



IMPACT OF ENTERPRISE RISK MANAGEMENT ON THE SUSTAINABILITY OF FINANCIAL INSTITUTIONS IN NIGERIA

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Abstract

The study examined the impact of Enterprise Risk Management on the sustainability of financial institutions in Nigeria. The population for the study consists of the fourteen banks operating in Nigeria for twelve years period from 2008 to 2019. The statistical data used for the study were obtained data from annual reports of the 14 selected banks for the 12-year period. The study employed descriptive and inferential statistics for the analysis. Major findings from the study show that risk management is a significant system in organizations that cannot be overlooked. The study also found that the degree of capitalization, organizational structure, and operating license type has no significant impact on the robustness of risk management systems while systemic importance significantly affects the robustness of the risk management systems. It is recommended that Nigerian banks consistently check and improve their risk management policies, taking into consideration the guidelines of the COSO ERM framework while more technical and reliable risk management techniques should be adopted.

Keywords: Competitiveness, Enterprise Risk Management, Financial Institutions, Sustainability



INTRODUCTION

Risk can be defined as a probability or threat of damage, liability or loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action (Manab, Othman & Kassim, 2012). It involves a level of uncertainty which makes it unpredictable and uncontrollable. In accounting and business, risk is a term used to describe the uncertainty of a future event having a favorable outcome, for example, a business manager may make decisions that can either affect profitability positively or adversely. Risk management, then, is a measure that is used for identifying, analyzing, and then responding to a particular risk. It is a process that is continuous in nature and a helpful tool in the decision-making process (Jabbour & Abdel-Kader, 2015).

Recent years have seen heightened concern and focus on risk management, and it became increasingly clear that a need exists for a robust framework to effectively identify, assess, and manage risk. In 2001, the Committee of Sponsoring Organizations of the Treadway Commission (COSO) initiated a project, and engaged PricewaterhouseCoopers, to develop a framework that would be readily usable by management to evaluate and improve their organizations' enterprise risk management (Hong, Huang & Wu, 2014). The banking sector is one of the most substantial component parts of the economy in market economies and reflects its degree of development since it considerably participates in its economic growth (Hoyt & Liebenberg, 2011). The processes of re-structurization, recapitalization and privatization, international integration, mergers, and acquisitions considerably contributed to the formation of a modern banking sector in Nigeria and to the increase of an internationally competitive environment.

In terms of risk management, commercial banks are one of the most significant business organizations to be assessed (Daud, Haron & Ibrahim, 2011). This is since the management of risk has an important effect on the competitiveness of these banks and as such, the degree to which risk is effectively managed is a cause for concern. In discussing competitiveness, competitive advantage is an aspect not at all far away. Competitive advantage addresses what an organization has in stock that will achieve an advantage in the competitive market. Some factors that determine the competitive advantage of banks are the bank's performance, core competence, customer service, and satisfaction as well as business efficiency, but more importantly, risk management is a major determinant of the competitive advantage of one bank over another. Banks are expected to be well-capitalized and imbibe restricted lending culture to avail the much-needed sustainable growth and development (Alak & Tarabieh, 2011).

Now, it is necessary to point out that risk management is a process that is currently carried out in Nigerian banks on a yearly basis, thus, our focus is not on whether risk is

managed in these organizations, or rather, whether strategies and frameworks are in place to ensure risk management. Instead, the focus is placed on how effectively and efficiently these strategies are implemented in the management of risk. That is, how the deployment of risk management affects the competitiveness of banks in Nigeria (Fadun, 2013). To this end, dimensions such as profitability, value creation for shareholders, and credit rating are to be identified and analyzed. This is because the use of risk management should achieve these aspects of organizational competitiveness. Thus, providing the way forward to improve the competitiveness of banks in terms of risk management.

Statement of the Problem

One of the major effects that risk management has on banks is competitiveness. It is not far-fetched to say that if risk is not effectively managed, banks are liable to lose credibility and competitiveness in the banking industry (Bala-Gbogbo, 2011). The banking industry is a major contributor to the development of the economy and a stable economy is one that has an effective working financial sector. Competition in the financial sector is important because it affects the efficiency of the production of financial services, the quality of financial products, and the degree of innovation in the sector (Bailey, 2019). Therefore, when banks work to maintain their competitiveness in the industry, the economy in general benefits. For banks to effectively manage risk, they will need to be able to adopt an appropriate risk management framework, and not just adopt it but implement it. Hence, banks encounter several problems in implementing and maintaining a robust risk management framework.

According to Stulz (2008), there are about five types of risk management failures. For one, when it comes to managing risk there is often the failure to use appropriate risk metrics. One of the most popular risk metrics is VaR (Value-at-Risk), however, it can only tell the bank or firm the largest loss it expects to incur at a given confidence level while giving no indication about the distribution of losses that exceed VaR. This means that its application does not guarantee the success of risk management. Another important aspect is the fact that the effectiveness of implementing VaR depends on the liquidity of the financial market, meaning that if the market is not liquid then daily VaR measures lose their meaning. This is because when a firm sits on a portfolio that cannot be traded, a daily VaR measure does not measure the portfolio's risk since the firm has to stay with that portfolio for a longer time. Second, there is the mismeasurement of known risks. Sometimes, errors are made by risk managers in assessing the probability or size of the losses, as well as the correct distribution to be used. Also, for a bank with many positions, even if the distribution for each position is correctly estimated, the correlation between the different positions may be wrongly measured. Third, is the failure to

take known risks into account. It is very difficult or costly to consider all the risks in a risk measurement system, mainly because nobody can forecast future events perfectly (Stulz, 2008). Fourth, is the failure in communicating risks to top management. In the assessment of a firm's risk, risk managers inform top management about the firm's risk position to enable the management and the board to make decisions and develop an appropriate risk strategy to be implemented in the firm. According to Stulz (2008), if a risk manager is unable to communicate this information effectively, top management may end up making decisions that are adversely informed or they may develop an overoptimistic perception of the risk position of the firm. Fifth, failure in monitoring and managing risks. It is difficult for risk managers to adequately acquire all the changes in the risk characteristics of securities and adjust their hedges to these changes. So, if the risk characteristics of securities change too quickly, risk managers may not be able to monitor them and put on effective hedges Stulz (2008).

These issues show that risk management is a complex system but if implemented effectively, can be a good tool. Thus, the problem arises in curtailing and managing risk so that the bank maintains its competitiveness, improves it, and invariably does not lose it. Banks and financial institutions assume risks during conducting business for the purpose of realizing returns on investments (Ajibo, 2015). It is obvious that these risks can potentially eliminate expected returns and entail losses for these institutions. Some are expected while others may be unexpected. Banks and institutions typically have reserves for expected losses but unpredictable events such as economic crisis or falling interest rates cause institutions to rely on their capital to alleviate related losses. This is where the need for effective risk management frameworks in banks and financial institutions is crucial to their survival. By utilizing efficient risk management systems, these institutions will become competent in optimizing their risk-return trade-off (Dabari & Saidin, 2015). With these thoughts in mind, there is a need to determine how risk management can be measured to provide a reference point for banks in determining how well their risk is managed.

Objectives of the study

The aim of the study is to assess the impact of the implementation of enterprise risk management on the sustainability of financial institutions in Nigeria. The specific objectives are:

- i. To examine factors affecting the robustness of the risk management system of banks in Nigeria
- ii. To access the impact of risk management on long term profitability of banks in Nigeria.
- iii. To access the impact of risk management on shareholders' value creation by banks in Nigeria

The research questions and research hypotheses were formulated in line with the objectives of the study.

Significance and scope of the Study

The study will be of great significance to banks in Nigeria, as well as other business enterprises in encouraging them to better manage their risk by providing evidence to support the notion that risk management substantially affects the competitiveness of banks. This study is important in providing information and strategy on how to better manage organizational risks in banks such as Credit Risk, Liquidity Risk, Market Risk, Operational Risk, and Compliance Risk. Meanwhile, to curtail these risks, banks need to operate a robust risk management system, which will invariably give them an edge over others in the industry. Thus, the study will help banks in acquiring a competitive advantage over others as specific aspects that determine competitiveness are outlined, analyzed, and assessed with respect to risk management. This means that banks get to see the importance of a robust risk management system in achieving and maintaining competitiveness in the banking industry. The research community will also benefit from the study because the research will add to the existing number on the subject, especially by adding to the scarce literature on risk management and corporate governance improvement in the Nigerian context.

This study analyzed how the robustness of risk management systems in Nigerian banks affect their competitiveness. It is limited to fourteen (14) commercial banks operating in Nigeria and does not extend to other categories of banks for the purpose of maintaining accuracy, relevance, and consistency, nor does it include other commercial industries. The inclusion criteria which yielded the 14 banks was that banks under investigation must be operational in Nigeria between the periods 2008 to 2019. The rationale behind the selection of these periods is to ensure a fair and unbiased assessment of enterprise risk management of commercial banks in Nigeria prior to the 2020 lockdown due to covid-19 pandemic. A 12-year time frame is considered appropriate to assess the long-term impact of enterprise risk management on banks' performance for the period while consideration could be given to a pre covid-19 and post covid-19 pandemic era in future study.

Risk management as a phenomenon is wide on its own, hence, to adequately quantify it for measurement, disclosure on risk management from the annual reports of banks will be content analyzed using a disclosure checklist developed from the Committee of Sponsoring Organizations of the Treadway Commission (COSO) risk management framework (COSO, 2017). Additionally, three components are used to analyze the competitiveness of banks: long-

term profitability, value creation, and credit rating. This will be done by obtaining relevant information relating to disclosure of risk management, profitability, credit rating, and value creation from the banks' annual reports for a period of twelve years.

LITERATURE REVIEW

Risk management is one aspect of an institution that greatly affects its success and competitiveness in the industry. This section sets out to review the various literature available relating to risk management in banks and the effect of the operation of such systems on the competitiveness of these banks. Relevant concepts were analyzed, and a proper institutional background was given. Also, relevant theories were linked to the study.

Conceptual Review

The Concept of Risk Management

Risk management in banking is theoretically defined as “the logical development and execution of a plan to deal with potential losses”. Usually, the focus of the risk management practices in the banking industry is to manage an institution’s exposure to losses or risk and to protect the value of its assets. In general, the banking business is regarded as a risky business. Economic theory suggests that there are two economic units - surplus unit and deficit unit - and these economic units prefer to use financial institutions (intermediaries) to transfer the necessary funds to each other. Certainly, this process increases the importance of the financial intermediaries in the economy but also poses some risks to these institutions. Economic units usually prefer to use intermediaries because of the problems associated with asymmetric information. To solve the asymmetric information problems, institutions are recruiting skilled employees and systems, that is why the scarce sources of funds are now used more effectively by units in the economy. Therefore, the funds are channeled to the most valuable projects that are beneficial to the economy. However, this process of channeling funds from one unit to another naturally has some inherent risks within the process. Banks are usually managing those risks as part of their normal operations (Tursoy, 2018)

The concept of risk management in the financial sector was revolutionized in the 1970s when financial risk management became a priority for many companies including banks, insurers, and non-financial enterprises exposed to various price fluctuations such as risks related to interest rates, stock market returns, exchange rates, and the prices of raw materials or commodities.

According to Dionne (2013), this revolution was due to a large increase in the above-mentioned price fluctuations. Fixed currency parities disappeared, and prices of commodities

became much more volatile. The risks of natural catastrophes also magnified considerably. Historically, to protect themselves from these financial risks, companies used balance sheets or real activities (liquidity reserves). To increase flexibility or to reduce the cost of traditional hedging activities, derivatives were then increasingly used. Derivatives are contracts that protect the holder from certain risks. Their value depends on the value and volatility of the underlier, or of the assets or value indices on which the contracts are based. The best-known derivatives are forward contracts, options, futures, and swaps. Derivatives were first viewed as forms of insurance to protect individuals and companies from major fluctuations in risks.

At the same time, the definition of risk management became more general. Risk management decisions are now financial decisions that must be evaluated based on their effect on firm or portfolio value, rather than on how well they cover certain risks. The goal of corporate risk management is to create a reference framework that will allow companies to handle risk and uncertainty. Risks are present in nearly all of firms' financial and economic activities. The risk identification, assessment, and management process are part of companies' strategic development; it must be designed and planned at the highest level, namely the board of directors. An integrated risk management approach must evaluate, control, and monitor all risks and their dependences to which the company is exposed (Dionne, 2013).

COSO's Enterprise Risk Management Framework

The Committee of Sponsoring Organizations (COSO) was a committee whose mission was to sponsor research on fraudulent financial reporting. Its current mission is to "provide thought leadership through the development of comprehensive frameworks and guidance on enterprise risk management, internal control and fraud deterrence designed to improve organizational performance and governance and to reduce the extent of fraud in organizations." COSO provides a guide for risk management and internal control to be checked and improved. This guidance has been illustrated in its Enterprise Risk Management model which contains eight components.

(i) Internal Environment

This relates to the tone of the business which affects the firm's risk appetite, attitudes towards risk management as well as ethical values. The tone of the organization is determined by its board. If the board is lacking in experience, skills, and diversity it will be unbalanced and unlikely to set the right tone. This is the beginning of the ERM model which is one of its major criticisms as critics believe it should start with the external environment and not the internal.

(ii) Objective setting

In setting objectives of the organization, the board must consider the risk appetite of the organization, the amount of risk it is willing to accept and the risk tolerance. The objectives must be consistent with these as well as the organization's mission to be effective.

(iii) Event identification

Objectives are set to be achieved so both internal and external events that affect this achievement must be identified. An organization that lacks in the process of event identification will not be able to draw a distinction between events that affect the firm negatively (risks) and those that affect the firm positively (opportunities).

(iv) Risk Assessment

To effectively manage risk, the probability of risk and the effect it will have on the firm needs to be assessed. The COSO guidance stresses the importance of employing a combination of qualitative and quantitative risk assessment methodologies.

(v) Risk Response

There are four main responses to risk – reduce, accept, transfer, or avoid. Management must select the appropriate actions to respond to risk and align risks with risk tolerance and risk appetite. Risk responses must be realistic and conscious of the costs of responding.

(vi) Control Activities

The COSO guidance emphasizes the importance of the division of duties to improve internal control and the seriousness of its implementation. The human element is the most important aspect in terms of control, so if managers are not effective in utilizing controls because they do not take them seriously and mistakes are often made, controls are likely to fail. The COSO guidance also stresses that controls should be implemented at all levels of management.

(vii) Information and Communication

Information systems should ensure that data is identified, captured, and communicated in a proper manner and timing that enables managers to fulfill their responsibilities. If information is not communicated properly, important risk areas and potential problems may not be brought to the attention of senior management in time. The information needs to be timely and relevant.

(viii) Monitoring

The COSO guidance emphasizes that the management system should be monitored to identify flaws early and make modifications where necessary. Feedback and action are of great importance, so weaknesses need to be identified, reported, assessed, and corrected.

Risk Management in Banks

Risk is defined as the possibility of loss, injury, damage, or peril in life (Olowe, 1998). It is inherent in everyday life, especially in the life of a banker. Effective management of banking risk requires a well-articulated risk management policy and strategy. This assists the bank manager to think through the totality of its operations and the risks associated with the operations, see the risks in totality as affecting the bank as a corporate entity rather than as the individual risks affecting separate departments and units of the bank, assign responsibility and establish the machinery for implementation, appraisal, and review (Ayodele and Alabi, 2014). Therefore, the following should be paid attention to.

i) Credit Risk Management

In general, when commercial banks grant loans to individuals and legal entities, the credit risk involved is characterized by the following quantitative parameters: risk as the probability of the borrower's failure to repay the loan; acceptable risk; average risk; possible losses given loan default; the average value of losses; the maximum allowable losses; the number of loans given by the bank; the possible number of different loans the bank can give; the number of problem loans (Konovalova et al, 2016).

ii) Market Risk Management

Redja (2006) opined that the bank should conduct strict management and control of market risk based on the awareness that the possibility of substantial losses is inherent in market transactions. This means that such risk is uncontrollable and must invariably be monitored, or the bank will have to face inevitable losses.

iii) Liquidity Risk Management.

Ayodele and Alabi (2016) posited that banks should recognize the management of liquidity risk as a vital aspect of their operations and should develop effective systems to ensure sufficient liquidity to meet their needs. To manage liquidity risk, banks must have in place a system to periodically assess the structure of funding sources and implement measures to maintain as well as improve this structure.

iv) Operations Risk Management.

Operations risk inherent in the handling of customer transactions and errors, unethical conduct, and certain other circumstances may lead to losses. Typical examples are disparities between actual cash and cash balances and customer complaints covering transactions. Accurate and rapid fulfillment of transactions requested by customers is the foundation of trust in the services of banks, and as banking activities become more diverse, proper management of these activities is essential to lessen and minimize operations risk (Ayodele and Alabi, 2014).

v) **Systems Risk Management.**

System risk is inherent in computer systems, and losses, as well as damages, may be incurred owing to malfunctions and unethical conduct. For financial institutions, which are highly dependent on these systems, there is a possibility that systems risk may have an impact on management. The management of systems risk should not be underestimated as merely a systematic or technological problem but as an actual type of management risk that should be monitored and controlled.

With that said, evidently, risk management is not limited to financial risk which is the most common or expected risk. There are various more pressing risks that, if not effectively managed, will adversely affect the financial performance of the bank, thereby reducing its competitive advantage in the industry.

Factors Affecting Robustness of Risk Management System

In terms of effecting a robust risk management system, the following factors may be considered:

Risk Reduction - According to Ndwiga et al. (2012), reduction of risks is done through monitoring and controlling by means of standard set of policies to ensure minimization of risks. Kiragu (2014) asserted that risk reduction practices positively affect the financial performance of an organization through loss control, risk mitigation, and risk transfer to insurance firms. They explained that risk reduction practices significantly improve the return on assets of the firm.

There were, however, some controversial findings by other scholars against the effects of risk management on financial performance. Mudaki et al. (2012) argued that rather than based on risk management, organizations need enough capital to sustain their financial performance; therefore, the firm's capital has a positive relationship. However, La and Choi (2012) posited that there exists a weak relationship between risk management and a firm's financial performance. They suggested that better performance can be affected mainly by board and management decisions than risk management while Retno & Denies (2012) argued that companies with better profits are engaged in smaller revenue generation with little effort in risk management structures, hence a negative link between risk management and performance.

Integration of Risks in Outsourcing- A literature review by the Chartered Institute of Internal Auditors (CIIA) (2013) showed that coordination with outside organizations like private and non-governmental organizations as well as overall internal audit function can effectively edify the risk management process through adopting skills on identifying and assessing risks to all levels of personnel.

Barclay (2013) argued in another review opposing the need for integration and outsourcing. He argued that the function of the existing internal audit has an impact on the RM processes and its function is to mitigate and manage the financial risks in the public sector. He added that internal audit has a crucial and sufficient role in supporting leadership and board members of the public sector. Allwright (2012) revealed in another study that instead of integrating, legislation of financial risk management is a vital success factor for RM implementation. He argued that integration undermines the regulations of the government departments and effective compliance to laws brings about remedial measures to mitigate financial risks.

Risk Management Information System- Mohammad (2014) observed that a successful risk management adoption needs to be accompanied by a compatible information system that enables organization information. He emphasized that risk management backed up by an information system improves the performance of an organization. Arnold confirmed the risk management system as a success factor as it can improve the organization's performance and a study by Hashim et al. (2012) revealed that the integration of risk management systems with information technology has a strong relationship in improving the company performance.

Several literature pieces discounted arguments against accepting risk management information system as a better success factor in enhancing a sound risk management system. Their arguments proved use of organizational innovation and or employing new ideas as a critical success factor in implementing a risk management system. Dugguh & Diggi (2015) posited that sourcing new, different ideas edifies risk management hence improving the organization's performance. Mbizi et al. (2013) asserted that innovation is the prime success factor that can sustain the implementation of a risk management system for a better firm position. A literature review by Zumitzavan & Udchachone (2014) proposed that new ideas in the organization can enable effective implementation therefore significantly affecting organizational performance.

All organizations are reliant on technology, which pervades their cultures, structures, and procedures. At the organizational level, research on technology risk has tended to focus on technology project risk, emphasising the design and execution of IT and IS (Jrgensen & Jordan, 2016). Improvement in information technology provides organizations with greater control and efficiency, as well as more timely and accurate outcomes, but they also bring with them present growing risks. Firms' ERM framework must therefore accommodate this new risk. Technological risks are becoming more prominent within organizations, and more dangerous, primarily because of the scale, complexity, and interconnectivity of devices and models (Bevan,

Ganguly, Kaminski, & Rezek, 2016; CDEI, 2020). Eleanor, Philips & Pradeep (2022) examined how the combination of Model Risk Management (MRM) and Enterprise Risk Management (ERM) combine to deal with the risks created by technology risks. The work highlighted the need to move away from a measurement and compliance approach to risk towards a broader and more proactive approach utilizing MRM and ERM.

Firm Size- It is argued that as a firm expands in size, the risks facing it also increase. However, with adequate resources at its disposal, it can dedicate greater resources to risk management (Golshan & Rasid). Yazid, Razali, and Hussin (2012) argued that well-managed company assets are extremely useful in supporting activities that could provide overall benefits to the company and shareholders. The consequence of a weak ERM (Enterprise Risk Management) program can lead to huge losses due to disruption in business operations and high costs incurred to mitigate the risks. ERM is geared to address risks that can occur to a business organization such as financial risk, strategic risk, and operation risk (Tazhir & Razali, 2010). What has led to the high rate of business risks include complexities of business transactions, advances in technology, globalization, and high speed in product life cycles. Similarly, the overall pace of change continues to increase the volume and the scale of risks facing organizations (Beasley et al, 2009). In addition, financial crisis, credit rating agencies, and the pressure from the exchange have also increased the clamor for effective risk management and oversight practices (COSO, 2009).

Theoretical Framework

Various scholars have adopted different theories to explain risk management in the financial sector such as stakeholder theory, credit market theory, financial distress theory, and extreme value theory. To this study, Financial Distress Theory is adopted due to its relevance which emphasizes the need for risk management in financial institutions such as banks and its importance in adding value to the company thereby improving its competitiveness in the industry. Also, to be reviewed here is the Stakeholders Theory, the Theory of the determinants of competition, and the Neoclassical Finance Theory.

Financial Distress Theory

Wruck (1990) stated that firms enter financial distress because of economic distress, declines in their performance, and poor risk management. When a firm's business deteriorates to the point where it cannot meet its financial obligation, the firm is said to have entered a state

of financial distress. The first signals of financial distress are violations of debt payments and failure or reduction of dividends payouts (Baldwin and Scott, 1983).

Boritz (1991) depicts a process of financial distress that begins with an incubation period characterized by a set of bad economic conditions and poor management which commits costly mistakes. In the case of commercial banks, the inability to provide cash to depositors and loans to borrowers as at when due may constitute a liquidity crisis and poor asset management. Other creditors also need to be considered when firms are putting in place risk management measures. Credit risks in banks need to be addressed since they may lead to financial distress. The banks should manage the credit and liquidity risk to avoid financial distress. The theory of financial distress emanates from the liquidity and credit risk facing a firm. This theory provides for a non-biased perspective on the relationship between credit risk and financial performance variables employed. By providing information that the effects of financial distress occur prior to default risk, the theory offers a neutral platform to undertake an incisive empirical analysis of this relationship within the commercial banks. (Olalekan et al, 2018).

Merton's Default Risk Model

The model was developed by financial scholar Robert C Merton in the 1970s and it's used in the evaluation of credit risks of firms. The model is used to determine the ability of debt owners to service their debts and can therefore help security analysts and officers who attempt to determine an organization's credit fault risk. The model suggests that the analysts should better value the financial institutions and check on their ability to remain liquid through the period under analysis and debt maturity.

This theory is based on some simple assumptions about the capital structure of the firm's finances. In the event of default, the firm's market value of the assets owned by the firm in relation to the liability of the firm falls below the set certain threshold and therefore the firm is in default. One of the reasons for the default in the banks is the Credit risk which forms part of the risks based by banks (Mutuku, 2016).

Theory of the Determinants of Competition

In terms of empirical measurement and associated factors driving competition, one can consider three types of approaches: market structure and associated indicators; contestability and regulatory indicators to gauge contestability; and formal competition measures. Much attention in policy context and empirical tests is given to the market structure and the actual degree of entry and exit markets as determining the degree of competition (Claessens, 2009).

The general Structure-Conduct-Performance (SCP) paradigm, the dominant paradigm in industrial organization from 1950 until the 1970s, made links between structure and performance. “Structure” refers to market structure defined mainly by the concentration in the market. “Conduct” refers to the behavior of firms—competitive or collusive—in various dimensions (pricing, R&D, advertising, production, choice of technology, entry barriers, etc.). “Performance” refers to (social) efficiency, mainly defined by extent of market power, with greater market power implying lower efficiency. The paradigm was based on the hypotheses that i) structure influences conduct (for example, lower concentration leads to more competitive behavior of firms); ii) conduct influences performance (for example, more competitive behavior leads to less market power and greater social efficiency); iii) structure therefore influences performance (Oxford University Press, 2007).

In essence, whether banks engage in competition is already decided by the market and industry. It is inevitable for a bank to compete as it must maintain its position in the industry and even go further. The structure of the market influences the behavior of banks, that is, whether they will compete or work together and on their market power. Therefore, banks need to employ proper risk management systems to ensure they compete effectively.

Empirical Literature

Internationally a good number of studies relating to risk management and bank competitiveness have been carried out; Mohd and Salina (2010) investigated on the relationship between risk administration practices and financial execution of the Malaysian Islamic banks. The period under study covered 2006 to 2008. To measure the risk administration practices, the researcher used five component issues regarding bank supervision practices as per the Basel committee. The five components used in the study are, the firm Risk Management Environment, Policies and Procedures of the firm, Risk Measurement procedures, Risk Mitigation, firm Risk Monitoring, and firms Internal Control. The components mentioned were then linked with the mean of ROA and ROE. The findings revealed that the Islamic banks with higher ROA and ROE tend to have better risk management practices. The study focused only on the 5 independent variables as the risk management measures determining financial performance.

Another study by Yijun, (2014) focused on the effect of credit risk administration practices on the profitability performance of commercial European banks in Europe. The study used regression analysis to determine and predict the relation between the variables under study. Monetary performance of the European banks was measured by ROA and ROE ratios. The independent variable used in the study was non-performing Loans Ratio (NPLR) and Capital Adequacy Ratio (CAR). The study inferred that there is a connection between CAR and

ROA and between NPLR and ROA of banks. Furthermore, the study focused on the relationship between risk management and financial performance of banks in Europe.

Oluwafemi and Simeon (2010) conducted a study on the Risk Management and Financial Performance of commercial Banks in Nigeria. Data for the study was derived from annual reports of ten Nigeria banks between the period 2006-2009. Profitability of the institutions was determined by ratios of ROA and ROE. The independent variables in the study were liquidity, credit, and capital risks. The study inferred that there is a critical relationship between bank performance and risks administration. Furthermore, it was also concluded that better risk management such as management of funds, reducing unnecessary costs such as doubtful advances and obligation value proportion examination brings about higher financial performance. In this way, the analyst held the view that it is of high significance that commercial banks have sufficient risk administration practices.

Kamau (2010) carried out a study on adoption of risk management by commercial banks in Kenya. His study was based on the 44 active commercial Banks as per CBK 2010. This study sought to identify the risks encountered by commercial banks and the risk management practices adopted by commercial banks to militate against these risks. A census survey was conducted for all the licensed banks in Kenya. Questionnaires were administered to risk management staff. Data was analyzed using SPSS and presented in graphs and in tabular form. The study revealed that credit, operation, reputation, and compliance risks as critical and commonly encountered. Liquidity risk was least encountered risk. Majority of the banks were found to use both qualitative and quantitative risk measurement methods.

Dezfouli, Hasanzadeh and Shahchera (2014) examined the effectiveness of liquidity risk on banks profitability of Iranian banking system for the period of 2005-2011. The study concluded that there is a significant relation between liquidity risk proxy and performance. Furthermore, Kamau and Njeru, (2016) conducted a study on the effect of liquidity risk on financial performance of six (6) Listed Insurance Companies in Kenya for the period 2012-2015. It was found out that credit risks have a negative effect on the financial performance of these companies. Goddard et al. (2004) study the influential factors of profitability of banks in Europe. They found a positive relationship between the CAR (bank capital and reserves to total assets). Another study by Samy and Magda (2009) investigate the effects of capital regulations on the performance of banks in Egypt. The research provides a comprehensive framework to measure the impact of capital adequacy on two indicators of bank performance: cost of intermediation and profitability. The result of the research indicates that higher capital adequacy “increase the interest of shareholders in managing the bank’s portfolio” which generates “higher cost of intermediation and profitability. More so, AraHodna et al (2009) examine credit risk

management and profitability of commercial banks in Sweden over the period 2007 - 2008. The findings and analysis reveal that credit risk management has effect on profitability. Among the two credit risk management indicators, NPLR has a significant effect than CAR on profitability (ROE).

Also, Yimka et al., (2015) examine the credit risk management and financial performance of selected ten (10) commercial banks listed on Nigeria Stock exchange from 2006 to 2010. The study analyzes the impact of these antecedents such as loan and advance loss provision, total loan and advances, non- performing loan, and total asset on accounting Return on Equity (ROE) and Return on Asset (ROA). The results reveal that credit risk management has significant effect on financial performance of commercial banks. Arif Hussain, Ihsan & Hussain, (2016) assess the effect of risk management on the performance of both large banking institutions and small banking institutions from 2005-2014. The result of the regression result concluded that capital adequacy ratio, non-performing loans, interest rate risk and liquidity risk are key drivers of profitability in large banks while nonperforming loans and capital adequacy ratio are the only drivers of profitability in small commercial banks of Pakistan. Furthermore, Soyemi, (2014) studied risk management practices and financial performance: evidence from the Nigerian deposit money banks (DMBs) in the 2012 financial year. The cross-sectional data was analyzed using descriptive statistics to depict pattern and robust standard errors OLS regression to estimate significant influence between banks" risk management practices (credit, liquidity, operating and capital risk practices) and their financial performance. The findings appear to be largely consistent with previous works as the explanatory variables significantly accounted for variations in the financial performance [ROA-92% (71.78); ROE-84% (46.55)] in both models.

Additionally, Alamro & Al-soub, (2012) investigate the factors that affect financial performance of (25) Jordanian Insurance Companies listed at Amman stock Exchange during the period (2002- 2007). The results showed that liquidity has a positive statistical effect on Financial Risk Management and Profitability.

Gaps in Literature

Empirical studies have focused on credit risk management, financial risk management and risk management practices in commercial banks. As per the literature review, most studies have used ROA and ROE as a measure of financial performance. The independent variables used in the questionnaire were namely: Risk Management environment, Risk measurement, Risk mitigation, Risk Monitoring, and adequate internal controls. In this study, to reduce the error term, additional variables have been introduced. Liquidity adequacy and investment

guidelines and strategies have been introduced as additional variables which will lead to reduced error term in the regression equation and make the regression results more precise.

Capital adequacy and investment guidelines and strategies were added in the variables listed above to reduce the error term and make the results more precise. The additional variables were derived from Rabobank Group). This institution operates under the CRD IV guidelines in capital framework which came to play at the start of January 2014. This guideline constitutes the Basel framework whose main agenda was to align regulatory requirements and procedures with the economic principal guidelines of risk management in financial institutions. The dependent variable (Financial Performance) shall be measured by ROE. This study has therefore filled the existing research and knowledge gap in the methodology by answering the following research question, does there exist a relationship between risk management and financial performance of commercial banks in Nigeria?

RESEARCH METHODOLOGY

Sample and Sampling Procedure

The target population for this study is banks operating in Nigeria between the periods 2008 to 2019. The rationale behind the selection of these periods is to ensure a fair and unbiased assessment of enterprise risk management of commercial banks in Nigeria prior to the 2020 lockdown due to covid-19 pandemic while consideration could be given to a pre covid-19 and post covid-19 pandemic era in future study. To obtain appropriate and bias-free results, secondary data was used in this study. The source of data comprises the annual reports of the 14 selected banks for the 12-year period. The method of data-gathering is the content analysis of annual reports for Enterprise Risk Management (ERM) practice. Furthermore, the data collection instrument consists of a checklist developed by the researcher in line with COSO framework on Enterprise Risk Management (i.e., COSO's integrated framework for ERM). This checklist contains 26 items as shown in Table 1.

Table 1. ERM checklist developed from COSO Framework

1. INTERNAL ENVIRONMENT	
1	Disclosure on risk culture /awareness of risk
2	Disclosure on risk management philosophy
3	Disclosure on risk appetite
2.OBJECTIVE SETTING	
1	There is process in place for setting organizational objectives
2	Risk affecting the achievement of objectives are specified
3	Objectives of the organization are aligned with risks appetite

3. EVENT IDENTIFICATION	
1	Internal events affecting achievement of objectives are identified
2	External events affecting achievement of objectives are identified
3	There is differentiation between risks (negative impact events) and opportunities (positive impact events)
4	Report addresses how internal and external factors combine to affect risk profile/risk appetite of the org
4. RISK ASSESSMENT	
1	Risks are assessed in terms of likelihood/ possibility of happening
2	Risks are assessed in terms of impact on the organization
3	Risks are assessed on inherent basis (risk that may occur due to any other factor other than failure of control)
4	Risks are assessed on residual basis (risk that are remaining after inherent risks have been controlled)
5	Risk assessment methodology (quantitative and qualitative) is disclosed
5 RISK RESPONSE	
1	Identifies and evaluates possible response to risks (TARA)
2	Response to risks is aligned with risk appetite/risk tolerance (acceptable threshold for risk)
3	degree to which risk response will reduce impact and/or likelihood is identified
6. CONTROL ACTIVITIES	
1	Policies and procedures are established and implemented to help ensure the risk responses are effectively carried out
2	Control activities occur throughout the organization, at all levels and in all functions
3	Control activities cover application and general info technology controls
7. INFORMATION AND COMMUNICATION	
1	Relevant information is identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities
2	Communication occurs in a broader sense, flowing down, across, and up the organization
8. MONITORING	
1	ERM mechanisms monitored on an on-going basis
2	There are separate evaluation mechanisms (say external audit) on ERM mechanisms/structure
3	Monitoring is accomplished through a combination of ongoing management activities and separate evaluations

Source: Adapted from COSO's integrated framework for ERM (2022)

Method of scoring items

Based on Table 1, if disclosure is made on an item, it is scored "1" while no disclosure is assigned "0". In essence, the total score obtainable is 26.

Measurement of Variables

The following variables were measured and used as the dependent variables in the study:

- i. ERM Practice - This was obtained by additively combining the score of each firm across the items in the checklist

- ii. Profitability - Measured using ROE calculated as $PAT/Equity \times 100$
- iii. Shareholder value - Measured using Tobin's Q computed as $NOOSI$ (Number of ordinary shares issued) \times Share price (at year-end)/ Total Assets

Further, four characteristics of banks as they affect ERM practice were investigated (applicable to research objective one):

- i. Degree of capitalization - measured by capital base
- ii. Organizational structure - banks grouped into those with holding structure and non-holding structure as approved by CBN
- iii. Systemic importance - banks grouped into systemically important and non-systemically important banks based on CBN classification
- iv. Scope of operation - measured by the type of license issued to banks by CBN, in the category of regional, national, and international banks.

Method of Data analysis

Descriptive and inferential statistics were used to describe the data and examine the relationships between the variables under investigation. Descriptive statistics used were frequency count, Mean, range, and standard deviation. Non-parametric test (an aspect of inferential statistics) such as Mann-Whitney U test (applicable when there are two groups of independent variables) and Kruskal Wallis Test (applicable when there are more than two groups of independent variables) were also used.

ANALYSIS AND FINDINGS

Descriptive statistics

Table 2: Descriptive Statistics on ERM Practice of study banks

	N	Minimum	Maximum	Mean	Std. Deviation
ERM SCORE	14	15	24	18.17	2.856
Valid N (listwise)	14				

Table 3: Descriptive Statistics on ROE of banks

	N	Minimum	Maximum	Mean	Std. Deviation
ROE 2019	14	1.2234	23.8897	9.121113	10.778709
ROE 2018	14	.04674	24.6490	9.657899	6.3452334
ROE 2017	14	.0000	27.7780	10.650224	8.9873131
ROE 2016	14	1.5463	26.6663	9.812927	8.1689946
ROE 2015	14	2.6339	24.4213	10.120095	7.2296266
ROE 2014	14	5.4204	29.7007	15.394147	6.5245090
ROE 2013	14	.0000	27.5076	12.966750	8.4380351

ROE 2012	14	.6624	394.3182	42.495621	101.5716974
ROE 2011	14	.0000	48.2709	11.638721	13.4006045
ROE 2010	14	.0000	105.1300	15.587600	26.9868839
ROE 2009	14	.0000	14.4266	3.124312	4.5300176
ROE 2008	14	.0000	21.3166	10.510194	7.0871645
Valid N (listwise)	14				

Table 4: Descriptive Statistics on TOBIN Q of banks

	N	Minimum	Maximum	Mean	Std. Deviation
TOBIN Q 2019	14	.0343	2.0908	.236290	.5396071
TOBIN Q 2018	14	.0889	2.1121	.200087	.7876568
TOBIN Q 2017	14	.0121	2.0908	.236290	.5396071
TOBIN Q 2016	14	.0099	1.0090	.120326	.2589564
TOBIN Q 2015	14	.0289	1.2220	.158861	.3104342
TOBIN Q 2014	14	.0395	.9371	.168439	.2316697
TOBIN Q 2013	14	.0665	.9942	.224016	.2487728
TOBIN Q 2012	14	.0271	.9567	.188736	.2441890
TOBIN Q 2011	14	.0314	.6039	.170944	.1833156
TOBIN Q 2010	14	.0762	1.2452	.336102	.3310820
TOBIN Q 2009	14	.0636	2.8429	.423399	.7130043
TOBIN Q 2008	14	.0931	85.6380	6.747109	22.7210832
Valid N (listwise)	14				

Table 5: Capital Base/degree of capitalization of banks

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25 to 100 billion	4	28.6	28.6	28.6
	101 to 200billion	4	28.6	28.6	57.1
	201 to 300 billion	3	21.4	21.4	78.6
	301 billion and above	3	21.4	21.4	100.0
	Total	14	100.0	100.0	

Table 6: Organizational Structure

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non-holding structure	10	71.4	71.4	71.4
	Holding structure	4	28.6	28.6	100.0
	Total	14	100.0	100.0	

Table 7: Systemic Importance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non- SIB	7	50.0	50.0	50.0
	SIB	7	50.0	50.0	100.0
	Total	14	100.0	100.0	

Table 8: Type of Operating License

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Regional	1	7.1	7.1	7.1
	National	4	28.6	28.6	35.7
	International	9	64.3	64.3	100.0
	Total	14	100.0	100.0	

Factors Affecting the Robustness of the Risk Management System of Banks

Capital Base/ Degree of Capitalization

Result from the analysis of the influence of Capital Base/ Degree of capitalization on ERM, using Kruskal-Wallis Test, is presented as follows:

Table 9: Ranks of Capital Base/ Degree of Capitalization

	Capital Base/Degree of Capitalization	N	Mean Rank on ERM Practice
ERM SCORE	25 to 100 billion	4	4.50
	101 to 200billion	4	6.50
	201 to 300 billion	3	8.50
	301 billion and above	3	11.83
	Total	14	

Table 10: Test Statistics^{a,b} for Degree of capitalization of Banks

	ERM SCORE
Chi-Square	5.604
Df	3
Asymp. Sig.	.171

a. Kruskal Wallis Test
b. Grouping Variable: Capital Base/degree of capitalization

In Table 9, it appears that the robustness of ERM practice varies directly with the level of capitalization. The least capitalized banks with capital base of 25 to 100 billion have the lowest mean rank of 4.50 on ERM practice; this is followed by banks with capital base of 101 to 200billion (mean rank of 6.50), and banks with 201 to 300 billion (mean rank of ERM practice at 8.50). Banks with capital base of 301 billion and above have the highest mean rank of 11.83. In essence, the robustness of ERM practice is positively related to the level of capitalization of banks.

In Table 10, the p value (Asymp. Sig.) is 0.122 which is greater than 0.05 (i.e. $p = 0.122 > 0.05$); this implies that the degree of capitalization does not significantly affect the robustness of ERM practice of banks (research objective one).

Organizational structure [holding structure/ non-holding structure]

Result from the analysis of the influence of Organizational structure on ERM, using Mann-Whitney U test, is presented as follows:

Table 11: Ranks

	Organizational Structure	N	Mean Rank	Sum of Ranks
ERM SCORE	Non-holding structure	10	6.60	66.00
	Holding structure	4	9.75	39.00
	Total	14		

Table 12: Test Statistics^a

	ERM SCORE
Mann-Whitney U	11.000
Wilcoxon W	66.000
Z	-1.287
Asymp. Sig. (2-tailed)	.198
Exact Sig. [2*(1-tailed Sig.)]	.240 ^b

a. Grouping Variable: Organizational Structure
b. Not corrected for ties.

In Table 11, holding structure obtained the higher mean rank of 9.75 compared to that of non-holding structure (6.60). This implies that ERM practice is positively related to the organizational structure of banks. Table 12 shows that the p value (Asymp. Sig.) is 0.198 which is greater than 0.05 (i.e., $p = 0.198 > 0.05$); this indicates that the organizational structure does not significantly affect the robustness of ERM practice of banks (research objective one).

Systemic Importance [systemically important banks (SIB)/ non-systemically important banks (non-SIB)]

Result from the analysis of the influence of Systemic Importance on ERM, using Mann-Whitney U test, is presented as follows:

Table 13: Ranks

	Systemic Importance	N	Mean Rank	Sum of Ranks
ERM SCORE	Non- SIB	7	5.00	35.00
	SIB	7	10.00	70.00
	Total	14		

Table 14: Test Statistics^a

	ERM SCORE
Mann-Whitney U	7.000
Wilcoxon W	35.000
Z	-2.261
Asymp. Sig. (2-tailed)	.024
Exact Sig. [2*(1-tailed Sig.)]	.026 ^b

a. Grouping Variable: Systemic Importance
b. Not corrected for ties.

In Table 13, the systemically important banks (SIB) have a higher mean rank of 70.00 as per the robustness of ERM practice; this contrast sharply with that of the non-systemically important banks (non-SIB), with mean rank of 35.00. In other words, the systemically important banks implement a more robust ERM framework. In Table 14, the p value (Asymp. Sig. (2-tailed) of .024 is less than .05 (i.e., $p = .024 < .05$). This implies that there is significant difference at 5% between the robustness of ERM practice of the systemically important and the non-systemically important banks. Thus, the systemic importance of banks significantly affects the robustness of ERM practice (research objective one).

Type of operating license (analysis using Kruskal-Wallis Test)

Result from the analysis of the influence of operating license on ERM, using Kruskal-Wallis Test, is presented as follows:

Table 15: Ranks

	Type of operating license	N	Mean Rank
ERM SCORE	Regional	1	3.00
	National	4	4.50
	International	9	9.33
	Total	14	

Table 16: Test Statistics^{a,b}

	ERM SCORE
Chi-Square	5.054
Df	2
Asymp. Sig.	.080

a. Kruskal Wallis Test
b. Grouping Variable: type of operating license

In Table 15, the international operating license has the highest mean rank of 9.33, followed by the national mean rank of 4.50 and the regional mean rank obtained the least mean rank of 3.00 in terms of the robustness of ERM practice. In other words, the banks with the

international operating license type implement a more robust ERM framework compared to the other license types. In Table 16, the p value (Asymp. Sig. (2-tailed) of .080 is greater than .05 (i.e., $p = .080 > .05$). This implies that there is no significant difference at 5% between the robustness of ERM practice of banks using international, national, and regional license types. Thus, the operating license type of banks does not significantly affect the robustness of ERM practice (research objective one).

Impact of the Risk Management on Long-Term Profitability of Banks

Result from the analysis of the impact of the risk management on long-term profitability of banks, using Mann-Whitney U test, is presented as follows:

Table 17: Relationship between Robustness of ERM Practice and Profitability of Banks

	Grouping based on ERM index (70 and above-1, below 70%=2)			
		N	Mean Rank	Sum of Ranks
ROE 2019	Very robust	6	9.33	56.00
	Less robust	8	6.12	49.00
	Total	14		
ROE 2018	Very robust	6	8.65	52.00
	Less robust	8	6.43	41.00
	Total	14		
ROE 2017	Very robust	6	9.67	58.00
	Less robust	8	5.88	47.00
	Total	14		
ROE 2016	Very robust	6	9.67	58.00
	Less robust	8	5.88	47.00
	Total	14		
ROE 2015	Very robust	6	9.00	54.00
	Less robust	8	6.38	51.00
	Total	14		
ROE 2014	Very robust	6	10.17	61.00
	Less robust	8	5.50	44.00
	Total	14		
ROE 2013	Very robust	6	9.67	58.00
	Less robust	8	5.88	47.00
	Total	14		
ROE 2012	Very robust	6	9.50	57.00
	Less robust	8	6.00	48.00
	Total	14		
ROE 2011	Very robust	6	7.17	43.00
	Less robust	8	7.75	62.00
	Total	14		

ROE 2010	Very robust	6	7.33	44.00
	Less robust	8	7.63	61.00
	Total	14		
ROE 2009	Very robust	6	9.42	56.50
	Less robust	8	6.06	48.50
	Total	14		
ROE 2008	Very robust	6	9.67	58.00
	Less robust	8	5.88	47.00
	Total	14		

Table 18: Test Statistics^a

	ROE 2019	ROE 2018	ROE 2017	ROE 2016	ROE 2015	ROE 2014	ROE 2013	ROE 2012	ROE 2011	ROE 2010	ROE 2009	ROE 2008
Mann-Whitney U	11.000	11.000	11.000	11.000	15.000	8.000	11.000	12.000	22.000	23.000	12.500	11.000
Wilcoxon W	48.000	47.000	47.000	47.000	51.000	44.000	47.000	48.000	43.000	44.000	48.500	47.000
Z	-1.632	-1.603	-1.678	-1.678	-1.162	-2.066	-1.678	-1.549	-.261	-.129	-1.545	-1.686
Asymp. Sig. (2-tailed)	.058	.084	.093	.093	.245	.039	.093	.121	.794	.897	.122	.092
Exact Sig. [2*(1-tailed Sig.)]	.106 ^b	.104 ^b	.108 ^b	.108 ^b	.282 ^b	.043 ^b	.108 ^b	.142 ^b	.852 ^b	.950 ^b	.142 ^b	.108 ^b

a. Grouping Variable: Grouping based on ERM index

b. Not corrected for ties.

The results in Table 17 show that banks with very robust ERM practice consistently have higher mean rank of profitability in comparison to those with less robust ERM practice. In Table 18, the p value is significant for five years (2019, 2018, 2017, 2016, 2014, 2013, and 2008). This implies that ERM practice has a significant impact on profitability in the long-term (research objective two).

Table 19: Ranks

Grouping based on ERM index (70 and above-1, below 70%=2)				
		N	Mean Rank	Sum of Ranks
TOBIN Q 2019	Very robust	6	7.59	52.00
	Less robust	8	6.81	49.00
	Total	14		
TOBIN Q 2018	Very robust	6	7.33	53.00
	Less robust	8	7.02	47.00
	Total	14		
TOBIN Q 2017	Very robust	6	8.33	50.00
	Less robust	8	6.88	55.00
	Total	14		

TOBIN Q 2016	Very robust	6	8.00	48.00
	Less robust	8	7.13	57.00
	Total	14		
TOBIN Q 2015	Very robust	6	7.33	44.00
	Less robust	8	7.63	61.00
	Total	14		
TOBIN Q 2014	Very robust	6	6.67	40.00
	Less robust	8	8.13	65.00
	Total	14		
TOBIN Q 2013	Very robust	6	7.67	46.00
	Less robust	8	7.38	59.00
	Total	14		
TOBIN Q 2012	Very robust	6	8.83	53.00
	Less robust	8	6.50	52.00
	Total	14		
TOBIN Q 2011	Very robust	6	8.00	48.00
	Less robust	8	7.13	57.00
	Total	14		
TOBIN Q 2010	Very robust	6	7.50	45.00
	Less robust	8	7.50	60.00
	Total	14		
TOBIN Q 2009	Very robust	6	7.17	43.00
	Less robust	8	7.75	62.00
	Total	14		
TOBIN Q 2008	Very robust	6	6.83	41.00
	Less robust	8	8.00	64.00
	Total	14		

Impact of Risk Management on Value Creation and Sustenance of Banks

Result from the analysis of the impact of the risk management on value creation and sustenance of banks, using Mann-Whitney U test, is presented as follows:

Table 20: Test Statistics^a

	TOBIN Q 2019	TOBIN Q 2018	TOBIN Q 2017	TOBIN Q 2016	TOBIN Q 2015	TOBIN Q 2014	TOBIN Q 2013	TOBIN Q 2012	TOBIN Q 2011	TOBIN Q 2010	TOBIN Q 2009	TOBIN Q 2008
Mann-Whitney U	19.000	17.000	19.000	21.000	23.000	19.000	23.000	16.000	21.000	24.000	22.000	20.000
Wilcoxon Z	55.000	51.000	55.000	57.000	44.000	40.000	59.000	52.000	57.000	60.000	43.000	41.000
Asymp. Sig. (2-tailed)	-.572	-.621	-.645	-.387	-.129	-.645	-.129	-1.033	-.387	.000	-.258	-.516
Exact Sig. [2*(1-tailed Sig.)]	.898	.503	.519	.699	.897	.519	.897	.302	.699	1.000	.796	.606
	.544 ^b	.571 ^b	.573 ^b	.755 ^b	.950 ^b	.573 ^b	.950 ^b	.345 ^b	.755 ^b	1.000 ^b	.852 ^b	.662 ^b

a. Grouping Variable: Grouping based on ERM index (70 and above-1, below 70%=2)

b. Not corrected for ties.

The results in Table 19 show that banks with very robust ERM practice also consistently have higher mean rank of value creation in comparison to those with less robust ERM practice. In Table 20, the p value is not significant for all the years concerned which implies that ERM practice does not significantly impact the value creation and sustenance of banks (research objective three).

Test of Hypotheses

Based on the empirical results of the study, the three hypotheses were tested as follows:

Hypothesis I:

H0: Selected organizational factors have no significant impact on the robustness of risk management practice of banks. The p values (Asymp. Sig.) for the degree of capitalization of banks and organizational structure are 0.122 and 0.198 respectively which are both greater than 0.05 (Tables 4.8b and 4.9b); this implies that the degree of capitalization and organizational structure do not significantly affect the robustness of ERM practice of banks. Similarly, using the Mann-Whitney U Test, the p value for operating license type is 0.080 which indicates that there is no significant difference between operating license and robustness of risk management in banks. Therefore, the null hypothesis is accepted for these three factors.

Meanwhile, systemic importance obtained a p value of 0.024 using the Mann Whitney U test which indicates that the systemic importance of banks significantly affects the robustness of ERM practice. Thus, the null hypothesis is rejected for this factor.

Hypothesis II:

H0: Risk management has no significant impact on the long-term profitability of banks.

Using the Mann Whitney U Test, the p value obtained for the ROE of banks are significant for five years (2017, 2016, 2014, 2013, and 2008). This implies that ERM practice has a significant impact on profitability in the long-term. Hence the null hypothesis is rejected.

Hypothesis III:

H0: Risk management has no significant impact on the value creation of banks.

The Mann-Whitney test was also used for this hypothesis, with the results showing that the p values obtained for the Tobin's Q of banks are not significant for all the years concerned. This implies that ERM practice does not significantly impact the value creation and sustenance of banks. Therefore, the null hypothesis is accepted.

Discussion of Findings

The results obtained in this chapter show that the selected factors affecting the robustness of ERM practice of banks are not all significant. Out of the four factors selected, three were found to have no significant impact, namely, degree of capitalization, organizational structure, and operating license types. However, the systemic importance of banks was shown to have a significant impact on the robustness of risk management systems in banks.

Further, the impact of risk management on long term profitability and value creation (the determinants of competitiveness of banks), were also tested to determine the effect of risk management on the competitiveness. The results of the ROE of the 14 banks for the 10-year period selected indicate that risk management has a significant impact on the long-term profitability, hence, banks that are looking to maintain profitability, in the long run, should ensure a robust risk management system is in place. On the other hand, risk management has no significant impact on value creation and the sustenance of banks, based on the results obtained for Tobin's Q value of Nigerian banks for 2008-2019.

Therefore, the only factor analyzed in this study that has a significant effect on the robustness of ERM practice is systemic importance, while the robustness of risk management systems in banks only has a significant impact on long-term profitability. This implies that efficient risk management is necessary as it significantly affects profitability in the long term, which in turn increases competitiveness in the industry.

SUMMARY

Risk management is an aspect of organization performance which is considered as important, although it is not always easy to implement. Because banks are one of the greatest engagers in risk, the research focused on commercial banks in Nigeria and how the robustness of their risk management system affects the profitability, value creation, and sustenance of banks. To measure the robustness of risk management systems in banks, a checklist was developed from the COSO ERM framework. Furthermore, various studies relating to risk management, organizational factors and bank competitiveness were analyzed. Generally, these studies show that risk management is a significant system in organizations which cannot be overlooked. Additionally, relevant theories were reviewed including Financial Distress Theory due to its relevance which emphasizes the need for risk management in financial institution and its importance in adding value to the company.

Based on the results of the research, which relied on secondary data of 14 banks meeting the sample criteria, it was determined that the degree of capitalization, organizational structure and operating license type have no significant impact on the robustness of risk

management systems. Meanwhile, systemic importance significantly affects the robustness of risk management systems. Using ROE and Tobin's Q, the results show that a robust risk management system or practice has a significant impact on long term profitability but not on value creation and sustenance of banks.

Previous studies conducted show varying positions on the significance of risk management on the performance of organizations. For instance, Mudaki et al. (2012) argued that rather than basing on risk management, organizations need enough capital to sustain their financial performance. However, from the results of this research, the firm's capital base has no significant impact on the robustness of risk management systems and thus does not significantly affect financial performance. On the other hand, La and Choi (2012) posited that there exists a weak relationship between risk management and a firm's financial performance. They suggested that better performance can be affected mainly by board and management decisions rather than risk management. Kiragu (2014) asserted that risk reduction practices positively affect financial performance of an organization through loss control, risk mitigation and risk transfer to insurance firms. Further, risk reduction practices significantly improve the return on assets of the firm which is in accordance with the findings in this research.

CONCLUDING REMARKS

Conclusions

Using the Kruskal Wallis Test, the degree of capitalization of banks and type of operating license were analyzed while the Mann-Whitney U Test was used to analyze the organizational structure. With all the three-obtaining p-values greater than 0.05, it can be concluded that these factors do not significantly affect the robustness of ERM Practice of banks.

On the other hand, the factor "systemic importance" was analyzed using the Mann-Whitney U Test and as the only factor with a p-value less than 0.05, systemic importance appears to be the only significant factor that banks should pay strict attention to out of the four factors analyzed in this research. Thus, systemic importance significantly affects the robustness of ERM systems in banks. In terms of long-term profitability, the p-value obtained was significant for 7 years (2019, 2018, 2017, 2016, 2014, 2013 and 2008) while the p-value for value creation was insignificant for majority of the years. Therefore, the robustness of risk management systems in banks has a significant impact on the profitability in the long term, but it has no significant impact on value creation and sustenance of banks.

Based on these results, it is evident that effective risk management practices are important in banks to ensure they maintain profitability in the long run, which in turn ensures a

greater competitive advantage over other banks in the industry. Thus, it can be concluded that risk management significantly affects the competitiveness of banks in Nigeria.

Recommendations

From the findings in the study which were based on information from annual reports, it is recommended that banks in Nigeria should consistently check and improve their risk management policies, taking into consideration the guidelines of the COSO ERM Framework. Further, more technical, and reliable risk management techniques should be adopted. In terms of the robustness of risk management practices, the factors discussed and analyzed in this research are not exhaustive, hence, factors such as capital adequacy, credit rating, and investment policies should be further expounded on.

Contributions to Knowledge

The study contributed to existing knowledge in enterprise risk management focusing on risk management practices may affect sustainability of financial institutions in Nigeria. Specifically, the study contributed to knowledge in the following areas enumerated below:

1. The impact of enterprise risk management has been variously studied by various researchers but scarcely in relation to sustainability of financial institutions. This study contributes to knowledge by bridging this gap.
2. This study adopted the Financial Distress Theory which is more directed towards risk management in financial institutions and its importance in value addition and competitiveness. This approach is a departure from previous studies on enterprise risk management which adopted other risk management theories that are not financial institution focused.
3. The study extended its scope beyond those of earlier studies covering critical and important time periods of banking sector reform. The study essentially contributes to knowledge in this area by extending the period covered to 2019. This contains the most recent available data at the time of the analysis.
4. The study also contributed to knowledge by modifying models that were used in earlier studies to include ERM Practice, Profitability and Shareholder Value
5. Lastly, it adds to the rich collection of works in literature.

Scope for Further Studies

The study focused on the impact of risk management on the sustainability of financial institutions in Nigeria. Future research should consider examining the potential impact of

enterprise risk management on sustainability of other key sectors of the Nigerian economy like manufacturing, health, IT or other service-oriented sectors. A key finding in this study is that enterprise risk management impacts on banks' competitiveness in Nigeria. In future research, examining the impact of enterprise risk management on banks' profitability might prove important while consideration could be given to a pre covid-19 and post covid-19 pandemic era analysis. Also, given the role of microfinance banks in the Nigerian economy, it is important that future research explore how enterprise risk management impacts on microfinance institutions in Nigeria.

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