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

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Abstract

Purpose: The general objective of this research was to examine the internal controls and credit risk in commercial banks listed in Nairobi Securities Exchange, Kenya.

Methodology: The cross sectional descriptive research design was used since it helps in establishing the association between constructs at a given point in time. The study conducted a census of the 11 banks trading at the Kenya securities market since the target population was accessible and easily manageable. The target respondents were the risk managers, compliance and monitoring managers, internal auditors and credit managers of all these commercial banks, all located in Nairobi. Data was collected from primary sources; the data collection tool being a questionnaire which contained questions structured in a five-point Likert scale thus ensured that all the respondents got exactly the same questions. Descriptive and inferential statistics was applied for analysis of data using the SPSS software. The findings were demonstrated using graphs and tables.

Results: All the dimensions of internal controls studied, that is, the risk assessment, control environment, control activities and information and commutation were found to have a significant influence on credit risk of the banks.

Recommendations: There is need for 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. The banks' board of directors and the administration team should implement oversight responsibilities, demonstrating commitment to competence and enforcing accountability. Further, adherence to the set policies should be followed in all the financial institutions to enhance realization of banks' objectives. Further, the study recommends that every bank in Kenya should have proper quality control structures, effective audit programs and monitoring activities. Since the CBK regulates the commercial banks, it should ensure that every bank set correct internal checks guidelines and observes their sufficiency and usefulness. 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.

Keywords: *Internal controls, credit risk, commercial banks and Nairobi Securities Exchange*

1.0 INTRODUCTION

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 and 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 ought to possess a 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), emphasize the development of a functioning internal control system that easily identifies and assess continually all kinds of risks, whether they are internal or external, that can hinder bank's implementation on 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 and 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 and 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.

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. 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 the 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).

Various studies that have been done to inspect the association between internal controls 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.

Olumbe (2012) inspected the association between approved corporate governance and internal control systems. He found a strong positive association between internal control systems and corporate governance. Wainaina (2014) evaluated the internal control function in Kenya polytechnic university college. 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 risk using the listed commercial banks in Nairobi Securities Exchange in Kenya.

1.3 Specific Objective

i. To find out the association between control environment and credit risk in commercial banks listed in Nairobi Securities Exchange

ii. To determine the association between risk assessment and credit risk in commercial banks listed in Nairobi Securities Exchange

iii. To examine the association between control activities and credit risk in commercial banks listed in Nairobi Securities Exchange

iv. To assess whether information and communication influence credit risk in commercial banks listed in Nairobi Securities Exchange

2.0 LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 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 and 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.

2.1.2 Information Theory

Derban, Binner and Mullineux (2005), stresses that debtors should be diligently screened by banks through credit assessment before their issued with loans. 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 changes in the anticipated level of credit loan loss will make the rating systems important.

Brown (1998) concluded that quantitative models enables banking institutions to numerically ascertain the 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. The inaccuracy with which loans are initiated, funded, serviced and monitored tends to trigger default, crisis and bank failure. This theory therefore was relevant to the study as it 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.

2.1.3 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 company size, culture, governance philosophy, objectives, operational environment (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 this theory was relevant to the study as it 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.

2.2 Empirical Review

Any internal control structure that is strong requires a strong risk setup acting as a support factor according to (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, in allocating 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).

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 and Van Esch, 2012). Risk assessment deals with all the processes and procedure 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).

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.

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).

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.

2.3 Conceptual Framework

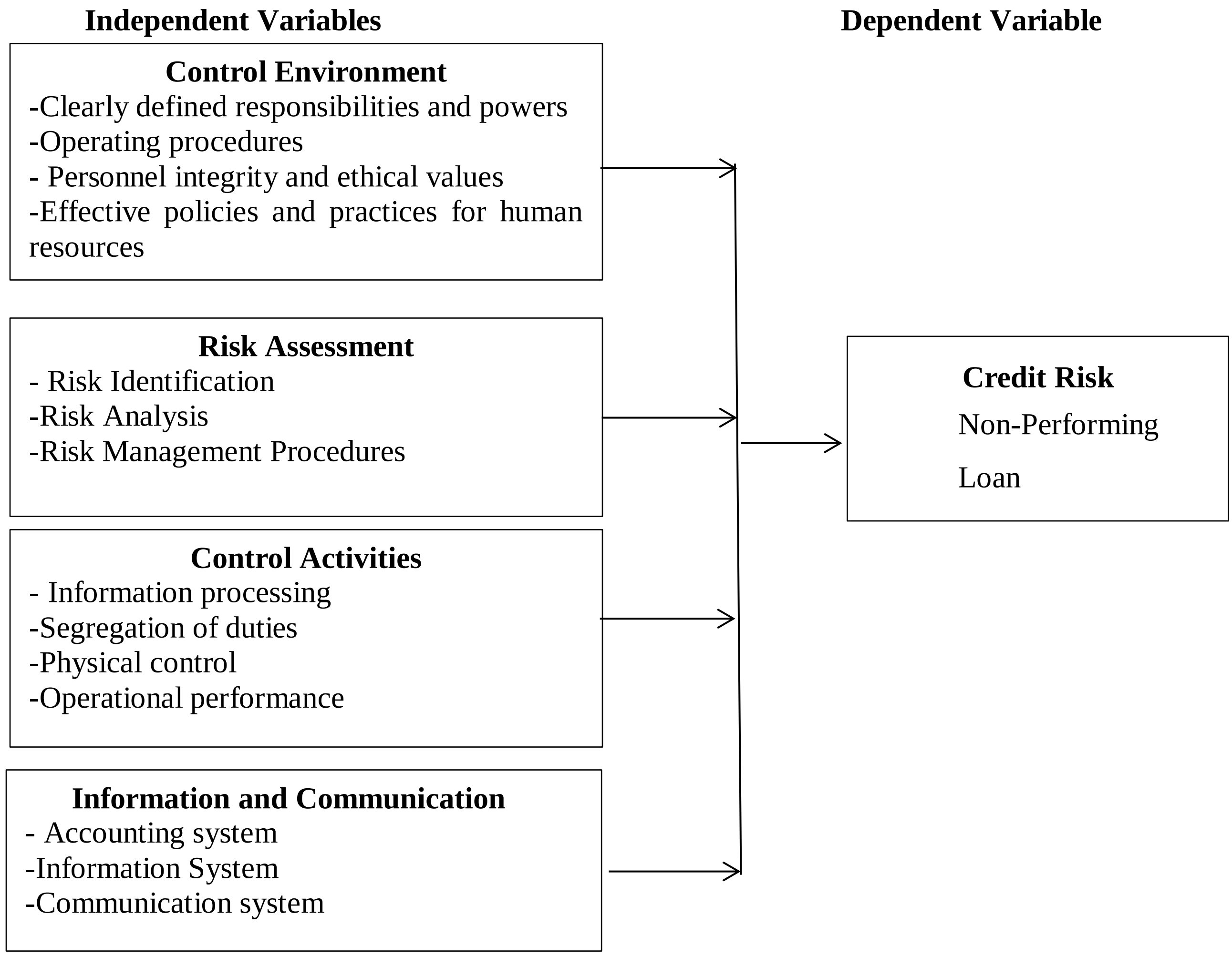

Figure 1: Conceptual Framework

3.0 RESEARCH METHODOLOGY

The cross sectional descriptive research design was used since it helps in establishing the association between constructs at a given point in time. The study conducted a census of the 11 banks trading at the Kenya securities market since the target population was accessible and easily manageable. The target respondents were the risk managers, compliance and monitoring managers, internal auditors and credit managers of all these commercial banks, all located in Nairobi. Data was collected from primary sources; the data collection tool being a questionnaire which contained questions structured in a five-point Likert scale thus ensured that all the respondents got exactly the same questions. Descriptive and inferential statistics was applied for analysis of data using the SPSS software. The findings were demonstrated using graphs and tables.

4.0 RESEARCH FINDINGS AND DISCUSSION

4.1 Demographic Information

Table 1 presents summarized results on respondents' demographic information.

Table 1: Demographic Information

Category	Results
Gender	Male=54%
	Female=46%
Age	26-30 years=7%
	31-35 years=18%
	36-40 years=28%
	41-45 years=38%
	46 years and above=9%
Duration of Work	1-3 years=4%
	4-6 years=7%
	7-9 years=39%
	10-12 years=22%
	Above 12 years=28%
Education Level	Bachelor's Degree=43%
	Master's Degree=50%
	Doctoral Degree=7%

4.2 Descriptive Analysis

4.2.1 Analysis of Control Environment

To understand the association between control environments, 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. Results are presented in Table 2.

Table 2: Control Environment

	M	S.D
1. The bank's board periodically review policies and procedures to ensure that proper controls have been instituted	4.244	.6862
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	4.377	.7005
3. Our bank has adequate information about the credit risk assessment process	4.321	.7228
4. Our bank's board and management are committed to ensuring proper internal controls over bank's operations and credit control	4.285	.7127
5. The bank has set codes of behavior or moral policies that guides employees in regard to credit risk	4.214	.6857
6. The bank have sufficient personnel who are competent and knowledgeable to manage the credit risks	4.263	.6455
7. The bank have internal and/or external auditors who assess the adequacy of the bank's internal control systems periodically	4.250	.5182
8. There are clearly defined authority and responsibilities of credit personnel in our bank	4.274	.5681

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 as shown by mean of 4.244 and 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.

4.2.2 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 3.

Table 3: Risk Assessment

	M	S.D
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

From Table 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 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).

4.2.3 Analysis of Control Activities

Table 4 shows statements reflecting on the aspects of control activities and their association with credit risks in commercial banks.

Table 4: Control Activities

	M	SD
1.The bank have guidelines and processes that guarantee credit decisions are made with appropriate approval	4.536	.5079
2.Approval and authorizations of credits are clearly outlined in bank's credit policy	4.214	.6862
3. The bank ensures credit prudence and compliance	4.179	.7228
4. Processes exist in bank that ensures ongoing and independent reconciliation of assets and liability balances, both on-and off balance sheet	4.357	.4879
5. The bank has systems in place to ensure that personnel abide by separations of duty	4.464	.5039
6. the segregation of roles and dual control over bank are emphasized in the bank's organizational structure	4.321	.5480
7. The bank has a well-documented credit risk policy	4.466	.4979

As depicted in Table 4, the data clearly shows that respondents agreed to the various statements provided. Generally, the respondents strongly agreed that bank have guidelines and processes that guarantee credit decisions are made with appropriate approvals and that these banks have a well-documented credit risk policy as shown by their mean response score of 4.536 and 4.466 respectively. They also strongly agreed that these banks have frameworks in place to guarantee that staff comply with segregation of roles (M=4.464); that processes exist in banks that ensures ongoing and independent reconciliation of assets and liability balances, both on-and off balance sheet (M=4.357); 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.

4.2.4 Analysis of Information and Communication

The study further sought to establish the effect of information and communication as another important dimension of internal controls on credit risks of the listed commercial banks in Kenya. The scale consisted of eight items reflecting on aspects of information and communication. Table 5 presents the results.

Table 5: Information and Communication

	M	SD
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	4.429	.5040
2. The information and communication systems in our bank ensures that the bank's credit risk-taking activities are within the credit policy guidelines	4.536	.5762
3. All the personnel in the bank understand how their activities relate to others	3.929	.6627
4. The operational, compliance, managerial and financial reports are sufficient to properly control the bank.	4.464	.6929
5.The credit officers are aware of their responsibility for the operations they run	4.107	.6853
6. Our bank has put in place processes which ensure that all relevant and reliable information is communicated in a timely manner to all relevant players within the institution	4.500	.6383
7. Effective channels of communication are used in our bank	3.964	.5762
8. Our bank uses the latest information and control applications in credit management	4.393	.6289

As summarized in Table 5, based on the mean score responses, the results showed that majority of the participants were 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 bank uses 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).

4.2.5 Credit Risk Analysis

The study sought to determine the between association between internal controls and credit risks among the listed commercial banks in Kenya. To understand the credit risks of the commercial banks, the participants were requested to rate their agreement with items relating to credit risk. Results are indicated in Table 6 below.

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Table 6: Credit Risks

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

As clearly exhibited in Table 6, majority the respondents strongly agreed that the selected commercial banks have well documented credit risk management policy (M=4.429); that their banks bank conducts proper credit assessment and that these banks have a credit manual that documents and elaborates the strategies for managing credit (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 as shown by mean of 1.714 and 2.964 respectively.

4.3 Inferential Analysis

4.3.1 Correlation Analysis

Correlation analysis is the statistical tool used to determine the level of association of two variables, that is, to determine how strongly the scores of two variables are associated or correlated with each other. Correlation matrix was used to check on the concept of multicollinearity, that is if there is a strong correlation between two predictor variables. The strength of the association was measured based on the Pearson's correlation scale where a value in the interval 0.0-0.3 indicated no correlation, 0.3-0.5 showed weak correlation, 0.5-0.7 indicated fair correlation and a correlation value in the interval 0.7 and 1 indicated a strong correlation. A correlation value of 1 indicates a presence of a perfect association between the variables. The magnitude of the association (+ or -) indicates the nature of association (positive or negative association). The significance level was set at 5% with a 2-tailed test. The results are therefore as presented in Table 7.

Table 7: Correlation Coefficients

Spearman's rho	**Credit Risk**	Correlation Coefficient	1.000	.678*	.760*	.758*	.699*
		Sig. (1-tailed)		.038	.013	.003	.000
		N	33	33	33	33	33
	Control Environment	Correlation Coefficient	.678*	1.000	.405**	.255	.156
		Sig. (1-tailed)	.038		.010	.076	.192
		N	33	33	33	33	33
	Risk Assessment	Correlation Coefficient	.760*	.405**	1.000	.581**	.589**
		Sig. (1-tailed)	.013	.010		.000	.000
		N	33	33	33	33	33
	Control Activities	Correlation Coefficient	.758*	.255	.581**	1.000	.352*
		Sig. (1-tailed)	.003	.076	.000		.022
		N	33	33	33	33	33
	Information and Communication	Correlation Coefficient	.699*	.156	.589**	.352*	1.000
		Sig. (1-tailed)	.000	.192	.000	.022	
		N	33	33	33	33	33

*. 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 7.

4.3.2 Multiple Regression Analysis

Saunders et al. (2016) stated that multiple regression analysis is a statistical technique which focuses upon and brings out the structure of simultaneous relationships among three or more phenomena. Multiple regressions helps to establish the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained. A multiple linear regression model was used in determining the association between internal controls (independent variable) and credit risk (dependent variable).

In Table 8, 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 8: Model Summary

Model	R	R Square (R^2)	Adjusted R Square	Std. Error of the Estimate	Sig.
1	.888	.796	.727	.52325	0.001

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 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 the model is a good predictor of credit risk in banks as shown by the R square value of 0.796. The higher the R squared, the better the model fits the data (Mugenda & Mugenda, 2003). Table 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 to other variables not captured in the current study therefore further research should be done to ascertain these other elements. Nevertheless, the model indicated a good fit as the R^2 value is above 75%. Moreover the adjusted R square which measured the reliability of the results showed that at .727 (72.7%) the model results is significant and reliable in explaining the influence of the predictor variables to the dependent variable.

The study also conducted analysis of variance (ANOVA) to determine the extent to which the independent and dependent variable relates with each other. The results are shown in Table 9.

Table 9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.189	4	1.547	7.197	.00021
	Residual	5.938	28	.212		
	Total	12.127	33			

Source: Research Data (2019)

Table 9 presents the F statistic which is used to test the significance of the relationship between the dependent and the independent variables. The F value in the table is 7.197 with a P- value obtained of 0.00021 which was lower than the 0.05 (5%) level of significance. Therefore, based on these, these results show that there is strong evidence that relationship between the variables is statistically significant.

To further analyze the 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 10.

Table 10: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta (β)**		
(Constant)	.1.007	.207		1.616	.001
Control Environment	.750	.131	.686	2.357	.003
Risk Assessment	-.890	.011	-.780	2.646	.000
Control Activities	-.941	.136	-.791	2.339	.002
Information and Communication	-.739	.104	-.693	4.059	.017

Source: Researcher (2019)

Table 10 gives the regression coefficients which were used to answer the regression model proposed: $Y= \beta_0 +\beta_1X_1 +\beta_2X_2 +\beta_3X_3 + \beta_4X_4 + \varepsilon$

Where:

Y = Credit Risk (Dependent Variable)

β_0 = is a constant, taken as the dependent variable when all the independent variables are 0

β_1 - β_4 = Regression coefficients of independent variables

X_1 = Control Environment

X_2 = Risk Assessment

X_3 = Control Activities

X_4 = Information and Communication

ε = Error of prediction

Based on Table 4.10 results, the model therefore becomes;

$Y= 1.007 + 0.686X_1 - .780X_2 -791X_3 -.693X_4 + \varepsilon$

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.

As clearly shown in Table 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 bank decreases credit risk by .693 (69.3%). 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.

5.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

The study sought to determine the relationship between internal controls and credit risk among banks trading 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 women. This implies that majority of the study participants were men. 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. Majority of these 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 behaviour or moral policies that guides employees in regard to credit risk.

Regarding the association between risk assessment and 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 association between control activities and 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 banks emphasize 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 uses 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.

5.2 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 commutation 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 indication of 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 asssociation 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.

5.3 Research Recommendations

From the study results, several recommendations are brought forth:

There is need for 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.

The banks' board of directors and the administration team should implement oversight responsibilities, demonstrating commitment to competence and enforcing accountability

Further, adherence to the set policies should be followed in all the financial institutions to enhance realization of banks' objectives.

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

Since the CBK regulates the commercial banks, it should ensure that every bank set correct internal checks guidelines and observes their sufficiency and usefulness.

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.

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