings</th>
<th>Gaps</th>
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20
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<tr>
<th>Year</th>
<th>Title</th>
<th>Summary</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Akwaa-Sekyi and Moreno</td>
<td>Impact of internal controls on credit risk among listed Spanish banks.</td>
<td>Established that credit risk was heavily impacted by risk assessment.</td>
<td>This study focused on Spanish banks only. It was also limited to components of internal controls in physical and conjectural fields.</td>
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<td>(2016)</td>
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<tr>
<td>Cho and Chung (2016)</td>
<td>The effect of commercial banks’ internal control weaknesses on loan-loss reserves and provisions.</td>
<td>This inspection showed that banks with poor internal controls combined with good policies gradually lowered their loan loss provisions.</td>
<td>The components of internal controls were not used in this study.</td>
</tr>
<tr>
<td>Wainaina (2014)</td>
<td>Evaluated the internal control function in Kenya polytechnic university college.</td>
<td>He established that internal controls should show the potential of the general accounting, accurate monetary records of an organization. In addition they should detect and prevent any fraud.</td>
<td>The study focused on internal control measures only. Also, the study focused in a Polytechnic which is outside the banking industry.</td>
</tr>
<tr>
<td>Tunji (2013)</td>
<td>This study focused on quality internal controls system as remedy for challenges facing the banking sector in Nigeria.</td>
<td>The study discovered that most of the banks in Nigeria had ICS.</td>
<td>The study did not show the specific effects on Credit risk. Also, the study focused only in Nigeria.</td>
</tr>
<tr>
<td>Jin, Kanagaretnam, Lobo</td>
<td>The Usefulness of internal control systems inspects whether the agency problem exist among European Union banks.</td>
<td>The study revealed that if banks comply with internal controls, the risk will be reduced, thus they will not fail.</td>
<td>The study focused on the general bank risk taking behavior.</td>
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<td>and Mathieu (2013)</td>
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<tr>
<td>Olumbe (2012)</td>
<td>Inspected the association between approved internal control systems and corporate governance.</td>
<td>He found that internal control systems and corporate governance have positively strong</td>
<td>The study dealt on the relationship between internal</td>
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<tr>
<td>Source</td>
<td>Description</td>
<td>Relationship</td>
<td>Concept</td>
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<tr>
<td>Bedard and Graham (2011)</td>
<td>Detection and Severity Classifications of Sarbanes-Oxley Section404 Internal Control Deficiencies.</td>
<td>Internal governance was used in place of internal controls. Internal governance was found to be a potential determinant of performance and risk reduction.</td>
<td>The authors used the internal controls of US SOX which are oriented to do financial reporting, which did not show how it affects credit risks</td>
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<tr>
<td>Akinyomi (2010)</td>
<td>Studied the influence internal control systems had on banks in Ghana</td>
<td>The finding revealed a strong positive association between risk assessment and internal controls.</td>
<td>The study did not focus on other internal control components</td>
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<tr>
<td>Olatunji (2009)</td>
<td>Effect of inward control framework on banking segment in Nigeria</td>
<td></td>
<td>The focal point of that paper was inside controls and extortion which is found under operational hazard</td>
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<tr>
<td>Angela and Eno (2009)</td>
<td>Evaluated interior control frameworks in Uganda. Their investigation concentrated on getting to the inside control devices that had earlier been approved by countries that are members of African Development Bank Group.</td>
<td>They concluded that several elements of the internal control structure needed proper execution.</td>
<td>The study did not relate internal control with Credit risk</td>
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Source: Researcher (2019)

### 2.3 Conceptual Framework

In this study the independent variable has been modelled by the framework on the basis of influx of counterfeit lubricants. These variables were borrowed from the study by Wanjau and Muthiani (2011) and the model is presented as follows:
2.4 Operationalization and Measurement of Variables

A questionnaire was used to collect data pertaining to aspects of internal controls and credit risks. All questionnaire items were measured using self-typing 5-point Likert scales. Internal control construct was gauged by using four sub-dimensions namely: information and communication, risk assessment, control activities and control environment, while each of them was measured with specific items. On the other hand, credit risk was gauged with the trend of NPLs of the banking institutions.
Control environment entails the perceptions, attitude, view and takes of the board and management as far as the essence of control activities is concerned. The control environment comprise of: structures formulation, establishment of commitment to integrity as well as ethical values, demonstration of authority and responsibility, implementing oversight responsibilities, demonstrating commitment to competence and enforcing accountability and also as effective human resource strategies and practices.

Risk assessment covers processes and procedure whereby the organization identifies and analyses all dangers related with the capacity to accomplish its hierarchical objectives. This thing was checked with things identifying with hazard recognizable proof, chance examination and hazard the board methodology.

Control activities include orders, rules, methods, decisions, procedures and policies that make sure executive instructions are carried out correctly and timely. This study measured this dimension with the following aspects: Information processing, segregation of duties, physical control and operational performance.

Information and communication component covers the use of pertinent information and communication both internally and externally, to shareowners using given intelligences. It was operationalized with factors including accounting system, information system and communication system.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains various sections, namely; a depiction of the study design, target population, sample design, data collection methods, research procedures and data analysis and presentation.

3.2 Research Design

Cooper and Schindler (2011) define a research design as the approach adopted in a study and the plan by which the approach is to be conducted. A cross sectional research design was used in this study. Cross sectional research focuses on finding the relationships between variables one at a time. Hence this study used cross sectional research design because the study sought to inspect the association between internal controls and credit risk.

3.3 Target Population

The target population in research is the specific population about which information is desired. In this case the target population comprised all the eleven commercial banks listed in Nairobi
Securities Exchange (NSE Price List, 2017). The target respondents included the risk managers, compliance and monitoring managers, internal auditors and credit managers from all these eleven banks totaling these respondents to 44. These respondents were chosen from the population since they are knowledgeable with the topic under research.

### 3.4 Sampling Procedure

Sampling is regarded as a means of selecting the appropriate number of units from a defined population (Kothari, 2012), these units represents people or organizations. So that by analyzing the findings of the sample it may be uniformly generalized to represent the entire intended population (Trochim, 2005).

#### 3.4.1 Sampling Frame

The sampling frame is the list of the final sampling units, for example people, organizations (Yin, 2004). This study’s sampling frame was based on the NSE Price List of 2017, which stood at 11.

#### 3.4.2 Sampling Technique

The technique that was applied to select respondents was purposive sampling technique. This was because the researcher chose the respondents who were appropriate for the study. According to Marre (2007) purposive sampling is a sampling technique whereby a researcher targets a sample from a population who are most likely to provide best information to satisfy the research study’s goal. The study conducted used a census survey where all the units under study were covered. The research performed a census of all 11 listed commercial banks in Kenya in accordance with the 2017 NSE Price List. The research then through the use of purposeful sampling technique to select the participants based on their perception as to who was considered appropriate for the research. Therefore, in each bank, the investigator chosen four executives based in their headquarters who were able to provide the suitable and accurate data linked to the subject. The executives chosen included risk managers, compliance and tracking managers, internal auditors and loan managers, making the total number of participants 44.
3.5 Data Collection Instruments

Questionnaires were the main instruments used to collect raw/primary data. They are ideal since they are easy to administer and does not consume as lot of time to administer and to be filled (Mugenda & Mugenda, 2003). A semi-structured questionnaire comprising of two sections was used, Section I and Section II. Section I entailed profile of the respondents while Section II consisted of items relating to the area of study which included the aspects of both the independent variables as well as the dependent variable hence ensuring that only relevant information was collected. In Section II, the respondents were given statements to which they indicated their level of agreement or disagreements. Five-point scale was provided to respondents whereby 5 indicated strongly agreed and 1 which was the lowest showed strongly disagreed.

3.5.1 Validity of Research Instrument

This is the adequacy of the research instruments for instance, the researcher needs to have sufficient questions in the written task so as to collect the required data for analysis that can be used to draw conclusion. The key validity goal is to make sure that each item or question of the questionnaire hits its set measure (Kothari, 2012). The research thoroughly analyzed the literature that gave forth a list of entities/units representing each variable in the study whereby the supervisor then assessed and approved the final list. This ensured the consistency of the questionnaire.

3.5.2 Reliability of Research Instrument

Relevance and correctness of the instruments used is its reliability (Mugenda & Mugenda, 2003). This study used Cronbach’s Alpha test to check for this consistency of the data. Coefficient alpha value ranges from 0 to 1. 0 signifies that there is an internal variation within responses gathered from respondents while 1 denotes complete consistency of the responses. A score over 0.70 is said to be appropriate for a study. Therefore, this study applied 0.70 to determine the reliability of items (Davidson, 1996).
3.6 Data Collection Procedures

A pre-test was carried out on a random basis on 10 questionnaires before the actual administration. The researcher agreed with the respondents on the convenient time to collect the questionnaires. Attached to the questionnaire was a letter of introduction which highlighted the aim of the study. Phone calls were also made to follow up on the respondents having the questionnaires. This enabled the researcher to answer questions that arose from different respondents.

3.7 Data Analysis and Presentation

The study used data that was measured qualitatively as well as the one that was measured in terms of the content (quantitatively) which prior to analysis, was sorted to ensure completeness. Coding of the responses was done, in order to enable the data to be recorded into SPSS software. SPSS variant 20 was used to draw inferential and descriptive data. From the result mean from the, frequencies and standard deviation will be drawn. The Likert scale aided in the presentation of data, whereby tables, diagram and charts were used to enhance presentation of the data. Content analysis using prose form presented the qualitative data collected in the open-ended questionnaire.

Moreover, multiple regression analyzes were used to show how the research variables relate to each other using the model: \(Y=\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon\)

Where:
- \(\beta_0\) = is a constant, taken as the dependent variable when all the independent variables are 0
- \(\beta_1 - \beta_4\) = Regression coefficients of independent variables
- \(\epsilon\) = Error of prediction
- \(X_1\) = Control Environment
- \(X_2\) = Risk Assessment
- \(X_3\) = Control Activities
\[ X_4 = \text{Information and Communication} \]
\[ Y = \text{Credit Risk (Dependent Variable)} \]

### 3.8 Operationalization and Measurement of Study Variables

<table>
<thead>
<tr>
<th>Table 3.1: Operationalization of Study Variables</th>
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<tr>
<td><strong>Variables</strong></td>
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<tr>
<td><strong>Dependent Variable</strong></td>
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<td>Credit Risk</td>
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<td><strong>Independent Variables</strong></td>
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<td>Control Environment</td>
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<td>Risk Assessment</td>
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<td>Control Activities</td>
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<td>Information and communication</td>
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**Source:** Researcher (2019)

### 3.9 Ethical Considerations

The author of this research obtained a permit document from Kenyatta University to conduct the study. Secondly, the researcher ensured the data gathered from the respondents was safe for confidentiality purpose. In order to hide the respondents’ identity they were not required to indicate their names on the questionnaire. Finally, request letter to be part of the study in terms of participation was addressed to the respondents. This not only showed courtesy to the respondents but it served as a way of ensuring consent of taking part in the study.
CHAPTER FOUR
RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents an analysis, presentation and interpretation of the results obtained from the study data. The study obtained data from the risk managers, compliance and monitoring managers, internal auditors and credit managers of the 11 commercial banks listed at Nairobi Securities Exchange in Kenya. The data collected from the respondents was analyzed using the Statistical Package for Social Science (SPSS) version 20.0 for Windows. The results were discussed as per the study objectives and presented using tables and figures.

4.1.1 Reliability Test

The collected data was pilot tested to ascertain that the items included in the questionnaire were valid and reliable. To ensure validity of the tool, the data was screened and cleaned. On the other hand, reliability of the parameters was checked using Cronbach’s Alpha. It establishes the internal consistency of parameters in a data collection tool to estimate their level of dependability. Reliability results of the 33 questionnaires returned are shown in Table 4.1.

Table 4.1: Reliability Test

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Cronbach’s Alpha (α)</th>
<th>Comment</th>
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<tr>
<td>Control Environment</td>
<td>0.891</td>
<td>Good</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>0.791</td>
<td>Acceptable</td>
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</tbody>
</table>
Table 4.1 indicates that all the constructs had a Cronbach’s Alpha value of 0.7 and above indicating high reliability of research instrument. As such, the researcher concluded that the items used in the study were reliable. None of the items was dropped.

### 4.2 Questionnaires Return Rate

To increase the return rate, the questionnaires were individually distributed. Figure 4.1 indicates the return rate.
Out of the forty (44) questionnaires distributed, thirty three (33) questionnaires were returned which were appropriately filled. This represented a return rate of 75%, which was considered adequate to guarantee reliability of the results. A return rate of more than 70% is regarded as sufficient for analysis (Mugenda and Mugenda, 2003). The inability of the researcher to collect the remaining 25% was due to unavoidable circumstances such as absence of the respondents.

**Demographic Factors**

The demographic factors of the sample respondents assessed included: respondents’ sex, their age bracket, level of education, work duration and current position. The outcomes are discussed below.
4.3.1 Respondents’ Gender

The respondents were required to indicate their gender. This was to determine which gender group was more involved in the study and whether there was gender parity in the respondents who answered the questionnaire. Figure 4.2 illustrates their distribution.

Figure 4.2: Respondents’ Gender

![Gender Distribution Pie Chart]

Source: Research Data (2019)

The results in Figure 4.2 reveal that out of 33 respondents who responded, 18 (54%) were men while 15 (46%) were women. This indicated that there are more male managers compared to female in the banks. Nonetheless, the 1/3 gender rule was observed.

4.3.2 Respondents’ Age

Results of the respondents’ age in presented in Figure 4.3 below.
Figure 4.3: AgeResults

Source: Research Data (2019)

Based on results in Figure 4.3, 38% of the respondents were aged 41-45 years. This was followed by those in the age bracket of 36-40 years (28%); 31-35 years were 18%, in the bracket of 46 years and above were 9%; lastly the lowest were 26-30 years representing 7% of the respondents. The age brackets above showed that majority of the managers are mature adults with enough professional experience in their areas of expertise hence can provide reliable information regarding the study subject.

4.3.3 Duration of Work

The results for the duration of time is as presented in Figure 4.4.
The results indicated that 39% of the managers have worked for 7-9 years; 28% have worked for over 12 years; 22% have worked for 10-12 years; 7% and 4% have worked for 4-6 years and 1-3 years respectively have worked in their various banks. According to Braxton (2008), people with more experience provide more reliable information. From the findings, 89% of those involved in the research had a work experience of over six years. This means that they had proper understanding of the technical issues relating to internal controls and credit risks in banks.

4.3.4 Highest Education Level

Another essential demographic aspect was education level of the participants. The results are presented below.
The findings in Figure 4.5 showed that 50% of the employees had masters; 43% had done up to bachelors level while 7% had attained doctorate at the time of the study. These showed that these respondents were knowledgeable academically and properly understood the study area therefore provided reliable information.

4.3.5 Category Positions

Results on the positions of the respondents are presented in Figure 4.6.
Figure 4.6: Category Positions

Source: Research Data (2019)

Figure 4.6 indicate that the majority of the respondents who filled and returned the questionnaires were the credit managers representing 32%. This was followed by the internal auditors who were at 25%; risk managers at 24% and finally the compliance and monitoring managers at 19%.

4.4 Descriptive Analysis

The main aim of the study was to establish the association between internal controls and credit risk in Commercial Banks Listed at the NSE in Kenya. This section was important as it provided the summaries of the responses that provide easy interpretation of the findings. The study therefore used a 5 point Likert scale on the statements of each construct. It enabled respondents to rate their level of agreement or disagreement with the items used to measure the constructs. The following five point were applied in this study: Strongly Disagree, 1-1.8; Disagree, 1.8-2.6; Neutral, 2.6-3.4; Agree, 3.4-4.2; and Strongly Agree, 4.2-5.0.

The research also applied the average score to determine the number of responses from each statement and standard deviation to estimate the variation of the responses from the mean (Kothari, 2012). A standard deviation exceeding one implies that the participants gave varying answers to a particular question or item. On the other end, a standard deviation of less than one
implies that the participants gave almost the same answers to a particular question (Saunders, 2009).

4.4.1 Analysis of Control Environment

To understand the association between control environment, as a dimension of internal controls on credit risks in commercial banks listed at NSE, the participants were required to express their agreement or disagreement with the items relating to control environment.

Table 4.2: Control Environment

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The bank's board intermittently survey arrangements and systems to guarantee that legitimate controls have been initiated</td>
<td>4.244</td>
<td>.6862</td>
</tr>
<tr>
<td>2. There is a framework set up to screen consistence with arrangements and strategies and to answer to the board examples of rebelliousness in the bank</td>
<td>4.377</td>
<td>.7005</td>
</tr>
<tr>
<td>3. Our bank has sufficient data about the credit chance appraisal process</td>
<td>4.321</td>
<td>.7228</td>
</tr>
<tr>
<td>4. Our bank's board and the executives are focused on guaranteeing appropriate inside powers over bank's activities and credit control</td>
<td>4.285</td>
<td>.7127</td>
</tr>
<tr>
<td>5. The bank has set codes of conduct or good strategies that aides workers as to credit chance</td>
<td>4.214</td>
<td>.6857</td>
</tr>
<tr>
<td>6. The bank have adequate faculty who are skillful and proficient to deal with the credit dangers</td>
<td>4.263</td>
<td>.6455</td>
</tr>
<tr>
<td>7. The bank have interior or potentially outside inspectors who survey the</td>
<td>4.250</td>
<td>.5182</td>
</tr>
</tbody>
</table>
ampleness of the bank’s inside control frameworks intermittently

| 8. There are obviously characterized specialist and obligations of credit workforce in our bank | 4.274 | .5681 |

Source: Analysis Data (2019)

Overall, the participants strongly concurred with most of the items as indicated by average response ranging from between 4.2 and 4.4 and low variance in the data as shown by the standard deviation which was less than 1. The findings indicate that the commercial banks in Kenya have a framework set up to screen consistence with strategies and techniques and to answer to the board occurrences of resistance in their different bank as indicated by a mean of 4.377. The respondents also strongly agreed that majority of their banks have adequate information about the credit risk assessment process (M=4.321); bank’s board and management are committed to ensuring proper internal controls over bank’s operations and credit control (M=4.285); and that there are clearly defined authority and responsibilities of credit personnel in the banks (M=4.274).

The respondents also strongly agreed that these banks have enough staff who are skillful to manage the credit risks (M=4.263); that majority of these banks have internal and/or external auditors who examines the sufficiency of the bank’s internal control systems occasionally (M=4.250). These findings correspond with the proposal of Akwaa-Sekyi and Moreno (2016) who emphasize that the control environment entails instituting structures, establishment of commitment to integrity as well as ethical values, demonstrating authority and responsibility, implementing oversight responsibilities, exhibiting devotion to competence and promoting transparency.

In addition, the respondents agreed that the bank’s board occasionally examines the policies and guidelines for the purpose of enhancing controls and that these selected banks have set codes of behaviour or moral policies that guides employees in regard to credit risk (m=4.244, M=4.214 respectively). These findings agrees with Thornton (2012) views who asserts that, the control environment in tandem with monitoring activities reinforces the whole system of control in an
organization and emphasize that the board and senior executives should put up right attitude at the top so as to enhance internal controls.

### 4.4.2 Analysis of Risk Assessment

The research aimed at determining the association between risk assessment and credit risks in commercial banks listed at Nairobi Securities Exchange in Kenya. The findings are summarized in Table 4.3.

**Table 4.3: Risk Assessment**

| 1. Our bank conduct proper credit risk assessment on the borrowers before giving loans to its customers | 4.321 | .6118 |
| 2. The bank’s management is open to all communications about credit risks | 4.207 | .6853 |
| 3. There are measures that enables easy detection of non-performing loans in the bank | 4.071 | .6042 |
| 4. The bank carries out a comprehensive and systematic identification of its credit risks | 4.214 | .6299 |
| 5. The board and management of the banks include audit professionals in the risk evaluation process | 4.393 | .4974 |
| 6. The management of the bank frequently assess the credit risk profile so as to understand the credit risks the bank faces | 4.279 | .5479 |

**Source:** Research Data (2019)
From Table 4.3, the data suggests that most respondents agree to the established ways of risk assessment in their various bank branches. When the ‘strongly agree’ and ‘agree’ responses are summed, the results generally indicate an agreement to the statements presented in the Table 4.3 implying that there is a strong association between risk assessment and credit risks. The respondents strongly indicated that their banks conduct proper credit risk assessment on the borrowers before giving loans to its customers and that their organization’s administration incorporate audit professionals in the risk evaluation procedures as indicated by a mean of 4.321 and 4.393 respectively. Further, the results show that the management of the selected banks frequently evaluates the credit risk profile so as to understand the credit risks the bank faces as shown by mean response score of 4.279. These results shows that listed commercial banks are keen risk assessment especially regarding credit risks which are in tandem with Rouse (2009) assertion that presence of bad debts can be reduced if lenders embraced monitoring and control. The participants also strongly agreed that these banks conduct a thorough orderly detection of their credit risks (M=4.214); that these banks’ management is open to all communications about credit risks (M=4.207) and that there are measures that enables easy detection of non-performing loans in the bank (M=4.071).

4.4.3 Analysis of Control Activities

Table 4.4 shows statements reflecting on the aspects of control activities and their association with credit risks in commercial banks.

Table 4.4: Control Activities

<table>
<thead>
<tr>
<th>Statement</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The bank have guidelines and processes that guarantee credit decisions are made with appropriate approval</td>
<td>4.536</td>
<td>.5079</td>
</tr>
<tr>
<td>2. Approval and authorizations of credits are clearly outlined in bank's credit policy</td>
<td>4.214</td>
<td>.6862</td>
</tr>
</tbody>
</table>
3. The bank ensures credit prudence and compliance  
4. Procedures exist in bank that guarantees continuous and free compromise of benefits and obligation adjusts, both on-and shaky sheet  
5. The bank has frameworks set up to guarantee that work force maintain partitions of obligation  
6. The isolation of jobs and double power over bank are stressed in the bank's authoritative structure  
7. The bank has a well-archived credit chance arrangement  

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. The bank ensures credit prudence and compliance</td>
<td>4.179</td>
<td>.7228</td>
</tr>
<tr>
<td>4. Procedures exist in bank that guarantees continuous and free compromise of benefits and obligation adjusts, both on-and shaky sheet</td>
<td>4.357</td>
<td>.4879</td>
</tr>
<tr>
<td>5. The bank has frameworks set up to guarantee that work force maintain partitions of obligation</td>
<td>4.464</td>
<td>.5039</td>
</tr>
<tr>
<td>6. The isolation of jobs and double power over bank are stressed in the bank's authoritative structure</td>
<td>4.321</td>
<td>.5480</td>
</tr>
<tr>
<td>7. The bank has a well-archived credit chance arrangement</td>
<td>4.466</td>
<td>.4979</td>
</tr>
</tbody>
</table>

**Source:** Research Data (2019)

As shown in Table 4.4, the information obviously show that participants were in agreement with the different statements made. The participants generally highly agreed that banks have rules and procedures that ensure loan choices that are made with suitable approvals and that these banks have a well-documented credit risk strategy as shown by their average reaction score of 4.536 and 4.466 respectively. They also highly agreed that these banks have frameworks in place to ensure that employees comply with roles segregation (M=4.464); that there are procedures in banks that ensure continuing and autonomous reconciliation of both on-and off-balance (M=4.357) assets and liability balances; that segregation of roles and dual control over bank are emphasized in the bank’s organizational structure (M=4.321).

In addition, the results revealed that the participants strongly agreed that approval and authorizations of credits are clearly outlined in every bank’s credit policy and that these banks ensures credit prudence and compliance as shown by their mean response scores of 4.214 and 4.179 respectively. These findings corroborates that of Siayor (2010) and Aliyu et al. (2014) who reported that control activities including segregation of duties, enhancement of operational
performance as well as credit prudence and compliance influences good credit decisions and control.

4.4.4 Analysis of Information and Communication

The examination further tried to set up the impact of data and correspondence as another significant element of inner controls on layaway dangers of the recorded business banks in Kenya. The range comprised of eight things thinking about parts of data and correspondence.

Table 4.5 presents the results.

Table 4.5: Information and Communication

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The bank's data and correspondence frameworks appropriately distinguish, collect, examine, order, record, and report an organization's exchanges as per the set measures</td>
<td>4.429</td>
<td>.5040</td>
</tr>
<tr>
<td>2. The data and correspondence frameworks in our bank guarantees that the bank's credit chance taking exercises are inside the credit strategy rules</td>
<td>4.536</td>
<td>.5762</td>
</tr>
<tr>
<td>3. All the personnel in the bank understand how their activities relate to others</td>
<td>3.929</td>
<td>.6627</td>
</tr>
<tr>
<td>4. The operational, compliance, managerial and financial reports are sufficient to properly control the bank.</td>
<td>4.464</td>
<td>.6929</td>
</tr>
<tr>
<td>5. The credit officers are aware of their responsibility for the operations they run</td>
<td>4.107</td>
<td>.6853</td>
</tr>
<tr>
<td>6. Our bank has set up procedures which guarantee that all significant and dependable data is conveyed in an opportune way to every applicable player</td>
<td>4.500</td>
<td>.6383</td>
</tr>
</tbody>
</table>
Source: Research Data (2019)

As summarized in Table 4.5, based on the mean score responses, it was underscored that most of the participants were in agreement with the items listed. They strongly agreed that the data and correspondence frameworks in their banks ensures that the banks’ credit risk-taking activities are within the credit policy guidelines (M=4.536); bank has installed procedures which guarantee that all the important information is shared on time to all the concerned actors with the organization (M=4.500); that the operational, compliance, managerial and financial reports are sufficient to properly control the bank (M=4.464); and that these banks use the latest information and control applications in credit management (M=4.393).

Moreover, the respondents indicated that the credit personnel in their various banks are aware of their responsibility for the operations they carry out (M=4.107); they agreed that effective channels of communication are used in their banks and that all the personnel in the bank understand how their activities relate to others as revealed by mean response score of 3.964 and 3.929 correspondingly. The result confirms previous research that effective communication and reporting greatly minimizes the institutions’ risk taking tendency (Haq, 2010).

### 4.4.5 Credit Risk Analysis

To understand the credit risks of the selected banking institutions, the participants were requested to rate their agreement with items relating to credit risk. Results are indicated in Table 4.6 below.
Table 4.6: Credit Risks

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The bank has a well-documented credit risk management policy</td>
<td>4.429</td>
<td>.6341</td>
</tr>
<tr>
<td>2. The bank conducts proper credit assessment</td>
<td>4.286</td>
<td>.7127</td>
</tr>
<tr>
<td>3. Credit controls are observed appropriately in our bank</td>
<td>4.071</td>
<td>.7664</td>
</tr>
<tr>
<td>4. The bank has a credit manual that documents and elaborates the strategies for managing credit</td>
<td>4.286</td>
<td>.5998</td>
</tr>
<tr>
<td>5. There is proper underwriting of loans in the bank</td>
<td>3.857</td>
<td>.7559</td>
</tr>
<tr>
<td>6. Our bank offers more direct lending</td>
<td>2.964</td>
<td>.9616</td>
</tr>
<tr>
<td>7. Credit policies in the bank are inappropriate</td>
<td>1.714</td>
<td>.9831</td>
</tr>
<tr>
<td>8. The bank adheres to good lending practices</td>
<td>3.936</td>
<td>.8811</td>
</tr>
</tbody>
</table>

Source: Research Data (2019)

As clearly exhibited in Table 4.6, majority the respondents strongly agreed that the selected commercial banks have well documented credit risk management policy (M=4.429); that their banks conducts proper credit assessment and that these banks Have a loan manual documenting and developing loan management policies (M=4.286). They also agreed that credit controls are observed appropriately in these banks (M= 4.071); that there is proper underwriting of loans in the bank and that these banks adheres to good lending practices (M=3.857, 3.936). These findings agrees with Jin, (2013) results who established that if banks conduct proper credit
management and observe keenly good lending practices as well as adhere to the set controls, they minimize their tendencies to take risks and are unlikely to fail. However, respondents strongly disagreed to the statements that credit policies in their various banks are inappropriate and if their banks offers more direct lending (M=1.714, SD=2.96).

4.5 Inferential statistics

Inferential statistics makes the inferences/implications of the data in the study that is, generalization about the population based on the samples. That is, to draw findings and create projections. Two methods were used, i.e. the technique of evaluation of correlation and various evaluation of regression.

4.5.1 Correlation statistics

Analysis of correlation is the statistical instrument used to determine the amount of connection between two variables, i.e. to determine how heavily the results of two variables are associated or correlated. The matrix of correlation was used to verify the Multicollinearity idea, that is, if there is a powerful correlation between two factors of predictors. Association power was measured based on the Pearson correlation scale where a value in the 0.0-0.3 interval showed no correlation, 0.3-0.5 showed weak correlation, 0.5-0.7 stated reasonable correlation, and a correlation value in the 0.7 and 1 intervals suggested a powerful correlation. A correlation value of 1 shows that the association is strong. A correlation value of 1 shows that the variables are perfect association is indicated by a value of 1. The association strength (+ or-) shows the nature (favorable or negative association) of the association. The significance level was set at 5% with a 2-tailed test. The results are therefore as presented in the table below:

**Table 4.7: Correlation Coefficients**

<table>
<thead>
<tr>
<th>Spearman's rho</th>
<th>Credit Risk Correlation Coefficient</th>
<th>1.000</th>
<th>.678*</th>
<th>.760*</th>
<th>.758*</th>
<th>.699*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td>.038</td>
<td>.013</td>
<td>.003</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Control Environment</td>
<td>N</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>---------------------</td>
<td>---</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>.678*</td>
<td>1.000</td>
<td>.405**</td>
<td>.255</td>
<td>.156</td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.038</td>
<td>.010</td>
<td>.076</td>
<td>.192</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk Assessment</th>
<th>N</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>.760*</td>
<td>.405**</td>
<td>1.000</td>
<td>.581**</td>
<td>.589**</td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.013</td>
<td>.010</td>
<td>.000</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control Activities</th>
<th>N</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>.758*</td>
<td>.255</td>
<td>.581**</td>
<td>1.000</td>
<td>.352*</td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.003</td>
<td>.076</td>
<td>.000</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Information and Communication</th>
<th>N</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correlation Coefficient</td>
<td>.699*</td>
<td>.156</td>
<td>.589**</td>
<td>.352*</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.000</td>
<td>.192</td>
<td>.000</td>
<td>.022</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Correlation is significant at the 0.05 level (1-tailed).

All the explanatory variables and the explained variable had a statistically significant association at 5% level of significance as indicated in Table 4.7.

4.5.2 Multiple Regression Analysis

In Table 4.9, the $R$ is the multiple correlation coefficients that show the strength of relationship between the multiple independent variables and the explained variable. The $R$ squared explains extent to which variations in the dependent variable is explained by variation in the explanatory variable.

Table 4.8: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>$R$</th>
<th>$R$ Square ($R^2$)</th>
<th>Adjusted Square</th>
<th>$R$</th>
<th>Std. Error of the Estimate</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.888</td>
<td>.796</td>
<td>.727</td>
<td>.52325</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), control environment, risk assessment, control activities, information and communication

b. Dependent Variable: credit risk in commercial banks listed in Nairobi Securities Exchange

Information in Table 4.8 indicates that there is strong positive association between internal controls and credit risk. This is supported by a correlation coefficient of 0.888. In addition, the results show that credit risk is best projected by the model ($R^2 = 0.796$). The greater the $R$ square, the better the information suits the model (Mugenda & Mugenda, 2003). Table 4.9 shows the model of internal controls and credit risk association with the $R^2 = 0.796$ and $R = 0.888$ at the P-value of 0.001 < 0.05, meaning that the model of credit risk is significant at the 5 percent significance.
The coefficient of determination indicates that 79.6% of the changes in credit risk can be explained by changes in the internal controls. The remaining 20.4% could be attributed aspects of the model not captured in the current study therefore further research should be done to ascertain these other elements. Nevertheless, the model was well predicted by \( R^2 \) value of over 75%. Moreover the adjusted R square which measured the reliability of the results showed that at .727 (72.7%) the findings of the model are important and reliable in explaining the dependent variable impact of the predictor factors.

The study also conducted ANOVA to determine the extent to which the independent and dependent variable relates with each other.

### Table 4.9: Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>6.189</td>
<td>4</td>
<td>1.547</td>
<td>7.197</td>
<td>.00021</td>
</tr>
<tr>
<td>Residual</td>
<td>5.938</td>
<td>28</td>
<td>.212</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12.127</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2019)

Table 4.9 presents the F value that assesses the meaning of the connection between the variables (both the dependent and the independent). The F value in the table is 7.197 with a 0.00021 P-value that was smaller than the meaning point of 0.05 (5 percent). Therefore, based on these outcomes, there is powerful proof that there is a statistically significant connection between the factors.
To further analyze the cause-effect relationships and the strength of the dependency among the dimensions of internal controls and credit risk of commercial banks, the study conducted multiple regression analysis. The results are presented in Table 4.10

**Table 4.10: Regression Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.1.007</td>
<td>.207</td>
<td>1.616</td>
<td>.001</td>
</tr>
<tr>
<td>Control Environment</td>
<td>.750</td>
<td>.131</td>
<td>.686</td>
<td>2.357</td>
</tr>
<tr>
<td>Risk Assessment</td>
<td>-.890</td>
<td>.011</td>
<td>-.780</td>
<td>2.646</td>
</tr>
<tr>
<td>Control Activities</td>
<td>-.941</td>
<td>.136</td>
<td>-.791</td>
<td>2.339</td>
</tr>
<tr>
<td>Information and Communication</td>
<td>-.739</td>
<td>.104</td>
<td>-.693</td>
<td>4.059</td>
</tr>
</tbody>
</table>

**Source:** Researcher(2019)

Table 4.10 gives the regression coefficients which were used to answer the regression model proposed: \( Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \)

Where:

\( Y \) = Credit Risk (Dependent Variable)

\( \beta_0 \) = is a constant, taken as the dependent variable when all the independent variables are 0

\( \beta_1 - \beta_4 \) = Regression coefficients of independent variables
Based on Table 4.10 results, the model therefore becomes;

\[ Y = 1.007 + 0.686X_1 - 0.780X_2 - 0.791X_3 - 0.693X_4 + \varepsilon \]

The multiple regression values in the table indicated that all the elements of internal control studied, that is, control environment, risk assessment, control activities and information and communication has a significant influence on credit risk. The regression coefficients p-values are less than 0.05 indicating a significant relationship between the dependent and independent variables. These findings are in tandem with the findings of Ellul and Yerramilli (2013); Tang et al. (2015) and Akwaa-Sekyi & Moreno (2016) who found significant relationship between internal controls and credit risk emphasizing that strong internal control significantly reduces credit risk of firms.

From the above regression equation it was revealed that if all the dimensions of internal control, that is, control environment, risk assessment, control activities, information and communication are taken to a constant zero, non-performing loans (credit risk) among the listed commercial banks in Kenya would stand at 1.007.

Further, the results showed a positive significant association between control environment and credit risk. This implies that control environment is a significant contributing factor to the success or failure of credit risk management. It can then be concluded that if the management of banks ensure that the control environment is extensively, effectively and objectively applied, then credit risk will be reduced by .686 (68.6%) or vice versa. This means that if the qualities of control environment in the banks are strong then credit risk will be minimized since any loopholes leading to undermining of internal controls will be sealed and if the variables are weak then it will translate to increased credit risk. These findings contradict the results of Agrawal and
Mandelker (2012) who established a negative relationship even though the result shows very significant relation between control activities and credit risk attributing it to weaknesses or inactive board of directors.

As clearly shown in Table 4.10, risk assessment, control activities, information and communication have a strong inverse relationship with credit risk in commercial banks listed at NSE. Holding all the explanatory constructs constant, then a unit increase in risk assessment will lead to 0.780 (78%) decrease in credit risk. These findings concur with the results of Abiola and Oyewole (2013) who indicated a strong inverse relationship between risk assessment and credit risk. It also confirms earlier research that good risk assessment reduces risk exposure (Abbas and Iqbal, 2012) but divergent to an earlier study by Akwaa-Sekyi and Moreno (2016) who rather found a positive correlation.

Likewise a unit increase in control activities reduces credit risk by 0.791 (79.1%); similarly unit improvement in information and communication systems in banks decreases credit risk by .693 (69.3%). These findings are in tandem with the findings of Channar, Khan and Shakri (2015) who established that effective internal controls reduce credit risks and enhance financial stability of banks. On the overall, based on these findings, control activities had the strongest influence on credit risk, followed by risk assessment, information and communication and finally control environment.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines the summary of the study findings, conclusions and the recommendations based on the study findings. It also draws attention to the research gaps to be filled by other researchers. This was done in line the objectives of the study. The primary objective of the research was to determine the relationship between internal controls and credit risk among banks listed at the NSE, Kenya.

5.2 Summary of Findings

The study sought to determine the relationship between internal controls and credit risk among banks listed at the NSE, Kenya. The target respondents were risk managers, internal auditors, compliance and monitoring managers as well as the credit managers of all the eleven commercial banks. Primary data collected using questionnaires was used in this research. Both descriptive and inferential statistics were applied in analysis of the data. Out of the 44 questionnaires administered, 33 were properly filled and returned, which represented 75% return rate. This return rate was considered adequate for analysis.

Analysis of the gender question reveals that 54% of the participants were men while 46% were female. This implies that majority of the study participants were male. Majority (84%) of those who participated at the time of the study were aged between 31-45 years; a good number (38%) being in the age bracket of 41-45 years. Regarding work experience, on the overall, 89% have worked for more than 7 years; 7-9 years bracket (39%) being the highest in this category. Assessment of the highest education levels attained by the respondents showed that 50% had acquired Master’s Degree, 43% Bachelor’s degree while 7% had Doctorate degrees. The key respondents were the credit managers (32%) and internal auditors (25%).

On whether there is an association between control environment and credit risk, the findings indicate that the commercial banks in Kenya have a framework to ensure that they comply with guidelines and to report cases of non-compliance in their various banks.
have sufficient data regarding the credit risk evaluation procedure; bank's leadership is committed to making sure there is adequate internal management of the organization’s activities and there are clearly defined authority and responsibilities of credit personnel in these banks. It was also established that these banks have enough staff with necessary skills to handle the credit risks and that majority of these banks have both internal and external audit professionals responsible for assessing the efficiency of the organization’s internal control frameworks periodically. In addition, the results indicated that the leadership of the commercial banks regularly evaluates the guidelines to make sure that right measures are in place and that these selected banks have set codes of behavior or moral policies that guides employees in regard to credit risk.

Regarding the effect of risk assessment on credit risk, the findings showed that respondents strongly indicated that their banks conduct proper credit risk assessment on the borrowers before giving loans to its customers and that their organization’s leadership utilize audit professionals in the procedures of assessing uncertainties. Additionally, the findings indicate that the management of the selected banks frequently evaluates the profile of the credit risk so as to understand the potential risks facing the bank; this involves carrying out a thorough and orderly screening of their credit related risks; is open to all communications about credit risks and there are measures that enables easy detection of non-performing loans in these banks.

The study further sought to determine the effect of control activities on credit risk among the listed commercial banks in Kenya. Generally, the respondents strongly agreed that bank have guidelines that enhance decision making in regard to credit matters; that these banks have a well-documented credit risk policy and they have frameworks instituted to make sure that the staff comply with segregation of duties. The results also showed that processes exist in banks that continuous autonomous consolidation of assets and obligations balances; that segregation of responsibilities a double control over institutions’ bank assets are asserted in the organizational structure of the banks; that approval and authorizations of credits are clearly outlined in every bank’s credit policy and that these banksempahsize credit prudence and compliance.

In regard to information and communication aspects, results revealed that the participants strongly agreed that communication-oriented frameworks in their banks guarantees that the
organizations tendency to risks related to credit do not go against the policy guidelines; that these banks have adopted procedures to facilitate effective sharing of relevant information to all the groups within the organization; that the operational, compliance, managerial and financial reports are sufficient to properly control the bank and that these bank use the latest information and control applications in credit management. Moreover, they indicated that the credit personnel in their various banks are well aware of their responsibilities in relation to the duties they perform; that effective channels of communication are used in their banks and that all the personnel in the bank understand how their activities relate to others.

5.3 Conclusions

The main focus of the research was on internal controls and credit risk in Kenyan banks trading at the NSE. From inferential analysis findings, the study concludes that on the overall all the internal control components had a significant influence on credit risk. All the dimensions of internal controls studied, that is, the risk assessment, control environment, control activities and information and communication have a significant influence on credit risk of the banks.

Regarding control environment the results indicates that having clearly defined authority and responsibilities, sufficient personnel who are competent and knowledgeable, existence of both internal and external audit professional who evaluate the capacity of the institutions, internal control frameworks occasionally as well as regularly reviewing guidelines to ascertain that right checks have been instituted to ensures reduction of uncertainties related to credit. Nonetheless, the efficiency of the checks is not assured since the association value indicated a positive relationship yet it should be inverse, an indicationof ineffective internal control systems.

Risk assessment was another important element of internal control studied in this research. The study concludes that risk assessment significantly influence credit risk as the findings indicate a strong inverse relationship with credit risk. The key factors in this component includes implementation of comprehensive and systematic identification, analysis and credit risk management procedures which are vital to achieving banks’ objectives and reduction of non-performing loans.
The study further concludes that control activities do have a strong significant inverse association with credit risk. The regression results showed that control activities had the strongest influence on credit risk as compared to other variables studied. In addition, the findings revealed that the commercial banks that strive to minimize their credit risk ought to have guidelines that guarantee decisions related to credit are based on proper green lights: well-documented credit risk policy, segregation of duties, continuous and autonomous consolidation of assets and obligations balances, as well as credit prudence and compliance.

Finally, the study also concludes that information and communication element also play a crucial role in minimizing credit risk. The regression results showed a significant inverse relationship with credit risk, inferring that enhancement of information systems, effective channels of communication; proper reporting of operational, compliance, managerial and financial as well as communication of relevant and reliable information in the commercial banks will significantly reduce credit risk.

5.4 Recommendations

From the study results, several recommendations are brought forth:

To effectively enhance control activities of the banks, the study recommends that the management, policy makers and all banking industry players of commercial banks to institute structures that promote devotion to integrity and ethical conducts demonstrate authority and responsibility to enhance adequacy of banking activities.

In addition, the banks’ board of directors and the administration team should implement oversight responsibilities, demonstrating commitment to competence and enforcing accountability.

Since the CBK regulates the commercial banks, it should ensure that every bank set correct internal checks guidelines especially regarding risk assessment procedures and observes their sufficiency and usefulness especially in reducing non-performing loans.
The regression results showed that control activities had the strongest influence on credit risk as compared to other variables studied. Hence to augment these control activities, the study recommends that all the financial institutions should adhere to the set policies to enhance realization of banks’ objectives.

Furthermore, the study recommends that every bank in Kenya should have proper quality control structures, effective audit programs and monitoring activities.

The study also recommends enhancement of information systems, effective channels of communication and accurate reporting of operational, compliance, managerial and financial information in the commercial banks to boost information and communication component in their institutions.

Finally, the study recommends that the credit policy and other guidelines be easily accessible to all lending officers; any updates or changes to the policy be communicated immediately so as to minimize credit risk exposed to the banks.

5.5 Suggestions for Further Study

Results of the regression analysis indicate that internal controls indicators studied only explain 79.6% (R square = .796) of the variance in credit risk of the listed commercial banks in Kenya. This implies that 20.4% of the variance is explained by other factors outside the model used. Therefore, additional studies should be conducted to establish these other variables that explain 20.4% of the variance. In addition, another comparable study should be conducted in different organizations covering various sectors to establish whether similar findings will be obtained.
REFERENCES


APPENDICES

APPENDIX I: LETTER OF INTRODUCTION

TO WHOM IT MAY CONCERN

Dear Sir/ Madam

RE: LETTER OF INTRODUCTION

I am currently conducting an academic research on a topic relating to internal controls and credit risk in commercial banks listed at Nairobi Securities Exchange. This is in line with Kenyatta University MBA program. I am therefore humbly urging you to partake in answering the questionnaire attached herewith

All information received from the respondents will only be used for academics. This information will be retained safely without any possible exposure. Kindly provide honest answers to the questions asked.

Thanks in advance

Yours Sincerely,

Mwichigi Gabriel
APPENDIX II: RESEARCH QUESTIONNAIRE

SECTION A: Bio Data

1. Gender

   Male [ ]    Female [ ]

2. Age bracket?

   Between 20 -25 [ ]  Between 26-30 [ ]  Between 31-35 [ ]
   Between 36-40 [ ]  Between 41-45 [ ]  46 and above [ ]

3. What is the name of your bank (Optional)? .................................................................
   ........................................................................................................................................

4. Period of time worked in the bank?

   1-3 Years [ ] 4-6 Years [ ] 7-9 Years [ ] 10-12 Years [ ]
   Above 12 years [ ]

5. What is your highest education level?

   Diploma certificate [ ]  Bachelor’s Degree [ ]  Master’s degree [ ]
   Doctorate degree [ ]  Others: .................................................................

6. What is your position in the bank?

   Risk Manager [ ]  Compliance and Monitoring Manager [ ]
   Internal Auditor [ ]  Credit Manager [ ]

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SECTION B: Control Environment

Kindly rate the extent to which you agree or disagree with the following statements relating to control environment. Where, 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree.

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<tr>
<td>1. The bank’s board periodically review policies and procedures to ensure that proper controls have been instituted</td>
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<td>2. There is a system in place to monitor compliance with policies and procedures and to report to the board instances of noncompliance in the bank</td>
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<td>3. The bank has adequate information about the credit risk assessment process</td>
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<td>4. Our bank’s board and management are committed to ensuring proper internal controls over a bank’s operations and credit control</td>
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<td>5. The bank has set codes of behavior or moral policies that guides employees in regard to Credit risk</td>
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<td>6. The bank have sufficient personnel who are competent and knowledgeable to manage the credit risks</td>
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<td>7. The bank have internal and/or external auditors who assess the adequacy of the bank’s internal control systems periodically</td>
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<td>8. There are clearly defined authority and responsibilities of credit personnel in our bank</td>
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II] What is your opinion on the overall attitude and awareness of your colleagues concerning the importance of control environment you operate in?
SECTIONC: Risk Assessment

Kindly rate the extent to which you agree or disagree with the following statements relating to risk assessment. Where, 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree.

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<tr>
<th>Statement</th>
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<tr>
<td>1. Our bank conduct proper credit risk assessment on the borrowers before giving loans to its customers</td>
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<td>2. The bank’s management is open to all communications about credit risks</td>
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<td>3. There are measures that enables easy detection of non-performing loans in the bank</td>
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<td>4. The bank carries out a comprehensive and systematic identification of its credit risks</td>
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<td>5. The bank’s management and the board involve audit personnel or other internal control experts in the risk assessment process</td>
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<td>6. The management of the bank frequently evaluate the credit risk profile in order to be aware of the credit risks faced by the bank</td>
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II] What is your opinion on how your organization identifies and analyses risk associated with credit?
SECTION D: Control Activities

Kindly rate the extent to which you agree or disagree with the following statements relating to control activities. Where, 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree.

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<tr>
<td>1. The bank have policies and procedures that ensure credit decisions are made with appropriate approval</td>
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<td>2. Approvals and authorizations of credits are clearly outlined in the bank’s credit policy</td>
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<td>3. The bank ensures credit prudence and compliance</td>
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<td>4. Processes exist in the bank that ensures ongoing and independent reconciliation of asset and liability balances, both on- and off-balance sheet</td>
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<td>5. The bank has systems in place to ensure that personnel abide by separations of duty</td>
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<td>6. Separation of duties and dual control over bank assets are emphasized in the bank’s organizational structure</td>
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<td>7. The bank has a well-documented Credit risk policy</td>
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II] Do you think all your colleagues enforce all the processes and procedures associated with credit administration without undue influence from management?
SECTION E: Information and Communication

Kindly rate the extent to which you agree or disagree with the following statements relating to information and communication. Where, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

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<tr>
<td>1. The bank’s information and communication systems properly</td>
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<td>identify, assemble, analyze, classify, record, and report an</td>
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<td>institution’s transactions in accordance with the set standards</td>
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<td>2. The information and communication systems in our bank</td>
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<td>ensures that the bank’s credit risk-taking activities are within</td>
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<td>the credit policy guidelines</td>
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<td>3. All the personnel in the bank understand how their activities</td>
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<td>relate to others</td>
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<td>4. The operational, compliance, managerial and financial</td>
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<td>reports are sufficient to properly control the bank</td>
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<td>5. The credit personnel understand their accountability for</td>
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<td>the activities they conduct</td>
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<td>6. Our bank has put in place processes which ensure that all</td>
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<td>relevant and reliable information is communicated in a timely</td>
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<td>manner to all relevant players within the institution</td>
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<td>7. Effective channels of communication are used in our bank</td>
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<td>8. Our bank uses the latest information and control applications</td>
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<td>in credit management</td>
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II] What is your opinion on the quality of information availed to by your organization regarding credit policy? How does the information affect your view of credit risk?
SECTION F: Credit Risk

Kindly rate the extent to which you agree or disagree with the following statements relating to credit risk. Where, 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree.

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<tr>
<td>1. The bank has a well-documented credit risk management policy</td>
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<td>2. The bank conducts proper credit assessment</td>
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<td>3. Credit controls are observed appropriately in our bank</td>
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<td>4. The bank has a credit manual that documents and elaborates the strategies for managing credit</td>
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<td>5. There is proper underwriting of loans in the bank</td>
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<td>6. Our bank offers more direct lending</td>
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<td>7. Credit policies in the bank are inappropriate</td>
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<td>8. The bank adheres to good lending practices</td>
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II] Why do you think customers default on payments despite the existence of credit assessment reports and sound credit policy?

THANK YOU FOR YOUR COOPERATION!
APPENDIX III: LIST OF COMMERCIAL BANKS LISTED AT NSE

1. Barclays Bank of Kenya Limited,
2. CFC Stanbic of Kenya Holdings Limited,
3. The Co-operative Bank of Kenya Limited,
4. Diamond Trust Bank Kenya Limited,
5. Equity Group Holdings,
6. Housing Finance Group Limited,
7. I&M Holdings Limited,
8. Kenya Commercial Bank Group Limited,
9. National Bank of Kenya Limited,
10. NIC bank Limited,
11. Standard Chartered Bank Limited