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ABSTRACT

This study sought to bring to light the need for financial institutions to pay attention to the management of risk. The issue in this research was to analyse whether risk management practices in Kenyan commercial banks helps to improve performance of the banks. The specific objectives were; to assess the effect of credit risk management on financial performance of commercial banks in Kenya, to determine the effect of liquidity risk management on financial performance of commercial banks in Kenya, to determine the effect of interest rate risk management on financial performance of commercial banks in Kenya and to assess the effect of operational risk management on financial performance of commercial banks in Kenya. The study concluded that operational risk management was the key variable in determining performance of commercial banks in Kenya. The study also concluded that credit risk management significantly affects the financial performance of commercial banks because of failure of counterparties to fulfil their obligations. The findings of the study also established that liquidity risk management significantly influences financial performance of commercial banks. The study finally concluded that interest rate risk management also had a significant influence on financial performance even though it had a weak positive correlation to the dependent variable

Key Words: *Risk Management Practices, Credit Risk, Liquidity Risk, Operational Risk, Interest Rate*

INTRODUCTION

Risk management is an important concept in business, especially in the banking business. Recently, businesses put great emphasis on risk management as it affects their performance and survival in the business environment. Commercial banks face a lot of risk in their operations as they deal with cash whose value is unsecured. In addition, they provide other services to their consumers, such as lending and accepting deposits, which increases their risk exposure in the business environment. Therefore, it is necessary that commercial banks manage their exposure to risk and conduct proper analysis of borrowers before giving out loans.. In the past, risk management was not seen as a central component of the operations of most organizations in Kenya; rather, it wasrelegated to an office space at the corporateheadquarters. Sanusi (2011) expressed the combination of risk management and corporate governance flaws as a major factor responsible for the financial crisis.

The 2008 global economic and financial crisis erupted in the USA when Lehman Brothers Holdings, Inc. filed for Chapter 11 bankruptcy on 15 September 2008. The spread of this crisis worldwide raised questions about the effectiveness of risk management practices (RMPs) applied by banks, including those applied by well-established banks. Risk management failure is considered one of the main causes of the crisis (Bank for International Settlements, 2009; KPMG International, 2009; Sabato, 2009; Holland, 2010). The US Sarbanes Oxley Act of 2002 was enacted in response to the boom and bust of the dot.com market and obliges all companies quoted on the US stock exchanges to spend considerable sums of money in order to maintain their control systems.

The banking industry in Kenya is very sensitive and important to the economy in term of stability and growth. Regulations and supervisions have become imperative in the enforcement of rule and regulation and also in the judgment concerning the soundness of bank asset, bank management and capital adequacy (Ochieng, 2014). The Kenyan banking system has continued to record compliance with the minimum capital and liquidity prudential requirements. The prudential and financial stability indicators have shown that the financial sector is sound (Omondi, 2014). Risk management is a complex task for any organization and increasingly important in a world where economic events are linked. It is a two step process. The first is to identify the source of the risk, which is to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument (Loosemore *et al*., 2012). These risk management activities are affected by the risk behaviour of managers. A robust risk management framework can help organizations to reduce their exposure to risks, and enhance their financial performance (Fragniere & Sullivan, 2007). Further, it is argued that the selection of particular risk tools tends to be associated with the firm's calculative culture the measurable attitudes that senior decision makers display towards the use of risk management models.

A major objective of banks' risk management strategy is to increase shareholders' return signifying performance. The objective often comes at the cost of increasing risk. The banks motivation for risk management comes from those risks which can lead to banks underperformance. Mwangi (2014) revealed that some risk management practices do have significant effect on financial performance more than others i.e. the existence of a risk management policy and the integration of risk management in setting of organizational objectives were considered to be the key risk management practices that had a direct effect on financial performance. This means that although there are other determinants of performance not included in the study, the banks can improve their performance by focusing on developing strong risk management policies and integrating risk management in the process of setting achievable organizational objectives.

Risks are uncertainties that are always evident in all business establishments that are in place with the sole aim of making profits. Financial institutions in their part are exposed to various kinds of risks among them credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk, currency risk, commodity risk and operational risk which are the most applicable risk to the banks (Cooperman et al, 2000). According to Diffu (2011) the crisis that affected global financial stability and the economy in 2007-2009 has reinforced the need to rethink some of the approaches adopted by the financial community in assessing bank performance. To this end, it is important to obtain a comprehensive view of the key factors that may influence banks' performance, including the adequacy of business models in relation to risk appetite, and the question of how this adequacy is handled inside and outside banks through governance processes.

Commercial banks adopts different risk management policies majorly determined by ownership of the banks (privately owned, foreign owned, government influenced and locally owned) credit policies of banks, credit scoring systems, banks regulatory environment and management styles of the banks. The very nature of banking business is so sensitive because more than 85% of their liability is from depositors (Saunders's and Cornett, 2005). Studies done in the past have focused on the various aspects of risk management in Kenyan commercial banks. For instance, Tsuma and Gichinga (2016) also analyzed the factors that influence the bank's performance in financial perspective with focus on National Bank of Kenya and found that capital adequacy, credit risk, inflation and interest rates influenced financial performance but the study focused on a single commercial bank, which may not be representative of the whole Kenyan banking industry. Kamau (2010), conducted a study on the adoption of risk management by commercial banks in Kenya. This study sought to identify the risks encountered by commercial banks and the risk management practices adopted by commercial banks to mitigate against these risks. Further, the study wanted to establish the challenges faced by commercial banks in successful implementation of risk management.

This study sought to bring to light the need for financial institutions to pay attention to the management of risk. It is obvious that the aim of every business is to maximize shareholders wealth and acquire substantial profit either for expansion or to undertake new product development. Across the banking industry, the most prominent area that erodes the mass of their profit is risk management. The issue in this research was to analyse whether risk management practices in Kenyan commercial banks helps to improve performance of the banks hence the question: Does risk management have an effect on the financial performance of commercial banks in Kenya?

Objectives of the study

- To assess the effect of credit risk management on financial performance of commercial banks in Kenya
- To determine the effect of liquidity risk management on financial performance of commercial banks in Kenya
- To determine the effect of interest rate risk management on financial performance of commercial banks in Kenya.
- To assess the effect of operational risk management on financial performance of commercial banks in Kenya.

LITERATURE REVIEW

Theoretical Review

Loanable Funds Theory

It Assumes that interest rates are determined by supply of loanable funds and demand for credit. The loanable funds theory is an attempt to improve upon the classical theory of interest. It recognizes that money can play a disturbing role in the saving and investment processes and thereby causes variations in the level of income. Thus, it is a monetary approach to the theory of interest, as distinguished from that of the classical economists. 15 In fact, the loanable funds theory synthesizes both the monetary and non-monetary aspects of the problem (Wensheng,Wung and Shu, 2002).

According to the loanable funds theory, the rate of interest is the price that equates the demand for and supply of loanable funds. At the equilibrium level where demand =supply of loanable funds savers and investors are the happiest possible. Fluctuations in the rate of interest arise from variations either in the demand for loans or in the supply of loans or credit funds available for lending.Ngugi (2001) argud that interest is the price that equates the demand for loanable funds with the supply of loanable funds. Loanable funds are "the sums of money supplied and demanded at any time in the money market."The supply of 'credit' or funds available for lending would be influenced by the savings of the people and the additions to the money supply (usually through credit creation by banks) during that period.

Risk Management Theory

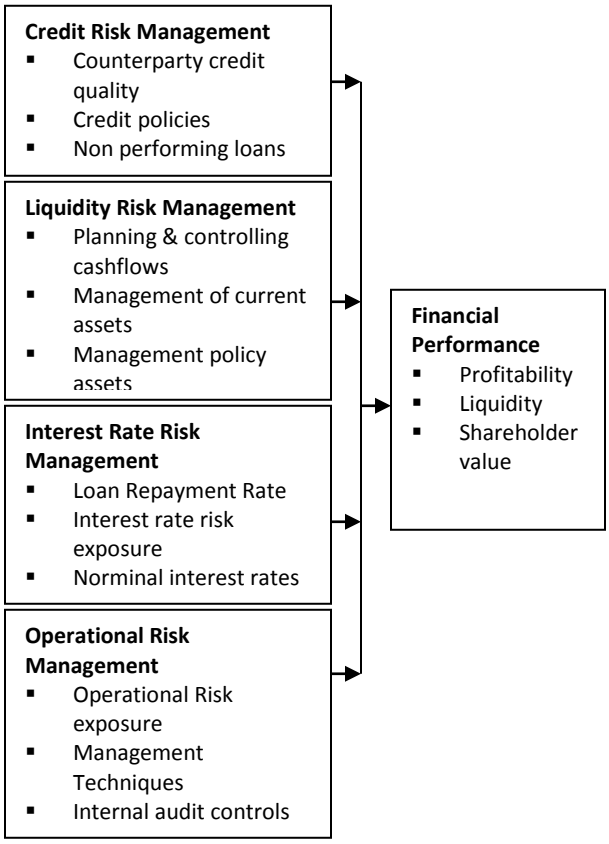
Wenk (2010), states that the risk management model consists of risk identification, risk assessment, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, transfer and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities. Risks can come from uncertainty in financial markets, project failures, legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attack from an adversary, or events of uncertain or unpredictable root-cause.

Several risk management standards have been developed including the Project Management Institute, the National Institute of Science and Technology, actuarial societies, and ISO standards. Methods, definitions and goals vary widely according to whether the risk management method is in the context of project management, security, engineering, industrial processes, financial portfolios, actuarial assessments, or public health 13 and safety (Simkins and Fraser, 2010).The strategies to manage risk typically include transferring the risk to another party, avoiding the risk, reducing the negative effect or probability of the risk, or even accepting some or all of the potential or actual consequences of a particular risk. In conducting RM, the following are listed as some of the areas or aspects of the organization that a risk manager need to look into namely: the people, intellectual assets, brand values, business expertise and skills, principle source of profit stream and the regulatory environment (Searle, 2008).

Contingency Planning Theory

According to Hisnson and Kowalski (2008), contingency planning (CP) also known as business continuity planning is a crucial element of risk management. The fundamental basis of Contingency Planning (CP) is that, since all risks cannot be totally eliminated in practice, residual risks always remain. Despite the organization's very best efforts to avoid, prevent or mitigate them, incidents will still occur. Particular situations, combinations of adverse events or unanticipated threats and vulnerabilities may conspire to bypass or overwhelm even the best information security controls designed to ensure confidentiality, integrity and availability of information assets (Hisnson and Kowalski, 2008).

Conceptual framework



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

Source: Author (2018)

Credit Risk Management

Credit risk arises whenever a lender is exposed to loss from a borrower, counterparty, or an obligator who fails to honour their debt obligation as they have contracted (Luy, 2010). Credit risk management is a critical component of a comprehensive approach to risk management as whole and essential to long-term success of a banking organization. It helps reduce bank losses. Credit risk management is very important to banks as it is an integral part of the loan process. It minimizes bank risks, adjusted risk rate of return by maintaining credit risk exposure with view of shielding the bank from adverse effects of credit risk. Bank are successful when the risks they take are reasonable, controlled and within their financial resources and competence (Machiraju, 2008). Bank managers should minimize credit losses by building a portfolio of assets (loans and securities) that diversify the degree of risk (Barbara, 2006). While it is accepted that all banks experience some loan losses, the degree of risk aversion varies significantly across institutions.

According to Colquitt (2007), this loss may derive from deterioration in the counterparty's credit quality, which consequently leads to a loss to the value of the debt, or the borrower defaults when he is willingly able to fulfil the obligations. Credit failure in banks is not new or a rare occurrence, they affect their liquidity position as well as cash flows and profits. Hence, Greuning and Bratanovic (2009) maintain that it is a biggest threat to any bank performance and the principal cause of bank failures. Cooper, Jackson & Patterson (2003) confirmed that fluctuations in credit risk bring changes in loan portfolios of banks which in return affect the bank performance. Default risk is the risk that the counterparty will default on its obligations to the investor. In this risk, the credit quality deteriorates (or default risk increases). Cultivating good loan customers and using credit-risk analysis to ensure that borrowers are credit worthy is central to a bank's long term profitability. A bank exists not only to accept deposits but also to grant credit facilities, therefore inevitably exposed to credit risk. According to Chen and Pan (2012), credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties.

Liquidity Risk Management

Liquidity is a bank's capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. The liquidity risk of banks arises from funding of long-term assets by short-term liabilities, thereby making the liabilities

subject to rollover or refinancing risk. Liquidity risk is usually of an individual nature, but in certain situations may compromise the liquidity of the financial system. Liquidity risk management in banks is defined as the risk of being unable either to meet their obligations to depositors or to fund increases in assets as they fall due without incurring unacceptable costs or losses. Effective liquidity risk management helps ensure a bank's ability to meet its obligations as they fall due and reduces the probability of an adverse situation developing, Kumar and Yadav (2013).

Banks face two central issues regarding liquidity. Banks are responsible for managing liquidity creation and liquidity risk. Liquidity creation helps depositors and companies stay liquid, for companies especially when other forms of financing become difficult. Managing liquidity risk is to ensure the banks own liquidity so that the bank can continue to serve its function, Vossenand Ness (2010).According to Devinaga Rasiah (2010) commercial banks are required by regulators to hold a certain level of liquidity assets. And the reason behind this regulation is to make sure that the commercial banks always possess enough liquidity in order to be able to deal with bank runs. He further argue that a bank assume the status of highly liquid only if it has been able to accumulate enough cash and have in possession other liquid assets as well as having the ability to raise funds quickly from other sources to be able to meet its payment obligation and other financial commitments on time. According to Dang (2011) adequate level of liquidity is positively related with bank profitability. Thus banks that maintain adequate levels of liquidity tend to be more profitable. The most common financial ratios that reflect the liquidity position of a bank are customer deposit to total asset and total loan to customer deposits.

Interest rate risk Management

The acceptance and management of financial risk is inherent to the business of banking and banks' roles as financial intermediaries. To meet the demands of their customers and communities and to execute business strategies, banks make loans, purchase securities, and take deposits with different maturities and interest rates. These activities may leave a bank's earnings and capital exposed to movements in interest rates. This exposure is known as interest rate risk. English (2002) argued that banks and their supervisors have spent considerable time and effort in recent years developing systems for monitoring and managing interest rate risk. Wide deposit-lending interest rate margin could be indicative of banking sector inefficiency or a reflection of the level of financial developments (Folawewol and Tennant, 2008). Falling interest rate are accompanied by recession, causing an increase in loan losses and a slower growth in loans.

Crowley (2007) defined loan repayment rate as money borrower pays for the use of money they borrow from a lender, financial institutions or fee paid on borrowed assets. Amonoo et al, (2003) argued that lenders of funds in the formal financial sector use the deposits of their clients whilst lenders operating in the informal sector use mainly their own funds to advance money to borrowers. In either case, the transactions are expected to lead to recouping the financial capital. Lending rates should be lowered or adjusted very frequently with the level of real-world imperfection which decreases with pace of economic development and growth of an economy (Amonoo et al, 2003). Interest has indirect impact on financial performance through impacting economy, high interest rate to borrowers discourages borrowing this result to shrinked investment through multiplier effects savings are reduced and this will have negative impact on banks performance argued by Ngugi (2004). Stiglitz and Weiss (1981) believe that high interest rates are responsible for higher defaults and declining bank profit. These clearly provide support to our hypothesis that high interest rates are positively correlated to loan defaults in developing countries. Amonoo et al, (2003) suggested that real

rate of interest must be lower than real return on capital. It means that as the financial market becomes more and more efficient with the process of development, lending rates should be lowered than before which may contributes towards reduced level of loan defaults. Calice, Chando, & Sekious (2012) Argued that the majority of the banks (56 percent) allow past SME losses to affect the pricing of future loans, specifically interest rates. Hassan and Khan (2010) assert that when lending rates rise, banks on average attract riskier investments which require a higher return on investment. They continued to assert that higher interest rates also made a lot of creditworthy borrowers to shy off from borrowing.

Operational Risk Management

Operational risk is as old as the banking industry itself and yet the industry has only recently arrived at a definition of what it is. Operational risk is defined by the Basel Committee on Banking Supervision as: "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk but excludes strategic and reputational risk. A recent Chartis Research's report on ORM systems, suggests that the worldwide financial services ORM market will continue to grow, reaching a total value of $1.55 billion by 2011. This indicates a growing concern among banks and financial institutions for managing their operational risk. Martin (2009) argues that the culture of an organization is critical to its success in managing operational risk. Operational risk according to the author has two causes, an act of God (flood, earthquake and windstorm) and a person. People, who are at the heart of the culture of an organization design and maintain processes and systems and cause operational risk events by either doing something they should not be doing or not doing something that they should be doing. He argues that the culture of an organization is critical to its success in managing operational risk.

The exposure to different kinds of operational risk is nothing new for the individual bank, but as Moosa (2007) stresses; "The trend towards greater dependence on technology, more intensive competition, and globalization have left the corporate world more exposed to operational risk than ever before." The emergence of banks acting as large volume service providers creates the need for continual maintenance of high grade internal controls and backup systems. According to the Credit-Suisse Group (2001), banks may engage in risk mitigation techniques to optimize the exposure to market and credit risk but which may in turn produce other forms of risk like operational risks which the group categorized as organizational risks, process risks, technology risks, human risks and external risks. While the main component of risk management is to measure the scope and extent of an institutions risk exposures (Lopez, 2002), operational risk entails all risks, not covered by market and credit risk but have a measurable financial impact on the organization (Rippel & Teplý, 2011). For banks, the occurrence of an extreme and major "one-off event in its daily operations may even be more damaging than its credit losses in connection to the current collapse of the financial markets. However, the ability of the bank to properly assess and control, or hedge itself against, the negative economic consequences of such events seems to be less developed than its management of credit and market risks,(Flores, Ponte & Rodríguez 2006).

Financial Performance

According to the business dictionary financial performance involves measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firms return on investment, return on assets and value added. Stoner (2003) as cited in Turyahebya (2013), defines financial performance as the ability to operate efficiently, profitably, survive, grow and react to the environmental opportunities and threats. Solvency

measures give an indication of a firm's ability to repay all its indebtedness by selling all of its assets. It also provides information about a firm's ability to continue operating after undergoing a major financial crisis. According to Toutou and Xiaodong (2011), financial performance is a general measure of how well a bank generates revenues from its capital. It also shows a bank‟s overall financial health over a period of time, and it helps to compare different banks across the banking industry at the same time. The bank‟s financial performance generally can be recognized as its stability and profitability. The stability refers to its risk factors and profitability refers to its financial return.

Financial performance is company's ability to generate new resources, from day-to-day operations, over a given period of time and performance is gauged by net income and cash from operations. The financial performance of commercial banks is of great importance on its future operating activities. The first thing to know about the financial performance is the profitability before turning to the debt and liquidity analysis. Recall that the ability of financial institutions to produce dividends and capital gains in the future is what gives stock its value. The ability to make timely interest payments does not compare with the ability of a firm to be profitable. However, once the firm's profitability has been assessed, then financial institutions can meet their current and future obligations (Haim and Post, 2005. Hagel, Brown and Davison (2010) who proposed that most economic analysts and investors tend to focus on return on equity as their primary measure of company performance. ROE focuses on return to the shareholders of the company. If you are a shareholder, this gives you a quick and easy to understand metric.

METHODOLOGY

Mugenda & Mugenda (2003) describe a research design as the plan or structure of investigation conceived to obtain answers to research questions that includes an outline of the research work to enable the representation of results in a form understandable by all. A descriptive and analytical research design was adopted for this study. However, the choice of method to gather data was a questionnaire in this instance. This was important for this particular study as it made it possible for the research to not only gather information on the study, but might be also capable of gathering additional information on any other impact that risk management might have on other areas other than financial performance. The importance of the decision to make use of descriptive survey method in this study can thus not be overestimated. The target area of the study was 13 commercial banks in Mombasa. The target population was drawn from KCB, Consolidated Bank, SC Bank, Family bank, CO-OP bank, NIC bank, Habib AG Zurich, Barclays bank, DTB, Citi bank, GAB, Guardian bank and National bank. These banks were situated along Nkurumah Road. The region and banks were chosen due to their proximity to the researcher as well as having the presence of several major banks that have set their operations in the region. In addition, these banks had to deal with numerous risks in the Kenyan economy that put their business at the potential of decline or failure. The primary target population was therefore the risk and financial managers, operation managers and auditors in these commercial banks. A multiple regression model was used in the study taking the form below:

$Y=\beta 0 + \beta 1X1 + \beta 2X2 + \beta 3\ X3 + \beta 4X4 + \varepsilon$

Where:Y= Financial Performance

β= Beta Coefficient –This measures how many standard deviations a dependent variable will change, per standard deviation increase in the independent variable.

X1= Credit Risk Management

X2= Liquidity Risk Management

X3= Interest Risk Management

X4= Operational Risk Management

ε = the error term

Hypothesis Testing

There are two types of hypotheses which include null hypothesis Ho and alternative hypothesis H_1 .At 95% confidence level, Z test and F test were used in the study as a reference in rejecting or accepting the hypothesis.

($\alpha = 0.05$), thus when p-value is less than or equal to 0.05 it is significant; When p-value is greater than or equal to 0.05 it is not significant

Table 1: Hypothesis Testing

Hypothesis Statement	Hypothesis Test	Decision Rule
H_{O1}: There is no relationship between Credit risk management and financial performance of commercial banks in Mombasa County, Kenya.	F-test (ANOVA) T-test **H_O**: $\beta 1=0$; **H_O**: $\beta 1 \neq 0$	Reject **H_{O1}** if P- value ≤ 0.05 otherwise fail to reject **H_{O1} if** P-value > 0.05
H_{O2}: There is no relationship between liquidity risk management and financial performance of commercial banks in Mombasa County, Kenya.	F-test (ANOVA) T-test **H_O**: $\beta_2=0$; **H_O**: $\beta_2 \neq 0$	Reject **H_{O2}** if P- value ≤ 0.05 otherwise fail to reject **H_{O2} if** P-value > 0.05
H_{O3}: There is no relationship between interest rate risk management and financial performance of commercial banks in Mombasa County, Kenya.	F-test (ANOVA) T-test **H_O**: $\beta_4=0$; **o**: $\beta_4 \neq 0$	Reject **H_{O4}** if P- value ≤ 0.05 otherwise Fail to reject **H_{O4} if** P-value > 0.05
H_{O4}: There is no relationship between operational risk management and financial performance of commercial banks in Mombasa County, Kenya.	F-test (ANOVA) T-test **H_O**: $\beta_4=0$; **H_O**: $\beta_4 \neq 0$	Reject **H_{O4}** if P- value ≤ 0.05 otherwise Fail to reject **H_{O4} if** P-value > 0.05

RESEARCH FINDINGS

Client's appraisals

Referring to Table 2 below, the researcher wanted to find out the extent to which commercial bank appraise client's ability to repay loans. The findings were tabulated as shown in the table below. As indicated in the table below, 49% of the respondents' responded as "very great extent", 32.7%, "great extent", and 8.2% of respondents responded as "moderate and low extent" and finally 2% of respondents responded as not at all. This implies that commercial banks highly appraise their client's ability to repay loans before advancing them credit facilities.

Table 2: Clients loan appraisals

	Frequency	Percentage
Very great extent	24	49.0
Great extent	16	32.7
Moderate extent	4	8.2
Low extent	4	8.2
Not at all	1	2.0
Total	**49**	**100.0**

Effect of Credit risk Management on financial performance of Commercial Banks

The researcher requested the respondents to indicate the extent to which credit risk management affects financial performance in commercial banks in Kenya. Their views were summarized and ranked. Most of the respondents strongly agreed with a mean score of 4.10 and standard deviation of 1.531, that failure of counterparty to meet their obligations affects the banks' profits. Majority of the respondents were in agreement that deterioration of counterparty credit quality leads to loss of debts. This was indicated by a mean score of 3.98 and standard deviation of 1.689. Respondents views agrees with Owojori et al., (2011) argument that inability by banks to collect loans and advances extended to customers and creditors is a major contributor to the of liquidity in commercial banks. Coyle (2000) equates this inability to a loss due to inability by credit customers to pay what is owed in full and on time. From the analysis, inappropriate credit policies and poor management leads to solvency and liquidity problems. This was shown by a mean score of 3.92 and standard deviation of 1.512. As to whether credit risk management helps bank to remain profitable and solvent, had the lowest mean score of 3.63 as indicated in the table below. The findings agreed with Achou and Tenguh (2008) who conducted a research on bank performance and credit risk management, found that there was a significant relationship between financial institutions performance (in terms of profitability) and credit risk management (interms of loan performance). Better credit risk management results in better performance.

Table 3: Effect of Credit risk on Financial Performance

	Mean	Std. Deviation
Failure of counterparty to meet his/her obligation affairs banks' profits	4.10	1.531
Credit risk management helps bank to remain profitable & solvent	3.63	1.834
Deterioration of counterparty credit quality leads to loss of debts	3.98	1.689
Inappropriate credit policies and poor management leads to Solvency & liquidity problems	3.92	1.512
Valid N (listwise)		

Liquidity Risk Management

Referring to table 4 below, the researcher wanted to find out the extent to which commercial banks uses liquidity risk controls to manage liquidity risk. The findings was summarized as indicated in the below table. As indicated in the table, 44.9% of the respondents' responded as "very great extent", 26.5%, "great extent", 6.1% "moderate", 18.4% "low extent" and 4.1% "Not at all". This implied that banks realised that liquidity risk management policies were vital to avoid liquidity shortfall.

Table 4: Liquidity risk management

	Frequency	Percentage

Very great extent	22	44.9
Great extent	13	26.5
Moderate extent	3	6.1
Low extent	9	18.4
Not at all	2	4.1
Total	**49**	**100.0**

Effect of Liquidity risk Management on financial performance of Commercial Banks

The researcher wanted to assess the effect of liquidity risk management on financial performance of commercial banks. The respondents were asked to indicate their views. From the data presented, it was evident that majority of the respondents as indicated in Table 5 below, agreed that planning and controlling of cash flows was crucial in meeting day commitments. This had the highest mean score 4.10. This is in support of Collis and Jarvis (2000) observation that prudent management and control of liquidity helps banks to meet day-to-day commitments. The statement relating to effective management policies help reduce liquidity risk in the banks had a lowest rating with a mean score of 3.31. According to Duttweiler (2009), efficient and effective liquidity management is key if the survival and prosperity of organizations firms is to be assured. Therefore, the inability of banks to raise liquidity could be as a result of maturity mismatch between inflows and outflows and/or the sudden and unexpected liquidity needs arising from contingency conditions. On whether commercial banks has to accumulate enough cash and to maintain liquid assets to meet its financial obligations, respondents responded in agreement as indicated with a mean score of 3.98 and standard deviation of 1.689. This is in line with Devinaga (2010) observation that commercial banks are required to maintain a certain level of liquidity to it meet its financial obligations. These findings agree with Emami et al. (2013) who studied the effect of liquidity risk on the performance of commercial banks that liquidity risk has a significantly negative effect on both criteria of the performance i.e. return on asset and return on equity. It means that liquidity risk will cause to weaken the performance of bank.

Table 5: Liquidity risk Management and financial performance

	N	Mean	Std.Deviation
Appropriate management techniques/policies help reduce liquidity risk	49	3.31	1.758
Planning and controlling of cash flows is crucial in meeting day commitments	49	4.10	1.531
Monitoring of liquidity risk is essential to ensure stability in the balance sheet &maintaining adequate liquidity	49	3.27	1.777
A commercial bank has to accumulate enough cash and	49	3.98	1.689

maintain liquid assets to meet its financial obligations

Valid N (listwise)	49

Interest rates risk Management

Referring to the Table 6 below, the researcher wanted to find out how commercial banks uses interest rates risk controls to manage interest rate risk. The findings as summarized in the table below shows that 24.5% of the respondents' responded as "very great extent", 46.9%, "great extent" , 16.3% "moderate", 12.2% "low extent" and 0% " Not at all". This implied that commercial banks use interest risk controls at a great extent.

Table 6: Interest rate risk management

	Frequency	Percentage
Very great extent	12	24.5
Great extent	23	46.9
Moderate extent	8	16.3
Low extent	6	12.2
Total	**49**	**100.0**

Effect of Interest rates risk Management on Financial Performance of Commercial Banks

The researcher wanted to investigate the effects of interest rates risk management on financial performance of commercial banks. From the data presented, it was evident that majority of the respondents agreed that high interest rates from loans results to high profits and good performance of commercial banks. This concurs with Khawaja, Musleh, (2007), that increase in the interest rate depresses the borrowers and depositors, but does not affect the bank's performance because, by charging high interest rate banks gain high returns (profit) from borrowers it discourages depositors due to low return on investment. Respondents responded in agreement with a mean score of 3.86 and standard deviation of 1.443 that a rise in nominal interest rate depletes a bank's economic capital and fall in market value of assets and liabilities. The research findings are in support of (Van den Heuvel, 2002, 2007) argument that if nominal interest rates rise, the resulting loss depletes a bank's economic capital and brings it closer to regulatory or market requirements. In such a circumstance, the bank's ability to restore its required capital level by issuing new equity will be limited, because equity issuances are costly due to asymmetric information between existing and potential new shareholders (Myers and Majluf, 1984; Kashyap and Stein, 1995; Myers, 2001). As a result of this, the bank will be forced to reduce its lending in order to remain complaint with the capital requirements imposed by regulators or market participants. On the other hand, low nominal interest rates expose banks interest risk substantially (Turner, 2013). The statement that commercial banks faces uncertainty in short term money market interest rates as opposed loan interest rates, respondents, responded in agreement with the statement as shown with a mean score of 4.18 and standard deviation of 1.333. And, on whether high rates on deposits attracts large deposits by maintaining its capital requirement and increase in lending which results to high profits, had a mean score of 3.86 and a standard deviation of 1.323.This findings concurs

Zaman et al. (2013) who conducted a study to determine the impact on interest rate on the profitability of commercial banks in Pakistan. It was established the interest rate has a significant impact on the profitability of banks. An increase in interest rates causes a higher lending rate more than the deposit rate, which results in profits.

Table 7: Interest rates risk Management and financial performance

	N	Mean	Std. Dev
High interest rates from loans result to high profits and good performance	49	3.84	1.599
Rise in nominal interest rate depletes a banks economic capital and fall in market value of assets and liabilities	49	3.86	1.443
Commercial banks face uncertainty in short term money market interest rates as opposed loan interest rates	49	4.18	1.333
High rates on deposits attracting large deposits maintaining its capital requirement and increases lending which results to high profits	49	3.86	1.323
Valid N (listwise)	49		

Operational risk Management

Referring to table 8 below, responds were requested to indicate how commercial banks use operational risk controls to manage operational risks. The findings as summarized in the table below shows that 42.9% of the respondents' responded as "very great extent", 36.7%, "great extent" , 14.3% "moderate", 4.1% "low extent" and 2% " Not at all". This implies that commercial banks employ operational risk controls to a very great extent.

Table 8: Operational risk management response

	Frequency	Percentage
Very great extent	21	42.9
Great extent	18	36.7
Moderate extent	7	14.3
Low extent	2	4.1
Not at all	1	2.0
Total	**49**	**100.0**

Effect of Operational risk Management on Financial Performance of Commercial Banks

In trying to determine the effect of operational risk on financial performance in commercial banks, respondents were requested to respond to a set questions related to operational risk in commercial banks in Kenya. From the analysis, it was evident that majority of the respondents with a mean score of 3.88, indicated that operational risk exposed other types of risks such as credit and the actual risk

exposure aligned with the overall risk appetite of the institution (Holmes, 2003). The response on impact of active management techniques on the frequency and severity of operational losses had lowest response of mean score of 3.31.On whether lack of operational risk management practices results to huge amount of losses hence reducing profits, respondents, responded with a mean 3.63 and standard deviation of 1.834. This is in line with Martin (2009) that the culture of an organization is critical to its success in managing operational risk. Respondents were neutral with a mean score of 3.37 and standard deviation 1.704 on whether manuals procedures have to be in place and adhered to in order to minimize operational risk. The study findings agree with Habib et al. (2014) who studied the impact of operational risk management on bank performance in Pakistan and concluded that risk management can enhance organizational performance while operational risk management is effective in the banking institutions of Pakistan.

Table 9: Operational risk Management and financial performance

	N	Mean	Std. Deviation
Manuals and procedures have to be in place and adhered to in order to minimize operational risk	49	3.37	1.704
Lack of operational risk management practices results to huge amount of losses hence reducing profits	49	3.63	1.834
Active management techniques have an impact on frequency and severity of operational losses incurred by banks	49	3.31	1.828
Operational risk is the cause of exposure to other types of risks such as credit hence the actual risk exposure must be aligned with the overall risk appetite of the institution	49	3.88	1.438
Valid N (listwise)	49		

Financial performance in Commercial Banks

The respondents were asked to indicate their views in support or non-support on statement related to financial performance of commercial banks in Kenya. From the data presented, the analysis revealed that majority of the respondents were in support of the statement that liquidity mitigation on current assets and liabilities eliminates the risk of poor investments and inadequate economic capital. This had the highest response mean score of 3.92 and standard deviation of 1.512. Response on whether or not implementation of credit risk policies reduces variability in profits and financial distress had the lowest response of a mean score of 3.31 and standard deviation of 1.758. With a mean response of 3.88 and standard deviation of 1.438, respondents agreed that poor financial risk management of commercial banks affects financial performance. The findings agrees with (Kithinji, 2010) suggestion that, poor management, inappropriate laws, poor loan underwriting, laxity in credit assessment, poor lending practices and inadequate supervision by the central bank affects financial performance of commercial banks which can lead to liquidity and solvency problems. The statement that risk management techniques reduces frequency or risks

hence improves performance had a mean score of 3.63 and standard deviation of 1.834.The response concurs with (Mikes & Kaplan, 2014) findings that techniques of risk identification helps to maximize the opportunity of identifying all the risks or hazards inherent in a particular facility, system, or product. On whether credit risk policy implementation reduces variability in profits and financial distress, respondents were neutral in their responses as indicated by a mean score of 3.31 and standard deviation of 1.758. However, study findings on various aspects of risk management in Kenyan commercial banks by Tsuma and Gichinga (2016) concluded that credit risk policies have significant influence on financial performance of commercial banks. The statement that liquidity mitigation in current assets and liabilities eliminates the risk of poor investments and inadequate economic capital had the support of respondents with a mean score of 3.92 and standard deviation of 1.512. The research findings concurs with (Iqbal & Mirakhor, 2007) findings that a robust risk management framework can help organizations to reduce their exposure to risks, and enhance their financial performance. The research findings is also in agreement with Bank for International Settlements, 2009; KPMG International, 2009; Sabato, 2009; Holland, 2010) study on risk management failure as the main causes of the crisis in banks.

Table 10: Financial performance

	N	Mean	Std.Deviation
Poor financial risk management of commercial banks affects financial performance	49	3.88	1.438
Risk management techniques reduces frequency or risks hence improves performance	49	3.63	1.834
Implementation of credit risk policies reduces variability in profits and financial distress	49	3.31	1.758
Liquidity mitigation in current assets and liabilities eliminates the risk of poor investments and inadequate economic capital	49	3.92	1.512
Valid N (listwise)	49		

Regression analysis

The table below showed the coefficient of determination (R^2) to be 0.771. The R^2 explains goodness of fit of the study data to the OLS regression model. This meant that 77.1% of variability in dependent variable could be explained by change in the independent variables credit risk management, liquidity risk management, interest rates risk management and operational risk management. The remaining 22.9% of variability can be explained by other factors which were not included in the model.

Table 11: Model Summary

Model	R	R Square	Adjusted R	Std. Error of

Square			the Estimate	F Change	Sig.
1	.878[a]	.771	.750	1.878	37.040	.000

a. Predictors: (Constant), Operational_Risk, Liquidity_Risk, Interest_Risk, Credit_Risk

b. Dependent Variable: Financial performance

Analysis of Variance (ANOVA)

The study used ANOVA F-Test to establish the significance of the regression model. The table below presented the F statistic which was used to test the significance of the relationship between the dependent and the independent variables. From the table the F value was 37.040 and p-value was 0.000. The model was considered significant if p-value was less than or equal to 0.05. This showed that the model was statistically significant and that credit risk management, liquidity risk management, interest rates risk management and operational risk management influence organization's financial performance, and based on confidence level at 95% the analysis shows that the relationship between the variables is statistically significant.

Table 12: Analysis of Variance

Model	Sum of Squares		df	Mean Square	F	Sig.
1	Regression	488.482	4	122.121	37.040	.000b
	Residual	145.069	44	3.297		
	Total	633.551	48			

a. Dependent Variable: Performance

b. Predictors: (Constant), Operational_Risk, Liquidity_Risk, Interest_Risk, Credit_Risk

Table 13: Multiple Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	3.930	2.034		1.932	.000
Credit_Risk Mgt	0.369	0.089	0.393	4.151	.000
Liquidity_Risk Mgt	0.323	0.083	0.337	3.906	.000
Interest_Risk Mgt	0.229	0.100	0.103	2.296	.000
Operational_Risk Mgt	0.436	0.079	0.478	5.503	.000

a. Dependent Variable: Financial performance

From the table above, regression equation can be established as follows;

The general regression Model arrived at was Y = 3.930 + $0.369X_1$ + $0.323X_2$ + $0.229X_3$ +$0.436X_4$ whereby:

Y= Financial performance, X_1= Credit risk, X_2 = Liquidity risk, X_3= Interest rates risk and X_4 = Operational risk

The following section sought to interpret the regression coefficients of independent variables in terms of their effect on the dependent variable.From the above regression equation it was revealed that holding credit risk management, liquidity risk management, interest rate risk management and operational risk management at a constant zero, financial performance will be 3.930.the data findings analysed show that taking all other independent variables at zero, a unit change in credit risk management will lead to a 0.369 change in financial performance, a unit change in liquidity risk management will lead to a 0.323 change in financial performance, a unit change in interest rate management risk will lead to a 0.229 change in financial performance and a unit change in operational risk management will lead to a 0.436 change in financial performance.

The regression model also shows that all of the tested variables had positive relationship with financial performance in commercial banks with all the variables tested being statistically significant with p-values which were less than 0.05.

Correlation Analysis

To establish the relationship between the independent variables and the dependent variable the study conducted correlation analysis which involved coefficient of correlation and coefficient of determination.

Coefficient of correlation

In trying to show the relationship between the study variables and their findings, the study used the Karl Pearson's coefficient of correlation (r) which should give a value between +1 to -1. Where 1 indicates a strong positive relationship,-1 a strong negative correlation and 0 indicates no relationship at all. According to the findings, it was clear there was a positive correlation between the independent variables, credit risk management, liquidity risk management, interest rate risk management and operational risk management and dependent variables financial performance. The analysis indicates that there was a very strong positive correlation between credit risk management and financial performance ($r = 0.734$, $p < 0.05$). There was a moderate positive correlation between liquidity risk management and financial performance ($r = 0.462$, $p< 0.05$). There was a weak positive correlation between interest rate risk management and financial performance($r = 0.232$, $p< 0.05$).There was a strong positive correlation between operational risk management and financial performance ($r = 0.648$, $p < 0.05$). This indicates that there is a positive relationship between independent variables and the dependent variable financial performance in commercial banks in Kenya. This is because all the p-values were less than 0.05.

Table 14: Correlations

	Performance	Credit_Risk	Liquidity_Risk	Interest_Rate	Operation_Risk
..Performance	1				
Sig. (2-tailed)					

Credit_Risk	.734**	1			
Sig. (2-tailed)	.000				
Liquidity_Risk	.462**	.457**	1		
Sig. (2-tailed)	.001	.001			
Interest_ Risk	.232	.061	-.211	1	
Sig. (2-tailed)	.000	.000	.000		
Operational_Risk	.648**	.397**	-.059	.369**	1
Sig. (2-tailed)	.000	.000	.000	.000	

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

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

Hypothesis 1

H_{01}: Credit risk management has no significant effect on financial performance of commercial banks in Kenya.

β = 0,

H_{02}: Credit risk management has significant effect on financial performance of commercial banks in Kenya.

β ≠ 0,

In relation to the variable credit risk management, the results indicated that credit risk has a significant effect on financial performance. This was supported by regression analysis t-value of 4.151 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05.

After testing the hypothesis by comparing the scores of calculated t-value and critical t calculated t-value was 4.151 for credit risk, which is greater that the critical t_{36-1} (0.05) = 2.0, the study rejected the null hypothesis that there is no significant effect of credit risk management on financial performance of commercial banks in Kenya.

Therefore the study accepted the alternative hypothesis that credit risk management has a significant effect on financial performance of commercial banks in Kenya. This confirms what (Kithinji, 2010) found out in his study that an increase in bank credit risk gradually leads to liquidity and solvency problems.

Hypothesis 2

H_0: Liquidity risk management has no significant effect on financial performance of commercial banks in Kenya.

β = 0,

H_1: Liquidity risk management has significant effect on financial performance of commercial banks in Kenya

β ≠ 0,

In relation to the variable liquidity risk management, the results indicated that liquidity risk has a significant effect on financial performance. This is supported by regression analysis t-value of 3.906 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05.

After testing the hypothesis by comparing the scores of calculated t-value and critical t calculated t-value was 3.906 for liquidity risk management, which is greater that the critical t_{36-1} (0.05) = 2.0, the study rejected the null hypothesis that there is no

significant effect of liquidity risk management on financial performance of commercial banks in Kenya.

Therefore the study accepted the alternative hypothesis that liquidity risk management has a significant effect on commercial banks in Kenya. These findings agree with Tabari, Ahmadi and Emam (2013) that liquidity weakens financial performance.

Hypothesis 3

H_0: Interest rate risk management has no significant effect on financial performance of commercial banks in Kenya.

$\beta = 0$,

H_1: Interest rate risk management has a significant effect on financial performance of commercial banks in Kenya

$\beta \neq 0$,

In relation to the variable interest rate risk management, the results indicated that interest risk management has a significant effect on financial performance. This is supported by regression analysis t-value of 2.296 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05.

After testing the hypothesis by comparing the scores of calculated t-value and critical t calculated t-value was 2.296 for interest rate risk management, which is greater than the critical t_{36-1} (0.05) = 2.0, the study rejected the null hypothesis that there is no significant effect of interest rate risk management on financial performance of commercial banks in Kenya.

Therefore the study rejected the null hypothesis that interest rate risk management has no significant effect on financial performance of commercial banks in Kenya. The findings are in agreement with Saunders & Cornett (2003) who concluded that interest rate shocks result in losses in the market value of assets which ultimately affects net worth of a commercial bank.

Hypothesis 4

H_0: Operational risk management has no significant effect on financial performance of commercial banks in Kenya.

$\beta = 0$,

H_1: Operational risk management has a significant effect on financial performance of commercial banks in Kenya.

$\beta \neq 0$,

In relation to the variable operational risk management, the results indicated that operational risk has a significant effect on financial performance of commercial banks. This is supported by regression analysis t-value of 5.503 which is greater than the critical value 2.0 and a p-value of 0.00 at 95% level of significance which is less than 0.05.

After testing the hypothesis by comparing the scores of calculated t-value and critical t calculated t-value was 5.503 for operational risk, which is less than the critical t_{36-1} (0.05) = 2.0, the study rejected the null hypothesis that there is no significant effect of interest rate risk on financial performance of commercial banks in Kenya.

Therefore the study accepted the alternative hypothesis that operational risk management has a significant effect on financial performance of commercial banks in Kenya. The findings concur with Laker (2006) that greater complexity of banking activity and increasing dependence on technology and specialist skills has made operational risk as one of the most important risk facing banking institutions.

Table 15: Hypothesis Testing Results

Hypothesis Statement	p-values	Decision Rule
H_{O1}: There is no significant effect of Credit risk management and financial performance of commercial banks in Mombasa County,	0.000	Reject **H_{O1}**

Kenya.		
H_{O2}: There is no significant effect of liquidity risk management and financial performance of commercial banks in Mombasa County, Kenya.	0.000	Reject H_{O2}
H_{O3}: There is no significant effect interest rate risk management and financial performance of commercial banks in Mombasa County, Kenya.	0.000	Reject H_{O3}
H_{O4}: There is no significant effect of operational risk management and financial performance of commercial banks in Mombasa County, Kenya.	0.000	Reject H_{O4}

CONCLUSIONS

Banks are the backbone of the financial system in most developing countries and will remain so for the foreseeable future. Thus, banking sector will remain fundamental to shaping the financial system and ensuring financial stability. The findings from the instruments used for data analysis and interpretation were logged, and from the research study, it was apparent that credit risk management, liquidity risk management, interest rates risk management and operational risk management are the main determinants to the performance in commercial banks in Kenya. To achieve their vision, mission and goals, commercial banks should focus on these variables.

The study concluded operational risk management was the key variable in determining performance of commercial banks in Kenya. This shows that the banks should continue to improve their operational risk management in order to restore the confidence of customers, stakeholders and regulators. Banks also need to determine from time to time whether their risk management approaches are equipped to manage any emerging threats.

The study also concluded that credit risk management significantly affects the financial performance of commercial banks because of failure of counterparties to fulfil their obligations. The study also concluded that an increase in nonperforming loans increase credit risk which adversely affects financial performance.

The findings of the study established that liquidity risk management significantly influences financial performance of commercial banks. This indicates that an increase in commercial banks liquidity provides adequate funds for lending which in turn increases interest income and profitability. The study thus concludes that high levels of liquidity provides adequate funds to lend which in turn increase interest income hence banks' profitability.

The study concluded that interest rate risk management also has a significant influence on financial performance even though it had a weak positive correlation to the dependent variable. Interest rates charged had a negative effect on the performance of the loans, the higher the interest rates the lower the loan performance.

The study also concludes that risk identification and mitigation play the most significant role in influencing financial performance of commercial banks. Hence, risk identification can essentially be said to be the key starting point of any risk management program as banks cannot manage what is unknown. On the other hand, once identified, risks must be mitigated so that the impact on the firm is reduced.

RECOMMENDATIONS

The study established that the credit risk management and control is of crucial importance in ensuring that the supervised entity hold adequate capital against the risk involved in business and the potential losses on incurred risk is a key element in

risk management. It is therefore recommended that management ought to adapt their crediting-related activities to the changing conditions andcome up with credit policies and strategies that will not only limit the banks exposition to credit risk but also establish a proper credit risk management strategies by conducting sound credit evaluation before granting loans to customers.

The study revealed that among the four variables discussed, operational risk management had the highest performance. Therefore, its role to produce fundamental decisions and actions in shaping and guiding the organization towards achieving its objectives very important that it should be given more attention.

The study also revealed that apart from credit risk management and operational risk management, liquidity risk management and interest rates risk management also posed challenges in risk management practices. This study recommends the formation of advisory groups to advice on financial matters in particular those related to interest rate.
The study also revealed that most commercial banks loans and deposits are the largest and most obvious source of liquidity risk; however commercial banks are more and more facing liquidity risk in different financial sources other than loans and deposits, including foreign exchange. This study recommends a well formulated guide in implementation of liquidity risk management policies that will assist in ensuring checks and balances in liquidity risk.
There is also need for banks to adopt sound corporate governance practices, manage their risks in an integrated approach, focus on core banking activities and adhere to prudential banking practices.
This study recommended that there is need for the owners and managers of the commercial banks to embrace proper accounting records keeping in order achieve financial performance. More efforts need to be channeled on accounting record keeping for effective performance of business units because accounting record keeping strongly affects performance of small scale business units

Recommendation for further Study

This study focused on effect of risk management in on financial performance of commercial banks, a case study of Mombasa County. Since only 77.1% of results were explained by independent variables in this study, it is recommended that a further study be carried out on other factors such review of collaterals, business models before issuing credit, adaption of technology etc. that might have effect on performance of commercial banks. Further studies can also be undertaken on risk management practices followed by commercial banks in Kenya whereby the study will aim to investigate on the awareness about risk management practices within the banking sector.

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