

**INFLUENCE OF CREDIT RISK MEASUREMENT ON LENDING PERFORMANCE
OF COMMERCIAL BANKS IN NAIROBI COUNTY, KENYA**

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ABSTRACT

Credit risk measurement has affected significantly the lending performance of the commercial banks not only in Kenya but also in east Africa and has led to financial crises and poor lending performance. There has been a dramatic loss in the banking industry and suddenly announced large losses due to credit exposures that turned sour. The general objective of this study was to evaluate the influence of credit risk measurement on the lending performance of commercial banks in Nairobi County, Kenya. This study used descriptive survey research design and the target population for this study was employees of the 42 commercial banks in operation in Kenya and the sample consisted of 42 credit managers and 301 members of staff. Purposive sampling and simple random sampling was used. Data was collected using questionnaires and analyzed using descriptive statistics and logistic regression analysis (binary) was used. The results of the study revealed that credit risks measurements influenced bank lending performance positively. The study concluded that credit risk measurement activities significantly influence the lending performance of commercial banks and as a result the operating capital of commercial banks have gone down. The study recommended that Kenya government through the National Treasury and in collaboration with CBK and KBA should develop policies that will help the commercial banks optimize of credit risks measurement and improve the lending performance which is currently affected to great extent.

Keyword: Influence, Credit Risk Measurement, Lending Performance, Commercial Banks

INTRODUCTION

In the past decade there has been a dramatic loss in the banking industry. Firms that had been performing well suddenly announced large losses due to credit exposures that turned sour, interest rate positions taken, or derivative exposures that may or may not have been assumed to hedge balance sheet risk (Santomero, 2010). In response to this, commercial banks have almost universally embarked upon an upgrading of their credit risk measurements methods. Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers. Prudent credit risk measurements and creation of adequate provisions for bad and doubtful debts can cushion the banks risk.

The main aim of every banking institution is to operate profitably in order to maintain its stability and improve in growth and expansion. In the last twenty years, the banking sector has faced various challenges that include non-performing loans (NPL), political interference and fluctuations of interest rate among others, which have threatened the banks stability. According to Shubhasis (2009), risk management is important to bank management because banks are “risk machines” they take risks; they transform them and embed them in banking products and services. Risks are uncertainties resulting in adverse variations of profitability or in losses. Various risks faced by commercial institutions include credit risk, market risks, interest rates risk, liquidity risk, and operational risk.

Statement of the Problem

Lending is a very profitable activity of the bank since customer pays interest on the amount borrowed. But this profitable activity also has problems which arise as a result of delayance or default in loan repayments which can be so extended and interconnected. This means that for a bank to be successful and profitable, there must be a sound credit risk measures in place which will reduce borrowers default. Every commercial banks have put in place very good credit risk measurement system which should ensure that the borrower will be able to pay back the credit borrowed and also on time (Business credit, 2009).

However, in Kenya commercial banks more than 50% of total risk elements in commercial banks are associated with credit risk alone hence managing credit risk measurement for efficient lending performance has gradually become the most crucial task. There have been consistent stream of failures and scandals in the banking services which have served as a catalyst for anxiety about credit risk and this have affected the lending performance (Moti, et.al, 2012). In the year 2016, the commercial banks in Kenya experienced credit risks challenges where 3 commercial banks were put under statutory receivership. Due to this the Central Bank of Kenya (CBK) has introduced a new directive on the treatment of non-performing credits which has increased more pressure and has affected the banks’ lending performance. The introduction of interest capping has worsened the situation and has exposed the commercial banks to more credit risks and all this have affected the lending performance of the commercial banks in Kenya. In line with this, there is need to evaluate the credit risk measurements on lending performance in commercial banks since this have hindered the access to credit by large number of borrowers which has resulted to slow growth of the country’s economy (CBK Report 31st March 2016).

Research Objective

To examine the influence of credit risk measurement on lending performance of commercial banks in Nairobi County, Kenya.

Research Hypothesis

Ho; There is no significant relationship between credit risk measurements on lending performance of commercial banks in Nairobi County, Kenya.

LITERATURE REVIEW

Kolap, (2012) conducted a study on credit risk and commercial banks’ performance in Nigeria

and found that banks have tools in place to measure credit risk. Kolap (2012) found that that majority of banks used the distribution of loans into insurance products through banking networks; in other words, as the collaboration between banks and insurers to distribute insurance products to bank customers. A study conducted by Al-Khoury, (2011) on bank's specific risk characteristics, and the overall banking environment on the performance of 43 commercial banks operating in the 6 of the Gulf Cooperation Council (GCC) countries found that banks practice credit overriding and this contributed to credit risk and subsequent poor lending performance. This study of Al-Khoury, (2011) concluded that this practice affected the bank performance when profitability is measured by return on assets. However, the only risk that affect the profitability as measured by return on equity is the liquidity risk. Bank size and government ownership are important in determining the profitability of banks. The negative and significant coefficient on government ownership implies an inefficiency in banks with high government ownership. Adding Macro and institutional factors to our models, results show that the only factor that affects profitability is market capitalization. This might imply that capital markets compliment banks as a source of liquidity (Al-Khoury, 2011).

A study by Kaaya and Pastory (2013) on credit risk and commercial banks performance in Tanzania found that commercial banks uses consultants in matters of credit risk. However, this study also found that despite the use of consultants there was increase in credit risk which tends to lower firm performance. This study concluded that credit risk is not a bad situation as it is related to bank return, from empirical theory it has been stated that the higher the risk the higher the bank return due to the bank ability to increase portfolio, but the bank need to balance and foresee the return. With these the bank need to maintain substantial amount of capital reserve to absorb credit risk in event of failure, moreover the bank need to enhance lending criteria, portfolio grading and credit mitigation techniques to reduce chance of default. Meanwhile the adoption of sound management practices and corporate governance will reduce credit risk,

Wu et al. (2008) adopt the modified Delphi method to construct the framework of credit risk measurement and the AHP model to design an assessment method for mutual fund performance. Casu & Girardone, (2004) find an increase in profit efficiency of financial conglomerates, defined as all Italian banking groups, supposing that they generally experienced a trend towards conglomeration during the observed period. Vander & Vennet (2002) measures cost and profit efficiency in European banks in 1995-1996, showing that financial conglomerates, defined as combinations between commercial banking and investment banking or insurance, are more revenue efficient than specialized banks.

Poudel (2012) conducted a study on credit risk management in bank performance of Nepal during the 2001- 2011 period using 31 banks and found that banks were introducing products without proper information of the market. The results also showed that credit risk management is affected by lack of proper market survey by the banks when rolling out new products. Gurdmundsoa, Ngok-Kisingula and Odongo (2013) assessed the task of regulatory capital obligation on bank control and competition in Kenya from 2001-2011 using panel data estimation of time series data. The results showed that, regulatory competence enhances the

competition in banking sectors and this has led to introduction of new products for completion purposes.

Greene & Segal (2014) in their study on influence of efficiency on profitability or the relationship between lending performance and market structure, found that a goal of policy-makers is to facilitate a banking system that best promotes economic efficiency and stability. The traditional perception is that there is a clear trade-off between these two goals. Their results indicated that due to competitive environment, banks have promoted a culture of subjective lending in order to encouraging the greatest supply of credit at the lowest price which puts banks into credit risk. A banking system that exhibits some degree of market power, however, may improve credit availability by lending to customers more than what they qualify which is harmful to the banks though it aids efficient allocation of resources in terms of concentration and competition.

Felix and Claudine (2008) investigated the relationship between bank performance and credit risk management. It could be inferred from their results that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. This study also found that there was declining profitability due to the risk that commercial banks grant loans without taking into consideration the business cycles when issuing business loans. Ahmad and Ariff (2007) examined the key determinants of credit risk measurements of commercial banks on emerging economy banking systems compared with the developed economies. The study found that regulation is important for banking systems that offer multi-business products and services; management quality is critical in the cases of business failing due to the phases of economies and other economic factors. An increase in loan loss provision is also considered to be a significant determinant of potential credit risk. The study further highlighted that credit risk in emerging economy banks is higher than that in developed economies.

Modern Portfolio Theory

Modern portfolio theory was largely defined by the work of Harry Markowitz (1952) in a series of articles published in the late 1950s. This theory was extended and refined by William Sharpe (1934), John Lintner (1983), James Tobin (1918), and others in the subsequent decades. Portfolio theory integrates the process of efficient portfolio formation to the pricing of individual assets. It explains that some sources of risk associated with individual assets can be eliminated, or diversified away, by holding a proper combination of assets (Bodie et al, 1999). Modern portfolio Theory (MPT) is one of the most important and influential economics theories that deal with finance and investments (Markowitz, 1990). The Modern Portfolio Theory was developed by Harry Markowitz and was published in 1952 in the journal of finance under the name of "Portfolio Selection". Later in 1959, He also published a book by the name of "Portfolio Selection: Efficient Diversification of Investments" (Brealey and Myers, 2003). What Harry Markowitz started back in the early 1960s was continued through the development of the capital market theory, whose final product, the capital asset pricing model (CAPM), allowed a Markowitz efficient investor to estimate the required rate of return for any risky asset (Bodie et

al, 1999).

MPT argues that, it is not enough to take only one particular asset's risk and return under consideration but rather invest in several assets with low correlations towards each other. This will give the portfolio advantages of diversification. Hence, the relevant objective in the MPT concept is to choose the right combination of these assets to the optimal portfolios (Freeman, 2006). The theory of modern portfolio management describes the resulting risk and return of a combination of individual assets. A primary objective of the theory is to identify asset combinations that are efficient. Here, efficiency means the highest expected rate of return on an investment for a specific level of risk (Grinold, 1999). The primary starting point for portfolio theory requires an assumption that investors are risk averse. This means that they will not consider a portfolio with more risk unless it is accompanied by a higher expected rate of return (Greg, 2009).

In summary, portfolio management theory assesses risk and return relationships for combinations of securities. While the expected return of a portfolio is the simple weighted average of the expected returns of its component securities, portfolio risk must also consider the correlation among the returns of individual securities. Since part of the price fluctuation of a security is unique, it does not relate to price fluctuations of other securities held. This allows the investor to diversify, or eliminate, a portion of each security's risk (Michaud, 1998). With additional analysis, the subset of portfolios with the highest expected return for a given risk level can be identified. If a risk-free asset can also be purchased or sold, then there is a unique combination of risky securities that will allow all investors to achieve superior returns for a given risk level. The capital asset pricing model and other models use this result to infer the risk-return relationship for individual securities. Although there is imprecision when attempting to implement these theories, they provide a useful way to evaluate and improve a variety of investment strategies (Thygeson, 1995).

In banking, loans constitute the assets in the financials and therefore the theory can be used to expound on the need of commercial banks forming a portfolio that cuts across different industries and businesses (Greg, 2009). The portfolio can be formed on the basis of purpose, time period, industry etc. This theory poses a number of gaps; the initial intent by Markowitz was to address the importance of investment portfolio for investors to spread risk when investing and not management of loan portfolio in banks. Some of the issues not addressed by the theory include; how banks can form a portfolio of loans that minimizes risk and maximizes return? It does not outline ways of determining a risk free portfolio. In addition the theory does not address various risks that are faced by banks when managing a loan portfolio. Therefore the theory cannot apply holistically when managing credit risk in banks.

Margrabe (2007) used this theory and postulated that even though credit risk remains the largest risk facing most commercial banks, the practice of applying modern portfolio theory to credit risk has lagged. Kairu (2009) used this theory in a study and claimed that companies recognize how credit concentrations can adversely impact lending performance. As a result, a number of

institutions are actively pursuing quantitative approaches to credit risk measurement. This industry is also making significant progress toward developing tools that measure credit risk in a portfolio context. The industry is also using credit derivatives to transfer risk efficiently while preserving customer relationships. Portfolio quality ratios and productivity indicators have been adapted. The combination of these developments has vastly accelerated progress in managing credit risk in a portfolio context.

Arbitrage Pricing Theory (APT)

A more interesting alternative to portfolio theory is the Arbitrage Pricing Theory (APT) of Ross (1976). Stephen Ross's APT approach moved away from the risk versus return relationship of the CAPM, and exploited the notion of pricing by arbitrage to its fullest possible extent. As Ross himself has noted, arbitrage-theoretic reasoning is not unique to his particular theory but is in fact the underlying logic and methodology of virtually all of finance theory. This theory subscribes to the fact that an estimate of the benefits of diversification would require that practitioners calculate the covariance of returns between every pair of assets.

Heffernan (2009) noted it is rarely successful to analyze portfolio risks by assessing the weighted sum of its components. Equity portfolios are far more diverse and enormously large for separate component assessment, and the correlation existing between the elements would make a calculation as such untrue. Rather, the portfolio's risk should be viewed as a single product's innate risk. The APT represents portfolio risk by a factor model that is linear, where returns are a sum of risk factor returns. Factors may range from macroeconomic to fundamental market indices weighted by sensitivities to changes in each factor.

Bikker & Van Leuvensteijn (2008) used this theory and noted that macroeconomic market factors may be economic factors (such as interest rates, inflation, GDP) financial factors (market indices, yield curves, exchange rates) fundamentals (like price/earnings ratios, dividend yields), or statistical (e.g. principal component analysis, factor analysis). APT model calculates asset pricing using the different factors and assumes that in the case market pricing deviates from the price suggested by the model, arbitrageurs will make use of the imbalance and veer pricing back to equilibrium levels. At its simplest form, the arbitrage pricing model can have one factor only, the market portfolio factor and this form will give similar results to the CAPM.

Defusco et al (2007) used this theory and concluded that APT model is based on following assumptions: relationship between expected returns and risk-factors is linear; a quantity of securities is close to infinite; expectations of investors are identical; Stock markets are perfect (there are no transactions costs and competition is perfect); and finally, there are no arbitrage opportunities in the market among well-diversified portfolios. This theory therefore emphasizes on the portfolio investments but does not give a clear approach for banks to manage loan risks

RESEARCH METHODOLOGY

The target population for this study was at two levels. The first target population was at institutional level where the study targeted the 42 licensed commercial banks in Kenya.

The second level of target population was employees of the 42 commercial banks in operation in

Kenya as at 1st January, 2018. The main reason for choosing all the employees is because in the current financial market dynamics all the employees are responsible for to facilitate lending in their respective banks and have higher level of appreciation on how credit risks measurements affects lending performance. These banks consisted of all the banks located in Nairobi because major banks have their busiest and main branches in Nairobi and most of their headquarters are in Nairobi. The target population was 1260 employees (KBA, 2018).

Table 1: Target Population

Cadres	No. of. Employees
Credit Managers	42
Other Levels	1218
Total	1260

Source: Kenya Bankers Association, (2018)

The sample size was determined by use of the following Slovin's formula;

$$n = N / (1 + Ne^2)$$

n = Number of samples N = Total population e = Error tolerance

This was done with a confidence level of 95% and at 0.05 level of significance. In this case the target population being 1260 less the 42 credit managers who were purposively selected.

The sample size was:

$$n = \frac{N}{1 + Ne^2}$$

$$= \frac{1218}{1 + (1218 \times 0.05^2)}$$

~301 respondents

Table 2: Sample Size

Cadres	No. of. Employees
Credit Managers	42
Other Levels	301
Total	343

Source: Author (2018)

Primary data was collected using questionnaires that have both structured and unstructured questions. The questionnaire contained a likert scale types of questions where the respondents were required to indicate their level of agreement with statements that expressed a favorable or unfavorable attitude towards a concept being measured. The researcher analyzed the data using descriptive statistics including frequency distribution tables, percentages and measures of central tendency such as mean and standard deviations. In addition to this, advance statistical techniques were considered particularly measures of variations such as logistic regression analysis (binary) was used to establish relationships among variables and to provide a detailed description of the data and also to classify features and construct statistical models in an attempt to explain what was achieved. The results were presented in tables, pie charts and graphs and they were

accompanied by relevant explanations

Thus, the logit model was specified as follows;

$$(Y_i) L_i = \text{Ln} \left[\frac{P}{1 - P} \right] = \beta_0 + \beta_1 X_1 + \mu$$

RESULTS AND DISCUSSION

The researcher issued 343 questionnaires to the respondents. Only 272 questionnaires were returned which accounted for 79% return rate. The reasons for this response rate was attributed to some of the respondents who were issued with the questionnaires returned questionnaires in time and there were well filled while very few who did not respond at all and others whose items were not filled. However, the response rate is considered adequate given the recommendations by Saunders, Lewis and Thornhill (2007) who suggested a 30-40% response is adequate, Sekaran (2010) who document 30%, and Hager, et.al, (2008) recommend 50%. Based on these assertions, this implies that the response rate for this study was adequate.

Credit Risk Measurement

The study sought to investigate the how credit risk measurement influenced the lending performance of the commercial banks. This was important since if the lending risk is not properly measured using the proper methods of risk measurement, there is likelihood that credit will not be paid back by borrowers.

Banks Have Tools in Place to Enhance Credit Risk Measurement

The study was interested in finding out whether commercial banks has effective systems that are put in place in order to enhance credit risk measurement especially when clients are borrowing credit. This is important since the availability of effective risk measurement systems are in place, the banks will be in a position to measure potential risks that are associated with lending. Their responses were as indicated below in table 3.

Table 3: Banks Have Tools in Place to Enhance Credit Risk Measurement

Responses	Frequency	Percent
Neutral	15	5.5
Agree	116	42.6
Strongly Agree	141	51.8
Total	272	100.0

Source; Survey Data (2018)

The results revealed that 94.4% agree that the banks havetools in place to enhance credit risk measurement. This shows that almost all the commercial banks have tools for measuring credit

risks. This finding agrees with those of Kolap, (2012) who conducted a study on credit risk and commercial banks' performance in Nigeria and found that banks have tools in place to measure credit risk. Kolap (2012) found that majority of banks used the distribution of loans into insurance products through banking networks; in other words, as the collaboration between banks and insurers to distribute insurance products to bank customers.

Banks Practices Credit Overriding Contributing

The study was investigating whether there are some banks practices credit overriding contributing to credit risks. This was important since it amounts violation of policies and regulations and could result to affect the lending performance. The results were as illustrated in table 4

Table 4: Banks practices credit overriding

Responses	Frequency	Percent
Disagree	37	13.6
Neutral	10	3.7
Agree	152	55.9
Strongly Agree	73	26.8
Total	272	100.0

Source; Survey Data (2018)

The study found that 82.7% agreed that there are some banks that practice credit overriding which have contributed to credit risk. Only 13.6% disagreed that there is some banks that practice credit overriding. This shows that majority of the banks violate the credit policy and this puts the lending performance as well as banks performance at a major risk which can lead to closure of the facility. This results agrees with those of Al-Khoury (2011) who conducted a study on bank's specific risk characteristics, and the overall banking environment on the performance of 43 commercial banks operating in the 6 of the Gulf Cooperation Council (GCC) countries found that banks practice credit overriding and this contributed to credit risk. This study of Al-Khoury, (2011) concluded that this practice affected the bank performance when profitability is measured by return on assets.

Banks Hires Consultant to Help in Measuring Credit Risk

The study investigated whether the banks hires consultant to measure credit risks. This was aimed to establish if the banks consults experts in matters of credit risk as a way of reducing exposure to risks that can affect their lending performance. Their responses were as follows in table 5

Table 5: Banks Hires Consultant to Help in Measuring Credit Risk

Responses	Frequency	Percent
Disagree	13	4.8
Neutral	9	3.3
Agree	136	50.0
Strongly Agree	114	41.9
Total	272	100.0

Source; Survey Data (2018)

The results revealed that 91.9% of the respondents agreed that commercial banks hires consultant to help in measuring the credit risks. Only 4.8% indicated that they don't hire consultants to assist in measuring credit risks. This shows that banks utilize the experts in the area of risk measurement and incorporates experts in measuring of risk. This finding agrees with those of Kaaya and Pastory (2013) on credit risk and commercial banks performance in Tanzania who found that commercial banks uses consultants in matters of credit risk. However, this study also found that despite the use of consultants there was increase in credit risk which tends to lower firm performance.

There is Introduction of New Loans Products without proper risk measurement

The study investigated whether there is introduction of new loans products by commercial banks without proper risk measurement. The responses were as follows in table 6

Table 6: Introduction of New Loans Products without proper risk measurement

Responses	Frequency	Percent
Strongly Disagree	31	11.4
Disagree	79	29.0
Neutral	13	4.8
Agree	107	39.3
Strongly Agree	42	15.4
Total	272	100.0

Source; Survey Data (2018)

The study results revealed that 54.7% agreed that there is introduction of new loans products by commercial banks without proper risk measurement while 40.4% disagreed that there is

introduction of new loans products by commercial banks without proper risk measurement. This means that there are some banks that introduce new loans products without proper risk measurement which may expose the banks to credit risk and affect lending performance. This finding is supported by Poudel (2012) who conducted a study on credit risk management in bank performance of Nepal during the 2001- 2011 period using 31 banks and found that banks were introducing products without proper information of the market. The results also showed that credit risk management is affected by lack of proper market survey by the banks when rolling out new products.

Subjective decision making by management on borrower

The study investigated whether the commercial banks management makes subjective decision making on borrowers which may increase the credit risk and affect the lending performance. The responses were as illustrated in table 7.

Table 7: Subjective decision making by management on borrower

Responses	Frequency	Percent
Strongly Disagree	9	3.3
Disagree	15	5.5
Neutral	9	3.3
Agree	167	61.4
Strongly Agree	72	26.5
Total	272	100.0

Source; Survey Data (2018)

The results revealed that 87.9% agreed that banks management makes subjective decision making on borrowers which may increase the credit risk while only 8.8% disagreed that banks management makes subjective decision making on borrowers. This finding shows that according to majority, management subjective decisions n borrowers may affect the lending performance of commercial banks. This finding is supported by Greene & Segal (2014) in their study on influence of efficiency on profitability or the relationship between lending performance and market structure, found that a goal of policy-makers is to facilitate a banking system that best promotes economic efficiency and stability. Their results indicated that due to competitive environment, banks have promoted a culture of subjective lending in order to encouraging the greatest supply of credit at the lowest price which puts banks into credit risk.

Credit Approval over the Limit

The study wanted to find out if credit approval by the commercial banks over the limit exposes the banks to credit risk that can affect the lending performance. This was important since granting credit over the limits approved may lead the bank to lose its money to clients. The responses were as follows in table 8.

Table 8: Credit Approval over the Limit

Responses	Frequency	Percent
Strongly Disagree	10	3.7
Disagree	41	15.1
Neutral	13	4.8
Agree	140	51.5
Strongly Agree	68	25.0
Total	272	100.0

Source; Survey Data (2018)

The results revealed that 76.5% agreed that there is credit approval by the commercial banks which exceeds the credit limit of that that client which exposes the banks to credit risk and affects the lending performance while 18.8% did not agree that they is credit approval over the limit. This means that there is likelihood of borrower being given more than they qualify. This finding are supported by Greene & Segal (2014) in their study on influence of efficiency on profitability or the relationship between lending performance and market structure who their results indicated that due to competitive environment, banks have promoted a culture of lending to customers more than what they qualify which is harmful to the banks though it aids efficient allocation of resources in terms of concentration and competition.

Credit granted without taking into account the business cycle

The study investigated whether commercial banks were granting credit granted without taking into account the business cycle and as a result increasing credit risk.

Table 9: Credit granted without taking into account the business cycle

Response	Frequency	Percent
Strongly Disagree	20	7.4
Disagree	24	8.8
Neutral	1	.4
Agree	166	61.0
Strongly Agree	61	22.4
Total	272	100.0

Source; Survey Data (2018)

The results indicated that 83.4% of the respondents agreed that commercial banks grant loans without taking into consideration the business cycles while 16.2% disagreed that there are commercial banks that grant loans without taking into consideration the business cycles. This means that there is a majority of commercial banks that does not consider the business cycles when granting credit to borrowers. This finding is supported by Felix and Claudine (2008) investigated the relationship between bank performance and credit risk management. It could be inferred from their results that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. This study also found that there was declining profitability due to the risk that commercial banks grant loans without taking into consideration the business cycles when issuing business loans.

Banks have trained all credit officers on how to measure credit risk

The study investigated whether commercial banks have trained all credit officers on how to measure credit risk. This was important since it shows how banks are prepared in handling credit risks and lending performance.

Table 10: Banks have trained all credit officers on how to measure credit risk

Responses	Frequency	Percent
Strongly Disagree	20	7.4
Disagree	28	10.3
Neutral	12	4.4
Agree	154	56.6
Strongly Agree	58	21.3
Total	272	100.0

Source; Survey Data (2018)

The results indicated that 77.9% of the respondents agreed that commercial banks have trained all credit officers on how to measure credit risk while only 17.7% of the respondents disagreed that not all the credit officers are trained on how to measure credit risk. This means that majority of commercial banks have trained all their credit officers on how to measure credit risk. This finding is in agreement with those of Sobhy (2013) who did a study and found that banks incur significant costs in controlling overdue loans and this can naturally affect profitability levels. It was inferred from this study that employees were trained in credit risks since the major source of credit risk emanates from inappropriate credit policies, volatile interest rate, low capital and liquidity, direct lending, poor loan underwriting, poor loan lending, government intervention and improper supervision from the central bank.

Satisfaction of credit risk Measurement

The study investigated the level of satisfaction of credit risk Measurement by the commercial banks. This was to find out how the banks are satisfied with their credit risk Measurement in relation to their lending performance. Their responses were as indicated in table 4.23 below

Table 11: Satisfaction of credit risk Measurement

Responses	Frequency	Percent
Highly Satisfied	23	8.5
Slightly Satisfied	212	77.9
Neutral	11	4.0
Slightly Dissatisfied	20	7.4
Highly Dissatisfied	6	2.2
Total	272	100.0

Source; Survey Data (2018)

The results indicated that 77.9% which is a majority of the respondents were slightly satisfied with the credit risk measurement in commercial banks 9.6% were dissatisfied with credit risk measurement in commercial banks. This means that majority are not full satisfied with how this role is done by the commercial banks. This finding is in agreement with those of Khan and Ahmad (2001) conducted a survey of risk management practices and found that on average the lowest percentage is on the measuring and mitigating risk that is 69% score as which was rated as slight satisfaction with credit risk measurement. Also, the results of Al-Tamimi and Al-Mazrooei (2007) found that there is significant difference between UAE national and foreign banks in risk measuring though the difference was slightly satisfying.

Table11: Logistic Regression Estimation Results

Prob >chi2 = 0.0000		LR chi2(4) = 64.17	
Log likelihood = -24.61436		Pseudo R2 = 0.6974	
Variables	Odds Ratio	P> z 	Marginal effects (dy/dx)
Measurement	3.8420	0.0231**	.416546
**significant at 0.05 level of significance			

Table 11 shows the estimated results for the binary logistic regression with the odds ratios, p-values and the marginal effects of the four explanatory variables. The Pseudo R2 (0.6974) means that the model accounts for 69.74 percent of variations in the lending performance while the remaining 30.26 percent are accounted for by other factors that are not represented in the model. The overall significance of the model in predicting the relationship between the independent variables and lending performance is also confirmed by its goodness of fit as given by the p-value < 0.05

Testing of Hypothesis

Ho1: There is no significant relationship between measurements on lending performance of commercial banks in Nairobi County, Kenya.

The p-value for risk measurement (0.023) is statistically significant at a 5% level of significance. We therefore reject the null hypothesis and conclude that there is a significant relationship between credit risk measurement and lending performance of commercial banks.

The odd ratio for credit risk measurement (3.8420) indicates that holding all other factors affecting lending performance constant, commercial banks that carry out credit risk measurement are 3.84 times more likely to record better lending performance compared to banks that do not undertake risk measurement. The marginal effect (0.4165) implies that lending performance will improve by 41.65 percent given an improvement in credit risk measurement by commercial banks.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

The market of the Kenyan commercial banks sector has been changing rapidly, while the sector faces stiff competition. Despite this, the commercial bank sector performance is better than that of many other sectors. However, majority of banks within the sector have poorer lending performance than others as shown by lending performance indicators. This calls for investigation on the credit risk factors influencing lending performance in the sector.

The study sought to examine the influence of measurement on lending performance of commercial banks in Nairobi County, Kenya. Results revealed that risk measurement had positive influence on lending performance of commercial banks in Kenya. This is supported by the marginal effect which shows that risk measurements explain the variations in lending performance of commercial banks in Kenya. The test for significance also showed that the

influence was statistically significant and hence the alternate hypothesis was accepted. The study that commercial banks fail to thoroughly assess risk in the introduction of new products and do not install risk management system prior to launch of new products . With rapid credit growth and heightened competition, banks were pressured to introduce new products and services to the market without proper testing. The study also found that commercial banks were not in line with the principle of proper credit underwriting and such practice has led to serious problems. There was credit approval over the limit or overriding the policy and this contributed to credit risk. Credit overrides is highly unadvised. Risk measurements banks was affected by the fact that credit was being granted without taking into account of business cycle can cause an overly optimistic credit analysis. For example, businesses such as retail business, commercial real estate, real estate investment, and consumer lending tend to have strong cyclical effects. The study concluded that credit risk measurement was so much below the expected levels and this is a challenge across the entire sector. This have contributed more in exposing the banks to credit risk and as result the lending performance is affected.

Recommendations

The results indicated significant positive influence of credit risk measurement activities on lending performance of commercial bank sector in Kenya, implying their importance. The commercial bank managements should therefore ensure that their branches do not practice credit overriding in order to support their banks' lending performance. The KBA should lobby for application of the most recent technology by its members for use by the R&D department in conjunction with the ICT department for capacity to measures risks before introduction of new loan products or services by banks. CBK should also lobby for the application of the right technology and monitor technological infrastructure in all commercial banks. KBA and CBK should also ensure that all bank management adhere to the lending policies and take action against managers who contravenes lending policies and those who relies on subjective decision making especially when the borrower appears to have met the credit approval criteria. The banks should also have robust training programs with a view to learning how to take into account of their borrowers' business cycle during the loan cycle since the effect of business cycle is less than the effect of product cycle, especially new, rapidly growing products such as business related to telecommunication. The CBK and KBA should ensure that effective stress testing that incorporate the effect of business cycle and product cycle is one approach for credit decision process and should induce clearer understanding in credit risk.

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