CREDIT RISK MANAGEMENT REGULATION AND PROFITABILITY OF COMMERCIAL BANKS LISTED IN NAIROBI SECURITIES EXCHANGE IN KENYA

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ABSTRACT

Commercial banks' working environment is the most highly regulated environment around the globe and this explains why banking regulations continually attract theoretical scrutiny. In Kenya, the Central bank of Kenya sets the rules and the regulations that every bank is supposed to operate by. Such regulations and guidelines are important as they are meant to protect the interest of depositors, creditors and investors as well as promoting integrity in financial markets. Commercial banks in Kenya have faced challenges related to performance that include decline in profits, being placed under receivership while at the same time registering high number of nonperforming loans. This has happened in the wake of revision of guidelines and regulations under CBK Act (Chapter 491, Kenyan law). This study therefore sought to investigate the effect of credit risk management regulations on profitability of commercial banks listed by Nairobi Securities Exchange. This research was directed by the theory of balanced portfolio. This research applied a descriptive research design. Population of interest were managers at the three levels of management; risk and compliance, credit and finance department in all 11 registered commercial banks which are listed in the NSE. This research used secondary data and primary data. A trial study was done to enhance reliability and validity of the research instrument. Both qualitative and quantitative data was produced by the research. The researcher further used multiple regression analysis Results to show that credit risk management practices play an important role in ensuring smooth banking operation in that sufficient capital helped in cushioning risk such as default in loan repayment. The study concludes that credit risk management practices had a positive significant impact on banks profitability, for instance, proper information evaluation before approving loans to the customers is a good credit risk management system that eventually enhances banks profitability. The study recommends that the commercial banks come up with strong credit risk management procedures. Such procedures should entail creditworthiness, investment viability appraisals and credit insurance measures.

Keywords: **Credit risk management regulations, Banks profitability, Credit risk management system, Credit risk management procedures, Credit insurance, Nonperforming loans**

INTRODUCTION

Recent research done by Pennacchi (2016) show that business environment in which commercial banks around the world operate in is one of the most regulated and has consequently attracted theoretical scrutiny. Such regulations create an environment of transparency which is necessary in enhancing interaction between the bank and its clients (Doyle, 2015). There is a focus on controlling activities that banking institutions engage in because the global and the national economies are built on such bank's activities (Barth Barth, Caprio, and Levine, (2013). The regulations and guidelines that every bank is supposed to operate within are provided by the Central bank of Kenya (CBK). Banking act besides its protocols and sensible strategies allotted thereunder have been agreed upon by commercial banks through their licensing and regulation board. Every bank's resources are dependent on its asset's growth and more so its liquidity and this is why liquidity level is a major pointer of the bank's stability and financial soundness. CBK constantly monitors banks' liquidity and risks on their credit portfolio (Richard, 2011).

According to Sherman (2009), in the USA, after the 2008 global financial recession there was heavy focus on regulating activities of financial institutions, and more so on the link between such guidelines and fiscal performance. According to KPMG (2014), before the financial recession, the USA's financial sector had been deregulated, leading to massive financial institutions growth which was not sustainable leading to financial crisis. Consequently, after the financial crisis, the regulations were reintroduced to bring about economic stability resulting to curtailed growth of financial institutions that includes banking institutions (KPMG, 2014).

Barth, Caprio & Levine (2016) notes that banking systems is a key component of a financial market and therefore curtailed performance and growth of a banking system spell doom to the entire financial markets. They further highlight that financial growth is facilitated by banking institutions through allocation and mobilization of funds to venture into projects that yield long term financial gain.

Financial performance is driven by a banking structure that is well structured and is shown by the stability of the economy, taking of risks and good governance (Gully, 2017). Regulation of banks is geared towards safeguarding investors', creditors' and depositors' interests as well as safeguarding integrity of the financial markets. Bain & Howells (2014) further indicated that the recent rise of government regulations around the world have been informed by the need to counter the deregulation upsurge. Necessity for cash flow differentiates the liquidity requirements of one organization to the other. Identification of liquidity is done by banks from time to time to ensure they plan for other suitable ways they can generate funds.

Calem and Rob (2017) highlights the old understanding of bank rules that higher capital requirement is positively correlated to financial performance in entire banking sector. However, Blum (2016) opines that the capital requirements pushes up the risk-taking behavior by the commercial banks. Additionally, Barth et al (2014) found out that non-

performing loans were related to stringent capital requirements further noting that there existed no significant association between such capital requirement and the banks' stability or even the growth of banking sector in general.

According to Andres & Vallelado (2018), existence of regulations and their proper enforcement is one way that the government can use to ensure that banks do not suffer failure. Today, most banks have gone global and they are therefore not confined to one country's regulations. This has led to emergence of global banking regulations (Pasiouras Gaganis & Zopounidis, 2013), although Barth et al. (2013) associates establishment of such global regulations with possibilities of inefficient operations which could lead to a crisis within the banking sector.

Andres & Vallelado (2018) highlights that the capital ratio, quality of asset, level of liquidity, corporate governance and bank size are the main bank-specific features influencing profitability. Other factors that affect profitability include structure of ownership, concentration and regulations which are macroeconomic factors (Andres & Vallelado, 2018). The losses that are absorbed from low asset quality reflect the capability of the banks' solvency indicated by capital ratio. Profitability is then raised by high capital ratio that lowers external funding needs (Kosmidou, 2018). CBK is mandated to foster solvency, liquidity and proper financial systems functioning of commercial banks in Kenya. In this regard therefore, if not properly regulated, capital ratio, asset quality, level of liquidity may hurt the profitability of commercial banks (Andres & Vallelado, 2018). Infact, Edirisuriya and O' Brien (2011) notes that variations in monitoring circumstances in banking/fiscal markets might have an effect on financial success of banks.

In Kenya, Banks are regulated and licensed by CBK which oversees them in order to ensure they comply with regulations in their operation. Guidelines and regulations under CBK Act (Chapter 491, Kenyan law) were revised in 2012 and became effective on January, 2013. Such regulations and guidelines are important as they are aimed at protecting investors and customers as well as promoting integrity in financial markets, safeguarding the industry against risk and protecting clients from excessive tariffs (Sonal, Anjarwalla & Khanna, 2013).

The regulations are in place to check solvency/liquidity as well as to ensure existence and functioning of suitable financial structures. The main objectives of CBK regulation and guidelines is to minimize the amount of risk which creditors gets exposed to, to safeguard commercial banks from bad activities such as (money laundering, financing terrorist groups among others), protect banking confidentiality as well as to reduce systemic risk (CBK, 2013). The regulations and guidelines are grouped into: Prudential Guidelines, Risk Management Guidelines, Non-Operating Holding Companies Guideline and Guideline on Incidental Business Activities. Prudential guidelines and Risk Management were reviewed by CBK 2012 and operationalized in (CBK, 2013).

Generally, the expectation is that proper execution of such guidelines would lead to smooth running of banking operation in the country and positively contribute towards realization of one of the goals of vision 2030 which is to make Kenya a key financial hub in Southern and Eastern Africa (Kenya Vision 2030). Major objectives of financial sector reforms are to ensure stability of the banking systems as well as to control deposits, lending and interest rates (CBK, 2013)

A listed company is a public- owned company meaning that members of public can buy or sell shares of such a company on the NSE. NSE is Kenya's main trade presenting a computerized stage for transacting and listing of numerous securities. In early 1930s, NSE was started as Nairobi stock Exchange (NSE) and it operated with that name until 2011 when it was renamed Nairobi Securities Exchange limited to reflect Capital Market Authority's 2010-2014 strategic design which was to give full-service exchange of securities (NSE, 2015).

As at the end of economic year 2015, 44 commercial banks were already licensed to operate in Kenya, with Eleven (11) of these having been listed with the NSE, (KDIC, 2015). Those commercial banks that are listed are; National Bank of Kenya (NBK), Standard Chartered Bank of Kenya, I&M Bank, Diamond Trust Bank (DTB), Co-operative Bank, CFC Stanbic Bank, Equity Bank, Barclays Bank Kenya, Housing Finance (HF), NIC Bank, Kenya Commercial Bank (KCB) (NSE annual report, 2015)

Statement of the problem

After the financial upheaval that was experienced globally in 2008, many viewed banking regulations as the only way to improve efficiency of banks and banking industry at large (Andres & Vallelado, 2018; Calem & Rob, 2017) although some differ (Blum, 2016; Barth et al, 2014). Indeed, sometimes commercial banks have less amounts to lend as their performance is affected by the regulations while on the other hand there are many cases of loan defaults caused by fluctuating and unpredictable interest rates (Atieno, 2011). In Kenya, Chase bank and Imperial bank have recently been put under receivership while Dubai Bank has been placed under liquidation. The reasons for above were cited as capital deficiencies (Dubai Bank), fraud (Imperial bank) and unsafe financial condition (Chase bank).

According to CBK annual report (2015), CFC Stanbic bank net profit declined from Ksh.5.478 billion in 2014 to Ksh.4.697 billion in 2015. This indicates a decline of 14.3% in profit for the bank. Similarly, in end of financial year 2015, National Bank registered a loss of KSh.1.2 billion. At the end of fiscal year ending December 2014, National Bank had registered a profit of KSh.1.3 billion. The decline is almost 192.3%. Further, in the first 6 months of 2018, National Bank made a total loss of Ksh. 282 million. At the same time, KCB, Co-operative Bank and Equity bank impressive performance during the same period (CBK, annual report, 2018).

From the above its clear fact that commercial banks registered conflicting performance levels makes it important to conduct an empirical research to establish the association between regulation of Kenyan banks and their performance

Research have been carried both internationally and locally to investigate effects of government regulations on banks profitability. William and Matthew (2016), in their studies on bank guidelines and regulations, capital adequacy and supply of credit in United Kingdom, found that banks that have an oversupply of capital have a tendency to have a greater growth in their credit portfolio. In the conclusion of their study, Kamau & Were (2015), who sought to understand drivers of bank performance in Kenya, called for further study on influence of regulatory measures on profitability in the Kenyan banking sector. Similarly, Ochieng (2016) conducted a research on effects of prudential guidelines and regulations by CBK on performance of Kenyan banks. However, this research examined performance and prudential guidelines broadly and focused on all the banks in Kenya. This research thus attempted to address this deficit by measuring effects of regulatory actions on banks profitability by giving answers to the study question. What effects does banks' regulator rules (regulations of liquidity management, capital adequacy guidelines and credit risk guidelines) have on financial results of the listed banks.

Research Hypothesis

H01: Credit risk management regulations have no significant effect on NSE listed commercial banks' profitability.

LITERATURE REVIEW

Theoretical literature Review

This research was steered by the Balanced Portfolio Theory. Studies done on how banks perform, use the portfolio theory approach as its role is very important (Nzongang & Atemnkeng, 2006). The world recognizes perceptual object which is an out-there factors which is used to see sensory data after it is persevered. The motives, intentions and sentiments that people have were used as attributions, the behavior of people is manifested by the core processes indicated above. It is an individual bank's management decisions that make up the commercial banks' portfolio diversification and portfolio composition desired (Hantke-Domas, 2003; Nzongang & Atemnkeng, 2006).

When one wants to recover a service, they evaluate the process through disconfirmation paradigm (Engelmann, 2011). The service providers provide recovery efforts on establishing the expectations of the customers. A customer raises his/her concerns to the company once they are not satisfied with the product they purchased where they expect the company to provide fairness and justice to them. The performance of the company is used to evaluate how they give justice or fairness to their customers (Oliver, 1997). It is anticipated that a company will provide services to its customers so that they can improve their profitability

through referrals from existing clients (Engelmann, 2011). There is variance of profitability from one customer to another which makes it easier for perceived profitability to be used as it is not as operationalized as the objective performance. Better expectations on profitability of a product lead to a positive affirmation.

Different people's explanation of different scenarios is used in observing, analyzing and explaining their behavior and this assertion is well elaborated by this theory. The attributions of internal (personal) and external (situational) in people's behavior are used in categorizing group explanations of human behaviors which explain the behavior that people have in different ways (Leippold & Vanini, 2011). The ability, personality, mood, efforts, attitudes, or disposition of a person which is termed as characteristics are used to define a person's behavior called an internal attribution. The cause of a given behavior either the task, other people, luck or the environment can be used in making of an external attribution. Behavior and the person engaging in it give every different result as per the two attributes (Yilmaz, 2009).

This concept is applicable in this research because it presupposes the role of management in determining the profitability trajectory of the bank; it's all about management decisions. Similarly, banks need to put in place measures to cushion themselves against credit risk, as studies shows a connection between managing risk of credit and banking institutions profitability. Also, liquidity risk exposes banks to financial difficulties which lead to depositor running, fleeing of investors and tougher financing. The balance portfolio model requires identifying best holding levels of every asset in capital management portfolio. In this regard, adoption of the prudential guideline may influence profitability of the commercial bank as it shields the banks from risks related to liquidity holding, adequacy of capital and management credit portfolio.

Empirical Literature Review

Credit is what bank gives as loan to the borrowers and therefore the possibility that the returns expected from a loan extended will not be received as and when expected is called credit risk (Conford, 2015). Put differently, credit risk is losses incurred when a borrower refuses or is unable to pay what he/she owes in full and/or on time (Coyle, 2016). Among the causes of such credit risks include: unsuitable credit policies, unsuitable laws and guidelines, fluctuating rates of interest, low levels of liquidity, irresponsible lending, poor loan appraisal process, poor loan advancing practices, government meddling and insufficient CBK regulations (Laker, 2016; Sandstorm, 2017). Management of credit is therefore important as it looks at ways of mitigating such risks.

In their research on relationship between managing of credit risks and the four Sweden commercial banks profitability, Manzura & Juanjuan (2015) realized that non- performing loan portfolio's ratio affected success of all the four banks that were sampled in Sweden. They used Basel II application which strengthened the negative effect of NPLR on ROE. In a similar research on commercial banks in Europe, Zou & Fan, (2016) found a good

relationship among profitability and credit risk managing and the banks. The research concluded that NPLR significantly affected ROE.

Wang (2013)'s research Commercial Bank's credit risk management in Rural China realized that, Commercial Banks in the Countryside (RCBs) in China need to gather enough information concerning the potential costumer so as to prevent credit risk exposure to the bank. The gathered enough information will assist in assessing if any possibility of the loan borrower to default that loan and make wise decision. He concluded by stating that, for RCBs to maintain good credit risk management, it should concentrate on business operating environment which has unique risk before adopting any credit risk management strategy.

Gizaw, Kebede & Selvaraj (2015) did a study on effect of credit risk on success performance of commercial banks in Ethiopia. The study which relied on data collected from 8 commercial banks which has been in existence for a span of 12 years starting from 2003. The study exposed a substantial positive association between management of credit risk and success of Ethiopian banks hence encouraging managers to employ modern management of credit risk methods for better performance improvement.

Olweny & Shiph, (2016), who did a research on results of finance sector issues on success of commercial banks of Kenya noted that ratio of loans that are not performing, (a credit risk managing pointer), had a useful effect on banks profitability further suggesting that banks should conduct serious information evaluation before giving credits to clients in order to have an effective and sound credit risk managing system

RESEARCH METHODOLOGY

Research Design

According to Churchill (2009) research design is how data is collected, measured and analyzed. Further, according to Mugenda and Mugenda (2008) research design is a plan on how the study is intended to be done. Longitudinal research design was used to assess the association between research variables, that is, if change in regulation requirement results to a change in profitability of listed commercial banks. Longitudinal research design was opted for since the study collected data over a period of 5 years. Mugenda and Mugenda (2008) highlights that longitudinal studies employ continuous or repeated measures to follow particular individuals over prolonged periods of time—often years or decades. They are generally observational in nature, with quantitative and/or qualitative data being collected on any combination of exposures and outcomes, without any external influenced being applied. Research opted to adopt this study design as it ensured deep investigation of particular behavior or complete explanation of the current situation thus reducing inaccuracies in collection of data (Burns & Grove, 2003).

Scope of the Study

This study was done in Nairobi, in the head office of the 11 listed commercial banks. The research focused on credit risk management regulation on capital adequacy, regulations on credit risk management and liquidity managing regulation. This was in a bid to assess or establish how strong is the association between the regulations, which fall within prudential guidelines and risk management guidelines, in relation with financial success of listed commercial banks in Kenya. The regulations fit well in CAMELS framework used by CBK for performance evaluation. According to Githinji (2014) CAMELS stands for Capital adequacy, Asset Quality, Management, Earnings, Liquidity and Sensitivity. This study used panel information covering the period from 2014 to 2018 as well as questionnaires to establish impact of credit risk management regulations on profitability of listed commercial banks.

Target Population

A target population is a group of people who share same characters and similar characteristics (Cooper & Schindler, 2008). The population of interest was managers at the three levels of management from risk and compliance, credit and finance departments of the 11 listed Kenyan banks. The research used primary data and secondary data. The distribution of the population was as illustrated on Table 1.

Table 1: Population of the Study

Level of management	**Finance**	**Credit**	**Risk**
Top level management-Per bank	11	11	11
Middle level management-Per bank	11	11	11
Low level management-Per bank	11	11	11
Total – from the 11 banks	**33**	**33**	**33**

Sampling Procedures and Sample Size

According to Kombo and Tromp (2013) a trial is a small proportion of populace whose characteristics are analysed to get data on the entire populace. In this study, since the population is small sampling was not done. The study was carried out through census.

Research instruments

Primary and secondary data was used in this study. CBK, Capital Markets Authorities, Kenya Bankers Associations, financial reports of the respective commercial banks and other resources were the main sources of secondary data since they are the publications where financial institution's financial records have been documented. To collect the secondary statistics, the scholar has prepared a secondary data collection schedule annexed to this study. Further, since the population of the study is small, the study also considered primary data. To collect primary data, the scholar made use of a self-administered inquiry form. The questionnaire mainly contained Likert-type questions, 5 points.

Piloting

Dillman (1978) recommended that the expected respondents conduct a piloting to warrant clarity and correct explanation of the inquiry form. A pilot research was carried out in another bank that is not listed in NSE. The logic behind using another bank other than banks listed in NSE is in order not to give details on what the research was meant for to the possible respondents without troubling them with the trial research and the actual research. The researcher chooses 30 persons to test the dependability of instruments of research. Conferring to Cooper and Schindler (2013), the trial set can have a variance of between 25 and 100 entities but it doesn't have to be selected statistically.

The pilot statistics involved in real research. Trial research allowed the scholar test the research instruments. The dependability and validity of instruments was improved as its clearness to the respondent is recognized. The pilot study acquainted the scholar with the study and its process of management and identification of items that need to be modified. The outcome helped the scholar to remove irregularities brought about by the tools, to make them quantify their intention.

Reliability of Measurement Instruments

Reliability talks about uniformity of measurements often measured by the use of the method of test–retest dependability. Together with numerous things that are similar on a scale, by trying a varied sample of persons and by use of similar testing processes increases dependability. Dependability gives consistency to the collected information. This ensures that the information has a particular constant pattern. If the answers have no particular pattern found, it shows that maybe the trial is hard forcing the respondents to speculate the responses just randomly.

Dependability of instrument of the study was improved using the trial research which was conducted in a bank not listed in NSE by choosing a pilot set of 30 people. The respondents were conveniently chosen since arithmetical situations are not essential in the trial study (Cooper & Schindler, 2011). The trial data won't be involved in the actual research. The trial study allowed testing research instruments. This estimate of dependability was assessed by

use of Cronbach Alpha coefficient (α). Nunnally (2003) commends that tools for study ought to have dependability of about 0.70 and over.

Validity of Measuring Instruments

From the study done by Bridget and Lewin (2005), the level by which trial tools signifies the items the trial is intended to gauge is validity. Saunders et al., (2007) concluded that the amount of the extent in which collected information using a specific tool represents an exact area or contents of a specific idea as expected is called content reliability. Lacity and Jansen (2004) indicated that validity was making sense, being convincing and seeming correct to the researcher Cronbach, (2001), opined that validity is outcomes that appear real or true.
Consequently, authentication of the study tool is significant to this research for it shall make sure that the research collects appropriate data to respond to the study questions. Mugenda and Mugenda (2003) stated that the common process in measuring soundness of the content of a tool is by using a qualified expert or a professional in specific field. To measure the soundness of a study instrument, the scholar looked for an expert's opinions in the area of study particularly the scholar's academic instructors. This helped revamp the study tools thus improve further validity.

Data Collection Procedures

The respondents were notified by the researcher that the tools being used for the purpose of study only and that the respondent's answers shall be handled with the highest discretion. The researcher obtained a study authorization from national commission for science, technology and innovation. Secondly, the scholar obtained an introductory note from the institution to collect information from the respondents. The research delivered the inquiry forms to the respondents personally and gave the questionnaire in person to selected people with help of trained research assistants. The researcher and trained assistants gave the inquiry forms and give the people time to fill them then collect. Nevertheless, in cases where it is not possible for respondents to fill the inquiry form as the scholar or his assistants is waiting, the method of drop and pick was used as the inquiry forms were left to be collected later from the respondents. In order to guarantee a high rate of response, follow up calls were done to remind respondents to fill the inquiry forms. The scholar remained careful to ensure all inquiry forms given to respondents were received back. Consequently, the scholar kept a record of questionnaires given to respondents and those returned.

For the secondary data, the scholar obtained the financial reports of the listed commercial banks for duration between 2014 and 2018 and then records the necessary parameters on the data collection schedule.

Methods of Data Analysis

Going by Brinkmann and Kvale (2009) before the collected data is presented, it ought to be processed. After clean-up of the data which involves documentation and rectification of unfinished or wrong responses, the scholar transcribed the data from questionnaires to avoid risk of forgetting or losing important data over time (Bryman & Bell, 2011). Quantitative information obtained was examined methodically by use of the Statistical Packages for Social Scientists (SPSS Version 23) then descriptive statistics was used in analyzing the output. The quantitative output was analyzed through tables and figures then the prose form were used in presenting of the data while the answers provided by the respondents were used as the qualitative data.

Panel information was used in the research. This is mostly preferred as it reduces biasness and it also contains both cross-sectional dimensions and time series (Baltagi, 2005). Data about eleven (11) commercial banks listed for five (5) years duration, from Year 2014 to Year 2018 was collected. The researcher further used multiple regression analysis to find the association between the predictor (independent) variables and the dependent variable. The researcher deems regression method to be useful for its ability to test the nature of influence of independent variables on a dependent variable. Regression is able to estimate the coefficients of the linear equation, involving one or more independent variables, which best predicted the value of the dependent variable. The research made use Statistical Package for Social Scientist (SPSS) to do the analysis. Results were shown using bar graphs, tables as well as pie charts.
The regression equation was as follows:
$Y_{it} = \beta_0 + \beta_1 X_{it} + \ldots.. + \beta_n X_{it} + \varepsilon$

The econometric model derived from the equation above for the purposes of this study was as follows;

$Y_{it} = \beta_0 + \beta_1 CR\_Mgt_{it} + \varepsilon_{it}$
Where;

Y_{it} = Profitability (ROA, ROCE and ROE)
β_0 = Constant (level of profitability when there is no credit risk management regulations)
β_1 = Regression Coefficients
CR_Mgt = Credit risk Management Regulation
ε_{it} = Error
i= Bank code (1….11)
t= Time (2014—2018)

Different methods was used in determining the value of both independent variables and dependent variable as shown below.

Y_{it} = Profitability (measured as ROA, ROCE and ROE)

Calculated as;

$$\text{ROA} = \frac{Net\ Income}{Average\ Assets}$$

ROCE = $\frac{Earnings\ Before\ Interest\ and\ Tax}{Capital\ Employed}$

ROE = $\frac{Net\ Income}{Shareholders\ Equity}$

CR_Mgt = Credit risk Management Regulation (measured as Non-Performing loan to Total Assets) calculated as:

Credit risk management regulation = $\frac{Total\ Loans}{Total\ Assets}$

RESULTS AND DISCUSSION

The research inquired from the participants whether credit risk management regulation affects bank's profitability.

Table 2: Influence of Credit Risk Management on Banks Profitability

	Frequency	Percentage
Yes	67	84.8
No	12	15.2
total	79	100.0

From the results, majority of the participants 67(84.8%) indicated that credit risk management regulation affects bank's profitability while 12, (15.2%) were of the contrary opinion. It follows therefore that credit risk management regulation affects bank's profitability.

Table 3: Extent to which Credit Risk Management affected Banks Profitability

	Frequency	Percentage
To a very great extent	28	35.4
To a great extent	35	44.3
To a moderate extent	16	20.3
Total	79	100.0

From the research finding most of the participants 35(44.3%) were of the opinion that credit risk management regulation affects bank profitability to a great extent. A further 28(35.4%) of the participants indicated that credit risk management regulation affects bank profitability to a great extent, while 16 (20.3%) indicated to a moderate level. This therefore implies that credit risk management regulation affects bank profitability to a great extent.

Participants in this study were required to indicate their agreement level with following statements related to credit risk control and profitability of commercial banks.

Table 4: Relationship between Credit Risk Management and Banks Profitability

Statements	N	Min	Max	Mean	Std Dev
Decline in the ratio of loans that are non-performing signals improvement credit risk managing in banks	79	3.00	5.00	4.20	0.76
Effective credit risk management enhances banks profitability	79	3.00	5.00	3.95	0.60
Proper information evaluation before approving loans to the customers is a good credit risk managing system that eventually enhances banks profitability	79	4.00	5.00	4.30	0.46
Banks need to understand its business-operating environment to ensure that it adopts a proper credit risk management strategy to enhanced profitability.	79	3.00	5.00	4.25	0.63

Results show that majority of the respondents in this research indicated that proper information evaluation before approving loans to the customers is a good credit risk managing system that eventually enhances banks profitability (M=4.30 SD=0.46) and that banks need to understand its business operating environment to ensure that it adopts a proper credit risk management strategy to enhanced profitability (M=4.25 SD=0.63). These results are in line with others by Conford (2015) that show that management of credit is important as it looks at ways of mitigating such risks.

Further the study revealed that decline in the ratio of loans that are non-performing signals improvement in credit risk management in commercial banks (M= 4.20 SD=0.76) and that effective credit risk management enhances banks profitability (M= 3.95 SD=0.60). These results support research findings by Manzura and Juanjuan (2015) who indicated that, for banks to retain good credit risk management practice, they must concentrate more on business operating environment, which is mostly characterized by unique risks which call for tailoring of credit risk management strategies by every firm.

Profitability of the Commercial Banks

The study sought to determine the performance of banks that are listed in the NSE since the 2013 revision of the prudential guidelines. The study used Return on Assets (ROA), Return on Capital Employed (ROCE) and Return on Equity (ROE). The assement period was between Financial Year (FY) 2013 and FY 2018.

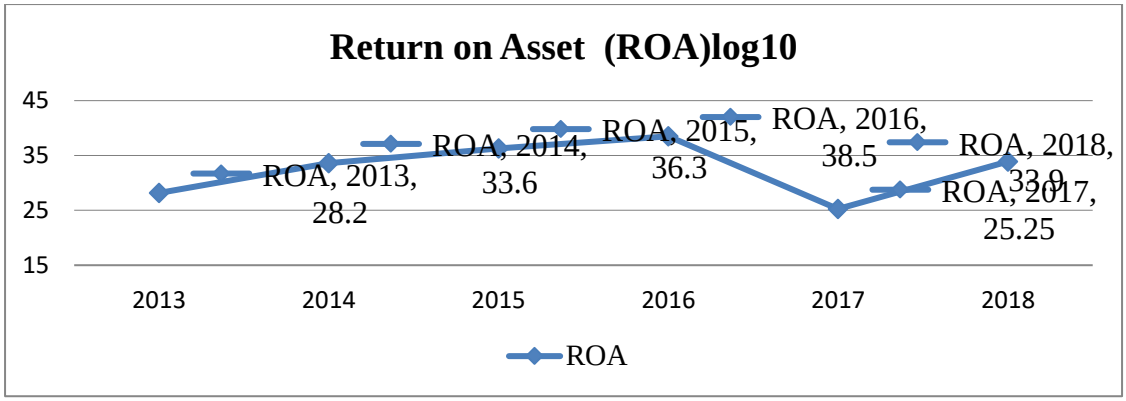

Figure 1: Return on Asset

Assessment on ROA shows that the lowest value of 28.2 was recorded in the FY 2013 while the highest value of 38.8 was recorded in the year FY 2018. However, a slump was recorded between FY 2016 and FY 2017 before rising slightly to 33.9 in the FY 2018. Generally most of the commercial banks that are listed at the NSE registered a positive growth from FY 2013 to FY 2016 with dump in FY 2017 and FY 2018.

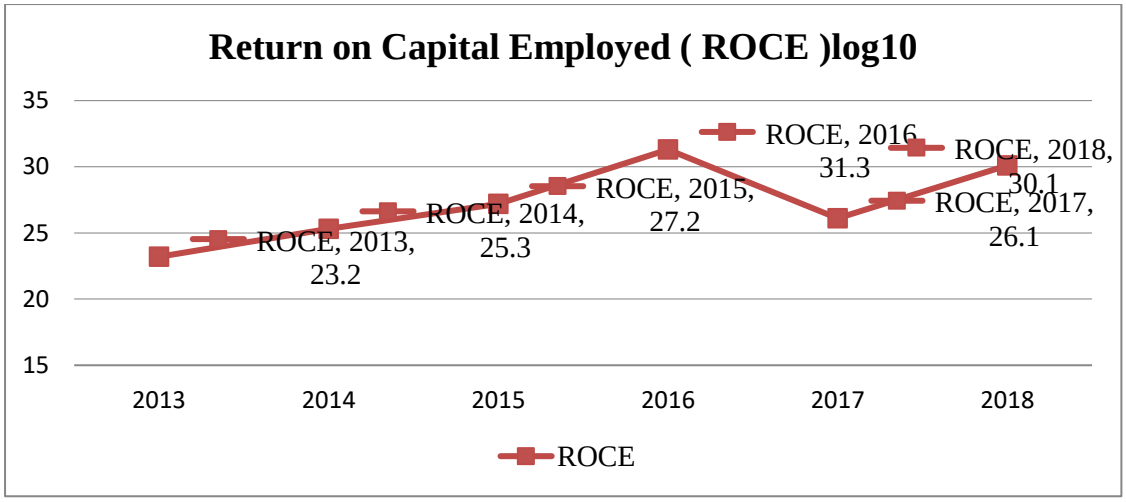

Figure 2: Return on Capital Employed

Similarly, assessment on ROCE shows that the lowest value of 23.2 was recorded in the FY 2013 while the highest value of 35.3 was recorded in the FY 2018. However a slump to 26.1 was recorded in FY 2017 before rising slightly in the FY 2018 to 30.1. It depicts therefore that most of the commercial banks that are listed at the NSE registered a positive growth in ROCE from FY 2013 to FY 2018 with decline in FY 2017.

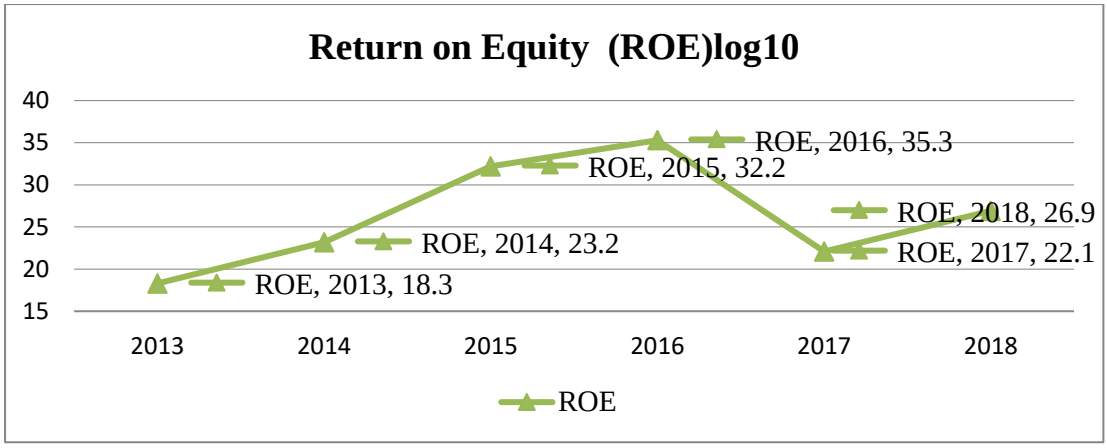

Figure 3: Return on Equity

Assessment on ROE shows that the lowest value of 18.3 was recorded in the FY 2013, while the highest value of 31.3 was recorded in the FY 2018. However a sharp decline to 22.1 was recorded in FY 2017 before rising slightly to 26.9 in the FY 2018. The results points that, most of the commercial banks that are listed at the NSE registered a positive growth in ROE from FY 2013 to FY 2016 with slump in FY 2017.

Regression Test

In this1 study, a regression analysis1 was conducted to test the influence1 of predictor variables on the dependent variable. The research used statistical package for1 social sciences (SPSS V 21.0) to1code; enter and1compute the measurements of1 the multiple1regressions. The model summary is presented in the Table 5 below.

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.675[a]	.455	.433	.32269

Source: Research data, (2020)

The coefficient1 of determination (R-Square) shows the overall variations caused by regulation on capital adequacy, credit risk management regulation and liquidity management regulation on profitability of commercial banks that are listed at the NSE. Table 5 shows that the R-square for the model was 0.455. This implies that credit risk management regulation account for 45.5% of the variation in profitability of commercial banks that are listed at the NSE. 1Additionally, the coefficient suggests that other factors not studied account for 56.7 % of the variation in profitability of commercial banks that are listed at 1the NSE.

The ANOVA was1 generated to help evaluate1 whether the model was1 statistically significant in 1explaining the1 link between1 the study variables (capital1 adequacy regulation, credit risk1 management regulation and liquidity1 management 1regulation) and

profitability of commercial banks1 that are listed at the NSE. Table 6 displays the results of the1ANOVA.

Table 6: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.520	1	6.520	64.282	0.00
	Residual	7.810	77	0.101		
	Total	**14.330**	**78**			

Source: Research data, (2020)

From the1 ANOVA statics, the study1 established the1 regression model1 had a1 significance level of 0.000 which1 is an indication1 that the 1data was1 ideal for making a conclusion1 on the population1 parameters as1 the value of 1significance (p-value) was1 less than 5%. The calculated1 value was 1greater than the 1critical value (64.282> 4.49) an indication that credit risk management regulation has a significant effects on profitability of commercial banks that are listed at the NSE. The significance 1value was 1less than 0.05 indicating that 1the 1model 1was significant. In 1addition, the study1 used the1 coefficient1 table to 1determine the 1study model. The findings are1 presented in1 the1 Table 7 below.

Table 7: Regression Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	2.390	.464		5.154	.000
	Credit risk Management Regulation	.449	.100	.386	4.478	.003

As per the SPSS generated output presented in Table 7, the equation (Yit = β0+ β1CR_Mgtit + εit) becomes:

Y (profitability of commercial banks that are listed at the NSE) = Constant (2.390) + Credit risk Management (0. 449) + Error (0.32269)

The findings show that holding the credit risk management regulation constant at zero, performance of profitability of commercial banks that are listed at the NSE would be at 2.390 Additionally, the results1 show that1 a unit change in credit risk management regulation while 1holding the1 other factors constant 1would positively change profitability of commercial banks that are listed at the NSE a factor1 of 0.449. These findings support others by Sandstorm (2017) that management of credit is important in mitigating risks such as unsuitable credit policies, unsuitable laws and guidelines, fluctuating rates of interest, low levels of liquidity, irresponsible lending, poor loan appraisal process, poor loan advancing practices.

Hypothesis testing: H01: Credit risk management regulations have no significant impact on NSE listed commercial banks' profitability

The study hypothesized that credit risk management regulations have no significant impact on NSE listed commercial banks' profitability. The study findings indicated that there was a positive significant relationship between credit risk management regulations and NSE listed commercial banks' profitability (β=0.449 and t=2.004) which has a (p-value <0.049). Further, the linear regression analysis coefficients shows that the model Y= β0 + β2CR_Mgtit, is significantly fit. The general form of the equation was to predict NSE listed commercial banks' profitability from CR_Mgtit = credit risk management regulations; becomes= 0.449CR_Mgtit. This indicates that NSE listed commercial banks' profitability = 0.449* credit risk management regulations.The model NSE listed commercial banks' profitability = β (credit risk management regulations) holds as suggested by these test. This confirms that there is a positive linear relationship between credit risk management regulations and profitability of commercial banks listed at NSE. Therefore, a unit increase in credit risk management regulations index led to an increase in profitability of commercial banks listed at NSE index by 0.449. Since the p-value was less than 0.05 as shown in Table 7, the null hypothesis was rejected and alternative hypothesis accepted then concluded that credit risk management regulations improves profitability of commercial banks listed at NSE.

Conclusions and Recommendations

This study concludes that credit risk management practices had a positive significant impact on banks profitability, for instance, proper information evaluation before approving loans to the customers is a good credit risk management system that eventually enhances banks profitability. Further, it was concluded that banks understanding its business operating environment to ensure enhanced profitability is a proper credit risk management strategy that should be adopted.

The study recommends that the commercial banks come up with strong credit risk management procedures. Such procedures should entail creditworthiness, investment viability appraisals and credit insurance measures.

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