OPERATIONAL RISK MANAGEMENT ANALYSIS OF NEPALESE COMMERCIAL BANKS

A Dissertation Submitted to the Office of the Dean, Faculty of Management in Partial Fulfilment of the requirement for the Master's Degree

By

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Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **“OPERATIONAL RISK MANAGEMENT ANALYSIS OF NEPALESE COMMERCIAL BANKS".** The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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Lila Pahadi

June, 2024

REPORT OF RESEARCH COMMITTEE

Ms. Lila Pahadi has defended the research proposal entitled **"OPERATIONAL RISK MANAGEMENT ANALYSIS OF NEPALESE COMMERCIAL BANKS"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Asso. Prof. Dr. Kapil Khanal and submit the dissertation for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled **"OPERATIONAL RISK MANAGEMENT ANALYSIS OF NEPALESE COMMERCIAL BANKS"** presented by Ms. Lila Pahadi a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the viva voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

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List of Abbreviations

BS - Bank Size

CAR - Capital Adequacy Ratio

CIR - Cost to Income Ratio

LR - Liquidity Ratio

NPL - Non-Performing Loan

NRB - Nepal Rastra Bank

ROA - Return on Assets

ROE - Return on Equity

Abstract

Operational risk management is essential for maintaining the financial stability and performance of commercial banks, particularly in Nepal, where the banking sector faces complex operational challenges. The Basel II Accord underscores the significance of managing operational risks, defined as losses due to inadequate or failed internal processes, people, and systems, or from external events. This study focuses on the commercial banks of Nepal, aiming to understand the current state of operational risk management and its impact on financial performance, especially in a competitive and regulatory environment.

The study examines three commercial banks in Nepal—Nepal Investment Mega Bank Limited, Kumari Bank Limited, and NMB Bank Limited—over a ten-year period from 2013/14 to 2022/23. Employing a descriptive and causal comparative research design, the analysis utilizes secondary data from annual reports and financial statements, supplemented by NRB's banking and financial statistics. The methodology includes descriptive statistics to summarize data, correlation analysis to explore relationships between variables, and regression analysis to determine the impact of operational risk management on financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE).

Findings reveal a significant impact of operational risk management on the financial performance of Nepalese commercial banks. Non-Performing Loans (NPL) positively correlate with ROA, suggesting that higher NPLs might be offset by higher interest earnings. Capital Adequacy Ratio (CAR) positively influences ROA, indicating that well-capitalized banks can generate better returns on assets. Conversely, the Liquidity Ratio (LR) has a slight negative impact on ROA, emphasizing the need for prudent loan portfolio management. The Cost-Income Ratio (CIR) and Bank Size (BS) show no significant impact on ROA, highlighting the importance of efficient cost management and optimal bank sizing. Overall, the study emphasizes the necessity for robust operational risk management practices and regulatory compliance to enhance the financial stability and performance of Nepalese commercial banks.

Keywords: Operational Risk Management, Financial Performance, Commercial Banks, Profitability

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Risk is an inherent aspect of every business venture, and in the realm of banking, the complexity and diversity of operations amplify the significance of risk management. Operational risk is one of the three main types of risks that commercial banks face. To improve overall bank stability, the Basel II Accord includes operational risk in its risk management framework. Basel II defines operational risk as the risk of loss due to inadequate or failed internal processes, people, systems, or external events. This definition covers legal risk but does not include strategic or reputational risk (Xu et al., 2019). The likelihood of encountering losses or damages due to deviations from anticipated outcomes characterizes risk, and the broader the spectrum of potential outcomes, the higher the associated risk (Wanjohi, 2013). Operational risk is defined by the Basel Committee as the possibility of suffering direct or indirect losses as a result of issues or malfunctions with internal systems, personnel, or processes, as well as outside occurrences. This covers a range of problems, including legal risk, which appears when contractual or regulatory requirements are not followed correctly and adversely impacts the bank's expansion and operations (Maina & Douglas, 2014). Notably, this definition lacks inclusion of strategic risk and reputational risk, which are significant components often integral to the operational risk landscape. In the banking industry, risk is not merely an inevitable by-product but a fundamental element, given that the industry thrives on the assumption of risks. Consequently, risk management becomes a pivotal aspect of banking, where the delicate balance between risk and return defines the industry's trajectory (Ebenezer, 2016).

Within the context of the Nepalese banking sector, the Nepal Rastra Bank (NRB) plays a crucial role in establishing guidelines to enhance risk management systems for commercial banks. These guidelines encompass a comprehensive approach, including the Capital Adequacy Framework and Risk Management Guidelines, designed to measure and compute capital requirements for operational risk. Operational risk, as defined by the Basel Committee on Banking Supervision, involves the potential for

losses arising from internal process failures, human errors, system malfunctions, or external events.

The risks associated with operations in banking are complex and include a wide range of issues such insufficient control systems, malfunctions in operations, violations of internal controls, fraud, and unanticipated disasters (Qu & Ma, 2015). Human resource elements, ranging from competence and work environment to turnover, contribute significantly to operational risks. External factors, like fires and other disasters, further augment the complexity of operational risk scenarios. Identifying and assessing these risks becomes imperative for banks, requiring a meticulous examination of existing products, services, and systems, as well as the formulation of robust policies to mitigate potential damages.

Operational risks manifest in various forms, including human or technical errors, settlement or payment risks, fraud, unauthorized transactions, and the potential for missed opportunities (Rao et al., 2023). Reputational risks stemming from customer, staff, or regulatory claims also contribute to the operational risk landscape. Consequently, banks must not only recognize these risks but also establish mechanisms to address them effectively (Maina & Douglas, 2014).

Quantifying operational risk poses a significant challenge due to the lack of clear mathematical or statistical links between risk factors and the likelihood of losses (Santomero, 1997). Consequently, banks often resort to qualitative risk assessment methods, categorizing risks as high, medium, or low. The focus remains on addressing frequent, small operational losses and major losses resulting from actions outside prescribed procedures.

To effectively manage operational risk, the Basel Committee proposes three approaches for calculating capital charges: the Basic Indicator Approach, Standardized Approach, and Advanced Measurement Approach. These methods offer varying levels of complexity, allowing banks to choose the one aligning with their risk management capabilities.

Monitoring operational risk is crucial for proactive management, with banks required to regularly report information to senior management and the board of directors. As

banking operations become more centralized, proper checks and balances are necessary at the unit level to prevent fraudulent transactions.

Operational risk management in Nepalese commercial banks is a critical aspect of ensuring the stability and efficiency of their operations. With the Nepal Rastra Bank (NRB) establishing comprehensive guidelines, including the Capital Adequacy Framework and Risk Management Guidelines, banks are better equipped to measure and manage operational risks. These risks, defined by the Basel Committee, encompass potential losses from internal process failures, human errors, system malfunctions, and external events. The multifaceted nature of operational risks, which includes challenges like inadequate control systems, fraud, and unforeseen disasters, necessitates meticulous risk identification and assessment. Furthermore, human resource factors and external calamities add layers of complexity to the risk landscape. Banks must implement robust policies to mitigate these risks effectively. Quantifying operational risk remains challenging, prompting reliance on qualitative assessments and approaches proposed by the Basel Committee, such as the Basic Indicator Approach, Standardized Approach, and Advanced Measurement Approach. Regular monitoring and reporting are essential for proactive risk management. In the dynamic banking sector, characterized by competition and technological advancements, a robust operational risk management framework is indispensable for sustaining financial viability and operational resilience.

1.2 Problem Statement

The landscape of banking operations has evolved significantly, marked by increased complexity, technological reliance, and specialized skills (Boot & Marinc, 2008). Operational risk has become a top priority for financial organisations, with technology and outsourcing at its core. Once an implicit and explicit process in the financial services industry, risk management is currently coming under more scrutiny because of the pressing need to improve business performance in the modern environment while averting accidents. Acknowledging that effective risk management is a significant competitive advantage, establishments strive to preserve steadiness, guarantee continuity, and stimulate income and profit expansion (Fheili, 2011). Yet, the lending process exposes financial organisations to operational risks that are intricate, dynamic, and internal, with the ability to jeopardise the organization's very

survival. This is because lending is a fundamental activity that is vulnerable to fraud, human mistake, and poor judgement.

The significant impact of a well-structured risk management program on enhancing firm value, with risk managers estimating that about 30% of a financial institution's risk is attributable to operational losses. Line managers face the challenge of determining acceptable risk levels to run their businesses, ensuring that the combination of earnings, capital, and internal controls adequately compensates for risk exposures. Consequently, it is critical to look into how operational risks affect commercial banks' profitability, with a particular emphasis on the lending process. Commercial banks' total operational risk management determines their success or failure, thus it's critical to track, manage, and control the variables that affect operational risks (Chitta & Soni, 2023).

The financial landscape in Nepal, characterized by increasing numbers of financial institutions and high liquidity, has led to intense competition among banks to advance credit. Unfortunately, this competition has resulted in a negative trend in credit recovery, evidenced by a consistent rise in non-performing loans. In response to this challenging environment, the regulatory body, Nepal Rastra Bank (NRB), has revised its directives on credit loss provision. This study aims to shed light on how joint venture banks in Nepal manage credit risk, aligning with the broader objectives of commercial banks - wealth maximization and contributing to the national economy. As financial institutions play a crucial role in economic development, understanding and managing operational risks in the lending process becomes paramount for achieving organizational goals and sustaining growth. The study is expected to reveal the following research questions.

- What is the current position of operational risk management and financial performance of the commercial banks of Nepal?
- What is the relationship between operational risk management with financial performance of the commercial banks of Nepal?
- What is the impact of operational risk management on financial performance of the commercial banks of Nepal?

1.3 Objectives of the Study

The measurement and comparison of the operational risks of the chosen commercial banks—NMB Bank Limited, Kumari Bank Limited, and Nepal Investment Mega Bank Limited—is the main goal of this study.

The specific objective of this study is:

- To examine the current position of operational risk management and financial performance of the commercial banks of Nepal.
- To assess the relationship between operational risk management with financial performance of the commercial banks of Nepal.
- To analyze the impact of operational risk management on financial performance of the commercial banks of Nepal.

1.4 Rationale of the Study

As this research is made mainly to analyze the operation risks and their management in reference to NRB directives and measures, it will provide valuable insight to different stakeholders about the major problems of banks and bank's action for its management. The researcher's completion of the master's degree requirements is also crucial. However, the government, investors, academics, commercial banks, and many other parties find the study to be significant. Lastly, it is anticipated that the study will provide a little bit of literature regarding the capital structure of commercial banks.

The three main pillars of banking are risk acceptance, management, and assessment. As everyone knows, operation risk management poses serious difficulties for the banking industry. It's the ambiguity around the borrowers' loan repayment obligations. In most cases, borrowers return loans when their assets exceed their debt; nevertheless, in cases where their assets fall short of their loan balance, they might not. Lenders must therefore be able to determine the possibility of a borrower's default as well as the worth of the borrower's assets. When giving out advances, banks should exercise extraordinary caution; in order to do this, they must gather pertinent information on the borrowers. A successful commercial lender requires good

communication skills and a clear vision in order to assess the goals and abilities of borrowers. Despite the fact that this is a crucial component of financial management, few academics have received specialised training in it. These days, joint venture banks are becoming more and more well-known thanks to their professional and skillful management, and they are also contributing significantly to economic growth. The key stakeholders who will be largely facilitated by this research includes,

- This study identifies commercial banks' operating risk management practices, associated variables, risk management philosophies, and NRB regulations.
- Since this research highlights issues with banking risk management and highlights the need for new policy creation or policy change, policy makers will also gain from it.
- Borrowers, depositors, and investors are also aware of the operation risk management practices used by these banks to conduct business.
- The beneficiaries will be those with known interest in the banking and finance sectors in Nepal.

1.5 Limitation of the Study

One person's work is the study's output. Thus, with the exception of the commercial banks under study, management, resource mobilisation, and time constraints prevent a thorough analysis of all operational commercial banks. The major limitation of the study is as follows.

- The investigation of commercial banks' operation risk management is the main focus of this study.
- Evaluation is made possible by examining the financial statements that banks have published and provided. It is therefore impossible to make generalisations about the banking sector as a whole.
- Three banks are selected for the study: Nepal Investment Mega Bank Limited, Kumari Bank Limited, and NMB Bank Limited.

- Just ten years' worth of secondary data, from 2013–14 to 2022–23, are collected. The inability to obtain adequate information also restricts the study's conclusions.

CHAPTER II

REVIEW OF LITERATURE

The Review of literature is an important part of any research work. It serves as the research dividing line. The current study is based on previous research. Therefore, prior research cannot be ignored. There should be coherence in research. The primary goal of a literature review is to determine what has been done and has not been done in the field of the research study being conducted in relation to the research problem at hand. This chapter is related to examine and review of some related books, article, published and unpublished different economic journals, bulletins, magazines, newspapers, yearly published balance sheet of respective banks, NRB directives and guidelines, economic survey, previous thesis on related subject and subject related website search.

2.1 Theoretical Review

Operational Risk Management (ORM) is grounded in various theories and principles that guide organizations in identifying, assessing, and mitigating risks associated with their day-to-day operations. Several theoretical perspectives contribute to the understanding and implementation of effective ORM. Here are some key theories related to operational risk management:

2.1.1 Systems Theory

Systems theory is a holistic approach that perceives an organization as a dynamic and interconnected system rather than a sum of independent parts. In the context of ORM, this theory conceptualizes the organization as a complex system with interrelated components, including processes, people, technology, and external factors.

Systems theory emphasizes the interconnectedness and interdependence of various operational elements within an organization. In ORM, this means recognizing that changes or disruptions in one area of the organization can have ripple effects across the entire system. For example, a breakdown in a key operational process might not only affect that specific process but also impact related processes, employees, and even external stakeholders.

The theory suggests that any alteration or disturbance in one part of the system can lead to cascading effects throughout the entire organization. In the realm of ORM, this is particularly relevant. For instance, failure in a critical technology system might disrupt multiple processes, leading to operational inefficiencies, financial losses, and even reputational damage. Systems thinking in ORM involve identifying these potential cascading effects to prevent or mitigate their impact.

ORM, guided by systems theory, takes a holistic approach to risk identification and management. Instead of isolating risks to specific departments or processes, it considers the broader implications. Risks are not treated in isolation but are assessed in the context of their potential to affect the entire organizational system. This approach allows for a more comprehensive understanding of the risk landscape.

Systems theory introduces the concept of feedback loops, where information about the performance of one part of the system influences the behavior of other parts. In ORM, feedback loops are essential for continuous monitoring and adaptation. An effective feedback mechanism enables organizations to learn from past incidents, adjust their risk management strategies, and enhance the adaptability of their operational systems.

Systems theory underscores the need for integration among different components of the system. In ORM, this involves integrating risk management practices into various aspects of organizational activities. It means that risk considerations are not standalone processes but are seamlessly integrated into decision-making, strategic planning, and daily operations.

Systems theory acknowledges the complexity and uncertainty inherent in organizational systems. ORM recognizes that operational risks are not always predictable and can emerge from unforeseen interactions between various components. Organizations adopting systems thinking in ORM are better equipped to deal with uncertainty by fostering a proactive and adaptable risk management culture (Laszlo & Krippner, 1998).

Given the understanding of organizations as systems, ORM influenced by systems theory places an emphasis on building resilience. Resilience involves the ability of the system to absorb shocks, adapt to changes, and recover quickly from disruptions. This

approach to ORM aligns with the idea that an organization's overall resilience is a critical factor in managing operational risks effectively.

2.1.2 Agency Theory

Agency theory, a branch of economics and organizational theory, focuses on the relationship between a principal (typically the owner or shareholder) and an agent (such as management or employees) who is entrusted to act on behalf of the principal. In the context of ORM, this theory explores the dynamics of this relationship and the associated challenges in managing operational risks.

One of the central tenets of agency theory is the recognition of potential conflicts of interest between principals and agents. In the context of ORM, conflicts may arise when the interests of shareholders (principals) diverge from those of management and employees (agents). For instance, management might prioritize short-term gains or take excessive risks that benefit them personally but may not align with the long-term interests of shareholders (Shapiro, 2005).

Agency theory also addresses information asymmetry, where the agent possesses more information about the organization's operations than the principal. In ORM, information asymmetry can lead to challenges in risk management, as shareholders may not have complete information about the potential risks and exposures faced by the organization. Effective ORM involves mitigating information asymmetry through transparent reporting and communication.

Operational risk management is inherently tied to decision-making and risk-taking behavior within an organization. Agency theory suggests that agents may engage in risk-taking behavior that serves their interests but may not align with the risk preferences of the principals. In ORM, this highlights the importance of establishing risk frameworks and governance structures that encourage responsible risk-taking and align it with the overall risk appetite of the organization.

Effective ORM, informed by agency theory, involves aligning the incentives of agents with the objectives of principals. This requires designing compensation and incentive structures that encourage agents to act in ways that are consistent with the long-term

interests of shareholders. In the context of ORM, it means linking performance metrics and incentives to risk management goals and outcomes.

Agency theory suggests the need for governance mechanisms to mitigate conflicts and align interests. In ORM, this translates to establishing robust risk governance structures. This includes the creation of risk committees, independent risk oversight, and clear lines of communication to ensure that the interests of shareholders are considered in operational decision-making.

The monitoring and accountability aspects of agency theory are highly relevant to ORM. Effective risk management requires ongoing monitoring of operational activities to ensure that agents are acting in the best interests of principals. Clear accountability mechanisms, such as performance evaluations and risk reporting, are essential components of ORM influenced by agency theory.

Beyond the principal-agent relationship, agency theory in ORM also recognizes the broader stakeholder environment. Effective risk management involves considering the interests of various stakeholders, including customers, regulators, and employees. Balancing these interests and ensuring that risk management practices align with broader stakeholder expectations is crucial for organizational sustainability.

Given the potential for conflicts of interest, agency theory emphasizes the importance of legal and regulatory compliance. ORM, informed by agency theory, includes measures to ensure that operational activities adhere to applicable laws and regulations. This not only mitigates legal risks but also contributes to building trust with stakeholders.

Agency theory underscores the ethical dimensions of the principal-agent relationship. In ORM, ethical considerations are critical for ensuring that agents act with integrity and in the best interests of principals. Ethical behavior in risk management contributes to the overall trustworthiness and reputation of the organization.

2.1.3 Human Reliability Theory

Human reliability theory focuses on understanding and mitigating the risk of human error in operational processes. It recognizes that people play a central role in

operational activities and that errors can lead to adverse consequences. ORM strategies based on human reliability theory involve training, supervision, and the implementation of systems and processes that account for the fallibility of human decision-making and performance (Kirwan, 2008).

Human reliability theory starts with the acknowledgment that humans are integral to operational processes within an organization. In the context of ORM, this theory recognizes that the actions, decisions, and behaviors of individuals in various roles significantly impact the overall operational risk landscape.

Human reliability theory accepts that humans are fallible, and errors are inherent in decision-making and performance. In ORM, understanding and accepting this fallibility is crucial for developing strategies that can mitigate the impact of human errors on operational processes.

ORM guided by human reliability theory involves the identification and analysis of potential human errors within operational processes. This can range from simple mistakes due to lapses in attention to more complex errors influenced by factors like stress, fatigue, or inadequate training. By categorizing and understanding these errors, organizations can develop targeted interventions.

A key component of ORM based on human reliability theory is investing in training and skill development programs. These initiatives aim to enhance the capabilities of individuals involved in operational processes, reducing the likelihood of errors. Training can cover technical skills, decision-making processes, and awareness of potential risks.

Human reliability theory emphasizes the importance of supervision and oversight in mitigating errors. In the context of ORM, this involves implementing effective supervision mechanisms to monitor and guide individuals during critical operational tasks. Supervision acts as a check and balance, providing an additional layer of assurance against potential errors.

ORM strategies informed by human reliability theory focus on designing systems and processes that account for the fallibility of humans. This may include incorporating

redundancies, creating user-friendly interfaces, and implementing automation where appropriate. The goal is to build operational systems that are resilient to human errors.

Human factors engineering, a discipline closely related to human reliability theory, considers human capabilities and limitations in the design of systems and equipment. In ORM, incorporating principles of human factors engineering helps create work environments that minimize the likelihood of errors and facilitate more effective risk management.

ORM influenced by human reliability theory encourages the development of a culture that values error reporting and learning. Creating an environment where individuals feel comfortable reporting errors without fear of punishment fosters a culture of continuous improvement. Learning from errors enables organizations to implement corrective actions and preventive measures.

Human reliability theory recognizes that external factors such as stress, fatigue, and workload can influence human performance. In ORM, strategies include managing these external factors to reduce their impact on operational processes. This may involve workload management, scheduling considerations, and providing resources to alleviate stress.

Human reliability theory emphasizes the need for continuous monitoring and adaptation to changes in human performance. In ORM, this involves regularly assessing the effectiveness of training programs, supervision mechanisms, and system designs. Adapting strategies based on real-world performance data ensures that ORM practices remain relevant and effective.

2.2 Empirical Review

Mishra and Kandel (2024) examines the factors that influence the operational performance of commercial banks in Nepal, with an emphasis on the functions played by capital sufficiency, the cost-to-income ratio, and other performance metrics. The study emphasises how crucial it is to preserve an ideal level of capital adequacy and cost-to-income ratio in order to influence commercial banks' profitability. Bank size, capital sufficiency, liquidity position, cost-to-income ratio, nonperforming loans ratio, and asset quality all exhibit favourable correlations with overall bank performance. It

has been shown that two crucial factors that influence profitability are the cost-to-income ratio and careful capital adequacy management. The importance of the liquidity ratio, capital sufficiency, and greater capital ratio in improving bank performance—especially in terms of return on assets—is confirmed by a study using one-year delayed components. Improved asset quality contributes to the bank's overall success as well. The importance of quick ratio, capital-to-assets ratio, investment-to-asset ratio, and liquidity ratio cannot be overstated in the context of effective liquidity management. It is recommended that commercial banks stay within a certain capital ratio threshold, steering clear of unnecessarily high levels that could hurt their bottom line.

Kayode (2024) determined the extent to which risk management has affected commercial banks' profitability in an effort to enhance their financial performance. Secondary data from listed banks that were taken from the Central Bank of Nigeria's list of financial institutions were used in this study. Study period: 2012–2021. For the study, a sample size of fourteen Nigerian commercial banks was used. Descriptive, Pearson correlation, multiple linear regression (ANOVA), and other statistical analyses were used to analyse the data. It was found that the Pearson results demonstrated a significant association between credit risk and operational risk as risk indicators and profitability metrics of net interest margin, with the exception of liquidity risk. The outcome of the linear regression showed that credit risk significantly affects net interest margin. On the net interest margin of commercial banks in Nigeria, however, liquidity and operating risk have no discernible impact. The results indicate that profitable commercial banks in Nigeria are significantly influenced by good risk management strategies.

Tamakloe et al. (2023) investigated how Ghanaian commercial banks performed with relation to risk management. Utilising a quantitative research methodology, the study made use of secondary data from the chosen institutions' annual financial statements. A purposeful sample of seven commercial banks was obtained. One criterion for choosing the seven commercial banks was that they should account for more than half of Ghana's financial market in terms of industrial deposits, according to the 2017 Ghana Banking Survey. The study's findings demonstrated that only operational risk—as opposed to credit, operational, liquidity, and market risks—was shown to

have a substantial impact on bank performance among the four categories of risks that were looked at. Of the variation in bank performance, 99.24% could be attributed to operational risk. Moreover, a substantial influence of overall risk management was noted, accounting for 74.74% of the variation in bank performance. It is advised that banks, regulators, and policymakers prioritise reducing operational risks when creating their risk management programmes, as this specific risk, out of all the other risk types studied, appears to have the greatest impact on banking performance. This is because operational risk appears to have a greater impact on bank performance in Ghana than any other risk factor.

Muchemi (2023) examined the core risk variables and financial performance of Kenyan commercial banks. The study conducted a thorough review of earlier research in the field of interest. The study's methodology and results were examined. Based on the results of previous investigations, conclusions about the link between the factors were made for this investigation. The study's results and findings served as the basis for the recommendations. Price level fluctuations had a negligible beneficial impact on return on equity but a large positive impact on the profitability of Kenya's commercial banks as measured by return on assets and net interest margin. Exchange rate fluctuation had a significant negative effect on profitability of commercial banks in Kenya based on return on assets and an insignificant negative effect based on return on equity and net interest margin. Variations in interest rates impact Kenya's commercial banks' profits. According to the study, interest rate fluctuations significantly improved the profitability of Kenyan commercial banks in terms of return on equity, return on assets, and net interest margin. According to the report, managers of Kenya's commercial banks should constantly be aware of the state of the economy in both their home nation and any other nations in which their branches are active. Based on return on assets, the study discovered that fluctuations in exchange rates are a significant predictor of Kenyan commercial banks' profitability. Thus, commercial bank management can engage in foreign exchange hedging through the use of established forward exchange rates. It was discovered that interest rate fluctuations had a considerable impact on the profitability of Kenyan commercial banks across all three metrics. Therefore, the study suggests that bank management should take advantage of times when there is a large demand for loans by raising loan interest rates, albeit little.

Mwanzia (2021) investigated how risk management affected Kenya's commercial banks' financial performance. For the research, the descriptive research technique was used. The annual Bank Supervision Report, one of the secondary data sources, helped with the secondary data gathering process, which covered the five-year period from 2016 to 2020. The data analysis was aided using SPSS version 27 and STATA, and the results were presented as tables, regressions, correlations, ANOVAs, and T-tests. Although the association was small and unimportant, the study found that financial performance and liquidity risk management had a favourable relationship. There was a small but significant positive correlation between credit risk management and financial performance. Although the link was small, operating risk management was positively correlated with financial performance. There was a noteworthy positive correlation between equity risk management and the financial performance of commercial banks. There was a noteworthy positive correlation between commercial banks' financial performance and bank size. According to the report, commercial banks should make sure they have the appropriate level of liquidity to prevent consumers from making rash withdrawals, but they should also make sure they give their clients enough credit to grow their interest income. To ensure that they give credit to consumers who deserve it, commercial banks should keep a close eye on the credit reports of their clients. It is imperative for commercial banks to establish appropriate internal controls and processes in order to mitigate instances of bank fraud, cheque fraud, hacking, and acquisition of unauthorised information. To enhance their equity, the banks had to allocate resources towards relevant innovations and research & development. To expand at a reduced cost in terms of both branch count and client base, the bank ought to allocate resources towards e-marketing and innovative technology.

Gitonga and Barasa (2021) investigated the connection between Kenyan commercial banks' profitability and risk management. The study made use of secondary data that was taken from 2014 to 2018 bank financial statements. To find the best possible answer, the study ran a number of diagnostic and statistical tests. The idea was tested using regression analysis. The study's findings indicated that there was a positive and significant relationship between capital management risk and bank profitability, a negative and significant relationship between bank deposits and profitability, a positive and significant relationship between bank size and profitability, and a

positive but significant relationship between operational risk and profitability of Kenyan commercial banks. Additionally, there was a negative and significant relationship between credit risk and profitability, a positive and significant relationship between interest risk and profitability, and a negative and significant relationship between foreign exchange risk and profitability of Kenyan commercial banks.

Oye (2020) examined how operational risk management techniques affected Nigerian commercial banks' bottom lines. The study analysed secondary data from audited financial statements of a subset of Nigerian commercial banks spanning ten years, from 2008 to 2017. We used the Linear Multiple Regression Model to analyse the data. The findings demonstrated a favourable correlation between operational risk management and bank financial performance. The results showed that good operational risk management techniques had a beneficial effect on banks' financial performance. As a result, the study suggested that bank management devote sufficient resources to comprehending operational risk in order to guarantee effective operational risk management and enhanced bank financial performance (Oye, 2020).

Fadun and Oye (2020) examined how operational risk management techniques affected Nigerian commercial banks' bottom lines. The study analysed secondary data from audited financial statements of a subset of Nigerian commercial banks spanning ten years, from 2008 to 2017. The Linear Multiple Regression Model was employed for the analysis of the data. The findings demonstrated a favourable correlation between operational risk management and bank financial performance. The results showed that good operational risk management techniques had a beneficial effect on banks' financial performance. As a result, the study suggested that bank management devote sufficient resources to comprehending operational risk in order to guarantee effective operational risk management and enhanced bank financial performance (Drake, 1979).

Muhtaseb and Eleyan (2020) examined how management accounting techniques are used in the Palestinian commercial banking industry to control operational risks. A questionnaire was issued to 78 Palestinian bank employees working in risk management, internal audits, and finance in order to collect data; 100% of the employees responded. To learn more about the results, six post-survey interviews

with six banking experts in Palestine were also carried out. The results, which were obtained using mean scores and descriptive statistics, show that the management accounting methods thought to be most closely associated with operational risk management in the banking industry are total quality management, financial statement analysis, and product profitability analysis. Additionally, the data demonstrate that management accounting procedures are thought to be most closely associated with keeping an eye on operational hazards and informing management of discoveries (Muhtaseb & Eleyan, 2020).

Isoh (2020) investigated the effects of operational risk management techniques on the monetary results of a few major Cameroonian commercial banks. The objectivism ontology and positivism epistemology served as the intellectual foundations for the quantitative case study design that was employed. Two hundred and fifty (250) workers of the National Financial Credit Bank (NFCB), the United Bank for Africa (UBA), and Eco Bank from the central and littoral regions of Cameroon were purposefully sampled for the purpose of collecting data using structured questionnaires. Using Amos 24 and SPSS 23, structural equation modelling, or SEM, was used to examine the data. The study found that training and reporting, risk monitoring and control, and internal operational risk management techniques all significantly improve financial performance. According to this study, implementing internal operational risk management measures improves financial performance. Additionally, training, reporting, and financial success are significantly mediated by risk monitoring and control.

Chukwunulu et al. (2019) investigated the impact of risk management on Nigerian bank performance. Unsystematic risk management metrics, such as credit, liquidity, operational, and capital adequacy risk, were utilised as the independent variables, and two bank performance indicators—return on equity and return on assets—were employed as the dependent variables. NDIC annual reports provided the 23 years of data for the study, which ran from 1994 to 2016. The OLS regression analysis was performed using SPSS. The models' appropriateness and the dependability of the findings were validated by the multicolinearity and autocorrelation results of Durbin Watson statistics and VIF, respectively. According to the coefficient of determination, risk management factors contributed 41% and 23%, respectively, to the changes in

return on equity and return on assets. Additionally, in Nigeria, operational risk and liquidity management have no discernible effects on bank performance, while capital adequacy has a discernible positive impact on return on equity and a negative, insignificant effect on return on assets. Credit risk, on the other hand, has a significant negative impact on return on equity and an insignificant negative impact on return on assets. The analysis came to the conclusion that Nigerian banks had inadequate risk management procedures. It suggested, among other things, that in order to prevent financial crises and enhance the performance of commercial banks, the CBN and other regulators work to enforce risk identification, assessment, measurement, and control systems in accordance with international best practices (Chukwunulu et al., 2019).

Rehman et al. (2019) sought to determine the risk management techniques used by Pakistan's commercial banks in Balochistan to reduce or eliminate credit risk. The study's conclusions are important because they will help commercial banks minimise credit risk by helping them understand how different risk management techniques work. The perspectives of workers of particular commercial banks regarding effective techniques for credit risk mitigation are analysed in this explanatory study. The study utilised multiple regression analyses to obtain quantitative data from 250 employees of commercial banks. According to the findings, there are four aspects that have an impact on credit risk management (CRM): corporate governance, which has the biggest effect, is followed by diversification, which is important, hedging, and the bank's capital adequacy ratio. These four risk management techniques are highlighted in this study because they are essential for commercial banks to address their credit risk (Rehman et al., 2019).

Xu et al. (2019) suggested the Double Correlation model, a more suitable model for correlation structure design that takes mean severity and frequency correlation into account at the same time. Based on this, annual loss scenarios are reinstated for every risk cell, and Monte Carlo simulation is also utilised to estimate VaR. An empirical study that compared the double correlation model with the other four correlation models using data from Chinese commercial banks that were made public. The outcome demonstrates risk diversification by showing that the VaR calculated by the twofold correlation model is substantially less than that calculated under the

comonotonicity assumption. When the confidence level is less than 99%, the VaR calculated by the double correlation model is much lower than that of the other two correlation models; however, if the confidence level increases to more than 99%, the correlations between them will reverse (Xu et al., 2019).

Olalere et al. (2018) investigated operational risk in the banking sector. The analysis found that while most studies are mostly theoretical and have little empirical support, there are gaps in the literature concerning developing economies. Information on the audited financial reports of sixteen (16) chosen commercial banks from 2009 to 2015 has been gathered, resulting in 112 observations. The Hausman test is used in the study's panel data analytical model to test hypotheses and determine whether an effect is random or fixed. While cost to income and the ratio of total operating expenses to total assets are indicators of the firm's profitability, net interest margin acts as a stand-in for operational risk. The study's controllable variables are the GDP growth rate and bank size. The random effect analysis in the model indicates that the bank efficiency ratio (ER) has a considerable negative impact on company performance. This implies that a bank's cost to income ratio will decrease in proportion to its net interest margin performance. The operating expenses ratio significantly improves the operation of the company. In Nigeria's commercial banking industry, operational risk has a greater influence on business performance than firm size. During the study period, the performance of commercial banks was significantly influenced by the GDP.

Isiaka et al. (2018) investigated how Nigerian commercial banks' profitability was affected by financial risk management. Financial risk management uses capital adequacy, credit, and liquidity risk as proxies for the independent variables, while return on asset is used to quantify profitability. Fifteen (15) commercial banks that were listed as of 2017 on the Nigerian Stock Exchange comprise the study's population; however, a sample of fourteen (14) banks was chosen for analysis based on data accessibility and availability. Information was taken from the financial statements for the years 2011 through 2016. The approach of multiple regression was used. The results showed that, although not significantly, liquidity risk increases profitability. Additionally, it was discovered that the capital adequacy risk had a substantial beneficial impact on the profitability of Nigeria's commercial banks, whereas the credit risk had a considerable negative effect. Among other things, it is

advised that banks control the loans they provide to their clients and make sure that the percentage of non-performing loans is kept to a minimum because this has been shown to empirically lower the bank's performance quality.

Vasiliev et al. (2018) investigated a successful approach to controlling a commercial bank's operational risk. The theoretical level of this article is covered by the hypothetical-deductive method. The empirical level research methods include a description of operational risk, its types, tools, and methods of assessment; a comparison of the operational risk management systems in the banks under study; and generalisation, analysis, and synthesis of the data received. A credit institution gains an advantage over rivals when its operational risk management system is updated and improved. This helps stabilise the bank, boost profitability and stability, decrease the amount of capital allocated to operational risk, and make banking services more appealing to customers. Effective operational risk management is a fundamental component of long-term development strategies in the current financial climate.

Kamau (2018) investigated how operational risk affected Kenya's tier two and tier three commercial banks' financial stability. By December 2017, 36 commercial banks licenced by CBK were the target population of the investigation, which employed a quantitative research design. Tier two and Tier three categories were used to classify the banks. Analysis was done using Time Series Cross-Sectional Unbalanced Secondary Panel Data. The panel data was out of balance since some of the information was lost over time as a result of bank failures, mergers, and buyouts. The 36 commercial banks in Kenya that have their financial statements published, the CBK annual reports, and the Banking Survey publications for the nine years between 2008 and 2016 were the sources of the data. Dummy variable with fixed effect The impact of operational risk management on the financial stability of Kenya's tier-two and tier-three commercial banks was determined using regression analysis. The financial performance of Kenya's tier two and three commercial banks was the study's dependent variable. It was calculated as the proportion of return on equity and return on assets. The natural logarithm of total assets was used to assess the bank's size, and the cost-to-income ratio was used to calculate the operational risk. The qualitative variables operational risk management practices, board and senior management oversight were difficult to measure, and they were in cooperated in the dummy

variable measure categorized under Tier two and Tier three. Each bank was given a value of one under the dummy variable if it fit into the tier two categories and zero if it fit into the tier three categories. The study included panel data techniques of fixed effects and panels least squares in conjunction with financial ratio analysis. To determine if fixed effects are preferable to random ones, the Hausmann test was used. To find out if the regression models have any econometric issues, diagnostic tests were run. According to the study's conclusions, tier two and three banks' financial performance is significantly harmed by operational risk. Bank size has a major positive impact on the financial performance of tier two and tier three banks. The study's conclusion was that operational risk, as determined by the cost to income ratio, had an inverse association with the financial performance of tier two and three banks. The study also found that, when using the dummy variable measure, tier three banks are less able than tier two banks to reduce operational risks. Therefore, in order to prevent significant operational losses that have a detrimental impact on the financial stability of the institutions, banks are encouraged to adopt appropriate risk management and measurement methodologies (Kamau, 2018).

Muriithi (2017) examined how operational risk affected Kenya's commercial banks' profitability. Profitability was determined by return on equity, and operational risk was determined by cost income ratio. All 43 of Kenya's commercial banks that were registered were covered by the interest period, which ran from 2005 to 2014. The Central Bank of Kenya received annual financial reports from commercial banks from whom the data was gathered. The generalised method of moments (GMM) and random effects estimation techniques applied to panel data were utilised to reduce the possibility of endogeneity issues and eliminate time-invariant unobserved firm-specific effects. The coefficient of determination, both within and between, was used to ascertain how much of the variance in the dependent variable is explained by the independent variable, and the Wald and F-tests were used to assess the regression's significance. Results show that cost income has a negative long- and short-term relationship with bank profitability.

Meshack and Mwaura (2016) examined the impact of operational risk management procedures on Tanzanian commercial banks' financial results. A descriptive research design was used to examine the study problem. The study's population comprised all

Tanzanian commercial banks. A sample size of 34 Tanzanian commercial banks was used in the study. As a result, every commercial bank took part equally. In this study, questionnaires served as the main instrument for gathering data. Descriptive statistics will be used for analysis and presentation of the information obtained from the respondents. The study discovered that the financial performance during the studied time was impacted by the three independent variables in the study: credit risk, insolvency risk, and operational efficiency. Credit danger During the study period, the financial performance of commercial banks was influenced by both operational efficiency and insolvency risk (Meshack & Mwaura, 2016).

Ebenezer (2016) assessed the impact of risk management procedures on Nigerian banks' financial results. It is a fact that financial institutions globally have demonstrated the critical role risk management plays for banks seeking to maintain their operational service efficiency and financial stability. Failure and low profit margins are frequently the result of mismanagement, high redundancy, waste, and inadequate risk management, according to researchers, analysts, and authorities in financial institutions. Investigating the effects of risk management on performance, bank operations, and service delivery is therefore crucial. But given a fiercely competitive market, the goal of this research is to examine the importance of risk management and banks' financial success. Research on risk management and financial performance in Nigeria's banking sector is being conducted for this study. It proves that ineffective risk management decreased profitability and led to the company's low profit margin or being more unnecessary in a fiercely competitive industry. The paper states that in order for the bank to achieve profitability, it is necessary for it to comply with several regulations and norms regarding its financial operations.

Ngaari (2016) investigated the impact of risk management procedures on Kenya's listed commercial banks' profitability. The purpose of the details is to assess how Kenyan listed commercial banks' profitability is impacted by their management of liquidity risk. to ascertain the impact of credit risk management on Kenya's listed commercial banks' profits. to ascertain how operational risk management affects Kenya's listed commercial banks' profitability. The study's compass was provided by the theories of stakeholders, circumstances, and agency. A combination of correlation and descriptive approaches were used to achieve the study's objective. The Nairobi

Securities Exchange included eight commercial banks, which were chosen using a purposeful sampling approach. Financial accounts that have been audited annually were the source of secondary panel data. To analyse the data, both inferential and descriptive statistics were applied. The study's hypothesis was tested using panel regression analysis.

Qu and Ma (2015) claimed that the second biggest risk facing China's commercial banks is operational risk. Thus, one of our primary responsibilities has always been to manage it well. It is now well acknowledged that commercial banks in China use systematic engineering for their operational risk management. As two crucial components of system engineering, the operational risk management process and strategy cannot function effectively without strong support from other sources, such as the operational risk management information system (ORMIS) and other components. This study examines the major roles, information transmission routes, and security of the operational risk management information system, which has been a powerful support for the management of operational risk of commercial banks in China. Finally, several recommendations have been made to offer practical support for the operational risk management in China's commercial banks.

Lyambiko (2015) investigated how Tanzanian commercial banks' financial performance was impacted by operational risk. The thirty-six commercial banks in Tanzania made up the population as a whole. The study was a census since it made use of secondary data that was easily accessible from the Bank of Tanzania and all commercial banks. A descriptive survey of Tanzania's commercial banks was used in the study. From 2009 to 2013, secondary data was gathered from Tanzanian commercial banks' financial reports.To determine the impact of operational risk management on Tanzanian commercial banks' financial performance, regression analysis was done. These factors included the credit risk, the insolvency risk, and the operational effectiveness that the Bank of Tanzania often offers. The financial performance of Tanzania's commercial banks was the study's dependent variable, and it was calculated as a percentage based on return on assets. The study's conclusions demonstrated the varied degrees to which the independent variables—credit risk, insolvency risk, and operation efficiency—were related to Tanzania's commercial banks' financial performance. The study also showed that operations risk management

has a favourable impact on Tanzanian commercial banks' returns. This study also found that, while credit risk and insolvency risk rate had a negative impact on Tanzanian commercial banks' financial performance, operations efficiency had a favourable correlation with those banks' financial results. Accordingly, this study suggested that commercial banks manage their risk factors properly, since shifts in risk factors such as operational risk result in currency depreciation and impact the performance of the commercial banks listed on the DSE (Lyambiko, 2015).

Maina and Alala (2014) declared that operational risk has a dynamic and complicated nature. In contrast to credit and market risk, operational risk is primarily internal to banks, is challenging to evaluate, and carries the danger of bank failure. 54 people from 10 commercial banks in Kakamega Town were involved in the lending process as part of the study's descriptive methodology. The primary tool used to collect data was the questionnaire. The performance of commercial banks in Kakamega Town was found to be significantly impacted by operation hazards. Based on the findings, it is clear that processes, culture, compliance, and character all positively correlate with profitability. However, it was discovered that there was a negative correlation with fraud. The partial regression coefficient of compliance is 0.295 based on the regression results. This suggests that any increase in compliance of one unit will result in 0.295 changes in profitability in the same direction, holding constant the influence of other explanatory variables. With the influence of other explanatory variables maintained constant, every increase in compliance of one unit will result in changes in profitability of 0.102, all in the same direction, according to the system's partial regression coefficient of 0.102.With the influence of other explanatory variables maintained constant, the partial regression coefficient of character, or 0.365, indicates that a one-unit rise in compliance will result in 0.365 changes in profitability in the same direction. With the other explanatory variables maintained constant, each increase in compliance by one unit will result in 0.308 changes in profitability in the same direction, as indicated by the partial regression coefficient of culture of 0.308. Thus, it follows that noncompliance will have an equivalently large detrimental impact on commercial banks' earnings.

Wanjohi (2013) examined how Kenyan commercial banks' financial performance was impacted by financial risk management. In order to accomplish this goal, the study

evaluated the commercial banks' present risk management procedures and made a connection between them and their financial performance. To approximate the financial performance of the banks, Return on Assets (ROA) was averaged over a five-year period (2008–2012). A self-administered survey questionnaire was utilised by all banks in order to assess their financial risk management protocols. Multiple regression analysis was used to analyse the study's data, and the results were displayed as tables and regression equations. The majority of Kenyan banks were found to be adopting sound financial risk management, and as a result, there is a positive association between the financial performance of Kenyan commercial banks and the financial risk management techniques discussed here. Despite the fact that banks generally understood risk and how to manage it, the study suggests that banks develop contemporary methods of measuring risk, such as value at risk, simulation models, and risk-adjusted return on capital. The report also suggests creating training programmes specifically designed to meet the needs of banking staff in risk management and using derivatives to reduce financial risk.

Table 1

Meta Table

Author (Date)	Objectives	Methodology	Findings
Mishra and Kandel (2024)	Investigates determinants of operational performance in Nepalese commercial banks, focusing on capital adequacy, cost-to-income ratio, and various performance indicators.	Analysis of secondary data with a focus on one-year lagged variables.	Capital adequacy, cost-to-income ratio, bank size, nonperforming loans ratio, liquidity position, and asset quality positively impact overall bank performance. Effective liquidity management and operating within an optimal capital ratio threshold are crucial for profitability.
Kayode	Establish the	Secondary data	Significant relationships

(2024)	impact of risk management on the profitability of commercial banks in Nigeria to contribute to financial performance improvement.	from listed banks (2012-2021); Pearson correlation, ANOVA.	among credit risk and operational risk with profitability measures of net interest margin. Credit risk significantly affects net interest margin, while liquidity and operational risk do not. Effective risk management strategies are key to profitability.
Tamakloe et al. (2023)	Examine the effect of risk management on the performance of commercial banks in Ghana.	Quantitative research using secondary data from annual financial statements of seven banks.	Operational risk significantly influences bank performance, accounting for 99.24% of variability. Total risk management impacts 74.74% of variance in bank performance. Emphasis should be placed on curbing operational risks.
Muchemi (2023)	Investigate fundamental risk factors and profitability of Kenyan commercial banks.	Systematic review of past studies.	Price level fluctuation positively affects profitability based on return on assets and net interest margin. Exchange rate fluctuation negatively affects profitability based on return on assets. Interest rate fluctuation has a significant positive effect on profitability. Managers should monitor economic conditions and engage in

			foreign exchange hedging practices.
Mwanzia (2021)	Examine the effect of risk management on financial performance of Kenya's commercial banks.	Descriptive research using secondary data (2016-2020); SPSS and STATA for data analysis.	Positive relationship between financial performance and liquidity risk management, though weak and insignificant. Credit risk management has a positive, weak, and insignificant relationship. Operating risk management has a positive, insignificant relationship. Equity risk management and bank size have significant positive relationships with financial performance. Recommendations for maintaining liquidity, advancing credit, internal controls, research and development, and innovations.
Gitonga and Barasa (2021)	Examine the relationship between risk management and profitability of commercial banks in Kenya.	Secondary data from financial statements (2014-2018); regression model.	Credit risk and profitability are negatively and insignificantly related. Interest risk positively and significantly related to profitability. Foreign exchange risk positively but non-significantly influences profitability. Liquidity risk and profitability are

			negatively and significantly related. Positive and significant relationships between capital management risk, bank size, and operational risk with profitability.
Oye (2020)	Analyze the impact of operational risk management practices on the financial performance of commercial banks in Nigeria.	Secondary data (2008-2017) from audited financial statements; Linear Multiple Regression Model.	Positive relationship between operational risk management and financial performance. Sound operational risk management practices impact positively on financial performance. Recommendations for adequate resource deployment towards understanding operational risk.
Fadun and Oye (2020)	Analyze the impact of operational risk management practices on the financial performance of commercial banks in Nigeria.	Secondary data (2008-2017) from audited financial statements; Linear Multiple Regression Model.	Positive relationship between operational risk management and financial performance. Sound operational risk management practices impact positively on financial performance. Recommendations for adequate resource deployment towards understanding operational risk.

Muhtaseb and Eleyan (2020)	Investigate the role of management accounting practices in managing operational risks in the Palestinian commercial banking sector.	Questionnaire and post-survey interviews with bank employees.	Financial statement analysis, product profitability analysis, and total quality management are related to operational risk management. Management accounting practices are crucial for monitoring operational risks and reporting findings to management.
Isoh (2020)	Examine the impact of operational risk management strategies on financial performance of selected mainstream commercial banks in Cameroon.	Quantitative case study; structured questionnaires from employees; SEM analysis.	Internal operational risk management practices, risk monitoring and control, and training and reporting have significant positive impacts on financial performance.
Chukwunulu et al. (2019)	Examine the effect of risk management on bank performance in Nigeria.	Secondary data (1994-2016) from NDIC reports; OLS regression analysis.	Credit risk has a significant negative effect on return on equity and an insignificant negative effect on return on assets. Liquidity management and operational risk have no significant effect on bank performance. Capital adequacy has a significant positive effect on return on

			equity but a negative insignificant effect on return on assets.
Rehman et al. (2019)	Identify risk management strategies undertaken by commercial banks in Balochistan, Pakistan, to mitigate or eliminate credit risk.	Quantitative data from 250 bank employees; multiple regression analysis.	Corporate governance has the greatest impact on credit risk management, followed by diversification, hedging, and Capital Adequacy Ratio.
Xu et al. (2019)	Propose a Double Correlation model for correlation structure construction in operational risk management.	Empirical study with data from Chinese commercial banks; Monte Carlo simulation.	The VaR estimated by the double correlation model is significantly lower than other models, proving the existence of risk diversification. The model is more effective at lower confidence levels.
Olalere et al. (2018)	Examine operational risk in the banking industry in Nigeria.	Secondary data from 16 commercial banks (2009-2015); panel data approach; Hausman test.	Bank efficiency ratio negatively affects firm performance, suggesting that lower cost-to-income ratio improves performance. Operating expenses ratio positively affects firm performance. Bank size is not an important determinant compared to operational risk. GDP growth rate is crucial for

			performance.
Isiaka et al. (2018)	Examine the effect of financial risk management on profitability of commercial banks in Nigeria.	Secondary data (2011-2016) from financial statements; multiple regression analysis.	Liquidity risk has a positive but insignificant effect on profitability. Credit risk has a significant negative effect on profitability. Capital adequacy risk has a positive and significant effect on profitability. Recommendations for regulating loan facilities and minimizing non-performing loans.
Vasiliev et al. (2018)	Examine an effective system for managing operational risk in commercial banks.	Description, comparison, generalization, analysis, and synthesis of information.	Effective operational risk management system helps stabilize banks, increase profitability, reduce capital provision for operational risk, and enhance attractiveness of banking services.
Kamau (2018)	Examine the impact of operational risk on the financial health of tier two and three commercial banks in Kenya.	Quantitative research with panel data (2008-2016); regression analysis.	Operational risk has a significant negative effect on financial performance. Bank size has a significant positive effect. Tier three banks are less able to mitigate operational risks compared to tier two banks. Recommendations for effective risk management and measurement techniques.

Muriithi (2017)	Analyze the effect of operational risk on profitability of commercial banks in Kenya.	Panel data techniques (2005-2014) from annual financial reports; random effects estimation.	Cost income is negatively associated with bank profitability both in the long run and short run.
Meshack and Mwaura (2016)	Analyze the effect of operational risk management practices on financial performance in commercial banks in Tanzania.	Descriptive research design; data collection through questionnaires.	Credit risk, insolvency risk, and operational efficiency influence financial performance. Recommendations for handling risk factors appropriately to avoid negative impacts on performance.
Ebenezer (2016)	Evaluate the influence of risk management practices on bank financial performance in Nigeria.	Ongoing research with focus on risk management practices and financial performance.	Poor risk management reduces profitability and results in low profit margins. Emphasizes the importance of adhering to financial operations with regulations and guidelines for profitability.
Ngaari (2016)	Examine the effects of risk management practices on the profitability of listed commercial banks in Kenya.	Descriptive and correlation design; secondary panel data from audited financial statements.	Positive correlation between risk management practices and financial performance. Recommendations for modern risk measurement techniques and use of derivatives to mitigate financial risk.

Qu and Ma (2015)	Analyze the operational risk management information system (ORMIS) in commercial banks in China.	Descriptive analysis of ORMIS functions, information transmission routes, and security.	Effective operational risk management strategy and ORMIS are crucial for managing operational risks in commercial banks in China. Recommendations for improving ORMIS to enhance operational risk management.
Lyambiko (2015)	Examine the effect of operational risk on the financial performance of commercial banks in Tanzania.	Secondary data from Bank of Tanzania and commercial banks (2009-2013); regression analysis.	Credit risk, insolvency risk, and operation efficiency have varying degrees of relationship with financial performance. Operations risk management positively influences returns. Recommendations for handling risk factors appropriately to avoid negative impacts on performance.
Maina and Alala (2014)	Examine the nature of operational risk in commercial banks in Kakamega Town, Kenya.	Descriptive approach with data collection through questionnaires.	Compliance, systems, character, and culture positively correlate with profitability. Fraud negatively correlates. Recommendations for enhancing compliance and systems to improve profitability.
Wanjohi (2013)	Analyze the effect of financial risk management on	Multiple regression analysis of data	Positive correlation between financial risk management practices and

	the financial performance of commercial banks in Kenya.	from survey questionnaires and financial reports (2008-2012).	financial performance. Recommendations for modern risk measurement techniques and training for banking personnel in risk management.

2.3 Research Gap

There is a substantial amount of literature on risk management in commercial banks, but there are still several important research gaps that need to be filled. These gaps are a result of both the specific goals of the proposed study on the measurement and comparison of operational risks in particular Nepalese commercial banks and the previous research on the subject.

The majority of the literature is devoted to banks in South Asian (China, Pakistan) and West African (Ghana, Nigeria, Kenya) nations. Research on risk management techniques in the context of commercial banks in Nepal is scarce. By looking at certain banks in Nepal, the proposed study seeks to close this knowledge gap by illuminating regional differences in risk management practices and their efficacy.

While some studies touch upon credit risk management, there is a need for a more in-depth analysis of the indicators specific to credit risk management in Nepalese commercial banks. The proposed study seeks to identify and evaluate these indicators, providing a nuanced understanding of how credit risk is managed in the Nepalese banking sector.

According to the literature analysis, there is a broad interest in how risk management affects financial performance, but there is little attention paid to particular metrics in the context of Nepalese commercial banks, such as loan loss reserves and non-performing loans. By evaluating these indicators and their implications for overall risk management efficacy, the proposed study seeks to close this gap.

While some studies recommend effective risk management, there is a gap in understanding how well commercial banks align with regulatory guidelines. The proposed study intends to assess the extent to which the selected Nepalese banks

adhere to guidelines set by the Nepal Rastra Bank (NRB), providing insights into regulatory compliance as a crucial aspect of risk management.

The existing literature often relies on historical data covering a specific time frame. The proposed study acknowledges the limitation of a ten-year period (2013/14 to 2022/23) and aims to provide a temporal analysis. This could reveal trends and changes in risk management practices over a more extended period, offering a more comprehensive understanding of their evolution.

CHAPTER III

RESEARCH METHODOLOGY

The study's main plan is outlined in the research methodology. It offers an overarching framework and study-related plan. It offers the general framework that the study is built around. The purpose of methodology is to describe, clarify, and forecast a fundamental framework that serves as the foundation for the study in order to form and deliver the proper outlook. The study technique must be explained before the analysis and interpretation of the data are presented, as without it, conclusions from the analysis could be interpreted incorrectly. The study question, model, variable definition, sample size and selection, data sources, and limitations are all highlighted. As a result, this chapter describes the methods used in this research. This chapter presents the study's context, which offers the background against which the study's findings were evaluated and from which trustworthy and reliable conclusions were drawn. As a result, this chapter offers an explanation of the study's empirical models, nature and sources of data, enterprise selection, analysis methodology, and research plan and design.

3.1 Research Design

The present investigation has utilised both descriptive and causal comparative research designs to examine the financial performance and risk management of commercial banks within the framework of Nepal. In order to gather sufficient information about risk management and the performance of Nepalese commercial banks, a descriptive study design has been used. When analysing variables such as return on equity, return on assets, earnings per share, non-performing loan ratio, liquidity ratio, capital adequacy ratio, debt-to-asset ratio, interest rate spread, cost-to-income ratio, and bank size, descriptive statistics are employed. It is employed to provide precise results and provide additional details regarding the sample's characteristics.

In order to ascertain the connection between financial risk management and the financial performance of Nepalese commercial banks, the study has also employed a causal comparative research design. More precisely, the study examines how

Nepalese commercial banks' financial performance is affected by risk management variables such as the percentage of non-performing loans to assets, liquidity, capital adequacy, debt to asset, interest rate spread, cost to revenue, and bank size.

3.2 Population and Sampling

The purpose of this study is to investigate the effects of risk management factors on the financial performance of Nepalese commercial banks. Three commercial banks in Nepal are included in the sample, and the data for each bank was gathered between 2013–14 and 2022–23, yielding a total of three observations. Convenience sampling was used to choose the banks for the study. One kind of non-probability sampling called convenience sampling takes a sample from the nearby portion of the population. Convenience sampling was used in this study to choose the banks for the sample. the list of sample banks chosen for the investigation, the duration of the investigation, and the quantity of observations.

- Nepal Investment Mega bank limited
- Kumari bank limited
- NMB bank limited

3.3 Nature and Sources of data

On secondary data, this study is built. The study's variables are divided into several categories, including the ratio of non-performing loans, liquidity, capital adequacy, debt-to-asset, interest rate spread, cost-to-income, bank size with return on equity, return on assets, and earnings per share. The used secondary data are of a yearly nature. The secondary sources of data and information were the annual reports of a few chosen commercial banks as well as the banking and financial statistics of the NRB. In order to facilitate easy identification and evaluation, data pertaining to the independent and dependent variables of the sample banks are gathered and coded using a unique code for each sample bank. The secondary data include financial information from commercial banks for a ten-year sample period, from 2013–14 to 2022–23.

3.4 Data Analysis Techniques

Analysing the risk management and financial performance of particular commercial banks in the context of Nepal is the primary goal of the data analysis in this study. As a result, the topics covered in this part are economic and statistical models that are used to secondary data analysis. To portray quantitative data in a format that is manageable, descriptive statistics are employed. It assists us in logically simplifying vast volumes of data (such as mean, standard deviations, minimum and maximum values). Finding the direction and amount of a relationship between two sets of variables is done through correlation analysis, which is the process of examining the relationship's strength using statistical data that is already accessible. Furthermore, regression analysis is a statistical method for evaluating the relationship between variables. It can be used alone or in conjunction with other factors to determine the influence of independent variables over dependent variables.

3.5 Research Framework and Variables

The financial performance and risk management of Nepalese commercial banks are the main subjects of this study. The methodical process of comprehending, assessing, and mitigating risks in order to increase the likelihood of goals being met and guarantee the sustainability of communities, organisations, and individuals is known as risk management. It also makes fresh opportunities visible to the organisation. An explanation of this framework benefits the study in two ways: it makes the relationships between the variables among the research variables clear. The conceptual framework, which is related to the problem statement, provides context for the presentation of the particular research questions that form the basis of the report's examination. The schematic diagram of risk management and financial performance in Nepalese commercial banks is displayed in Figure 3.1.

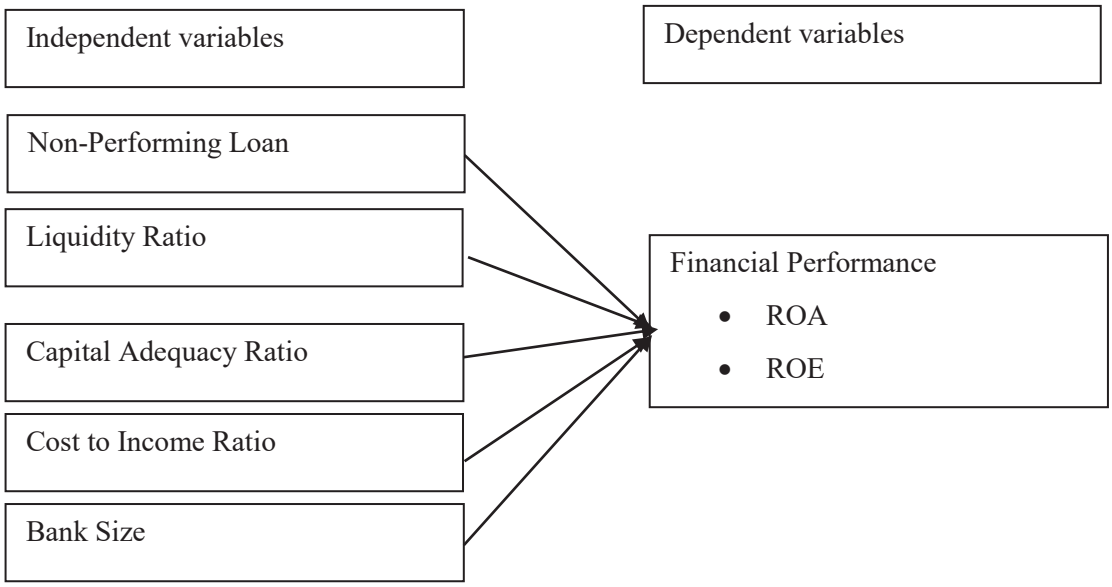

Figure 1. Conceptual Framework

Non-Performing Loan (NPL):

Any loan for which the borrower is not returning any principal or interest is considered non-performing. It is a loan that is in default or on the verge of default, to be more precise. In general, a loan is deemed non-performing if interest and principal payments are overdue by 90 days or more, or if interest has been capitalised, refinanced, or postponed by consent for at least 90 days.

Liquidity Ratio:

Financial measures called liquidity ratios are employed to assess a company's capacity to settle its short-term loan commitments. The current ratio and the quick ratio are the two liquidity ratios that are most frequently used.

A company's ability to pay short-term debt or debt that is due within a year is gauged by its current ratio. Current Assets / Current Liabilities is how it is computed.

Capital Adequacy Ratio (CAR):

A bank's available capital is stated as a percentage of its risk-weighted credit exposures, and this is known as the capital adequacy ratio. CAR is utilised to safeguard depositors and advance global financial systems' efficiency and stability. (Tier 1 Capital + Tier 2 Capital) / Risk-Weighted Assets is the formula used to compute it.

Cost to Income Ratio:

One crucial financial metric that is especially significant in the banking sector is the cost to income ratio. It is computed by dividing operating income by operating expenses for a bank. A bank's efficiency can be inferred from this ratio; a lower cost to income ratio is indicative of more efficiency. Operating Expenses / Operating Income is the formula.

Bank Size:

The term "bank size" describes the scope or size of a bank's activities. It is commonly expressed in terms of total assets, total deposits, total loans, or market capitalization. In comparison to smaller banks, larger banks usually offer more diverse services and a greater customer base.

Return on Assets (ROA):

A company's profitability in relation to its total assets can be determined by looking at its return on assets. An analyst, investor, or manager can determine a company's level of asset utilisation efficiency by looking at its return on assets (ROA). Net Income / Total Assets is how it's computed.

Return on Equity (ROE):

The financial performance metric known as return on equity is computed by dividing net income by shareholders' equity. ROE is seen as a gauge of how well management uses the resources of a business to produce profits. Net Income / Shareholder's Equity is the formula.

CHAPTER IV

RESULT AND DISCUSSION

Data analysis is the process of developing answer to the questions through the examination and interpretation of data. This chapter presents the systematic and orderly results of the study in the form of presentation, interpretations and analysis of the secondary data. The basic steps in the analytical process consist of identifying issues, determining the availability of suitable data, deciding the method appropriate for answering the questions of interest, applying the methods and evaluating, summarizing and communicating the results. Chapter four provides systematic presentation, interpretation, and analysis of secondary data in order to deal with various issues associated with risk management and financial performance of the Nepalese commercial banks. The purpose of this chapter is to analyze and interpret the data collected during the study. Various statistical tools described in chapter three have been used for this purpose. This chapter is divided into five sections. The first section deals with structure and pattern analysis of data, second section deals with descriptive statistics, third section deals with the correlation analysis, fourth section deals with step wise regression analysis and the final section ends with concluding remarks about the result derived for the secondary data.

4.1 Descriptive Statistics

Table 2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	30	.94	2.13	1.5413	.36105
ROE	30	4.13	21.07	12.8929	3.76667
NPL	30	.37	3.30	1.5104	.97387
LR	30	62.83	89.78	81.9033	6.98530
CAR	30	10.98	17.01	13.7263	2.05644
CIR	30	21.61	51.88	38.8254	7.07300
BS	30	41.33	255.20	135.5842	61.25697

The descriptive statistics provide a comprehensive overview of key financial metrics for the analyzed dataset, encompassing Return on Assets (ROA), Return on Equity (ROE), Non-Performing Loans (NPL), Liquidity Ratio (LR), Capital Adequacy Ratio (CAR), Cost to Income Ratio (CIR), and Bank Size (BS). Across the 30 data points, ROA exhibits a range from 0.94 to 2.13, with a mean of 1.5413 and a standard deviation of 0.36105, indicating moderate variability in profitability. ROE ranges from 4.13 to 21.07, with a mean of 12.8929 and a standard deviation of 3.76667, reflecting the institutions' varying levels of return relative to their equity. NPL demonstrates a wider range from 0.37 to 3.30, with a mean of 1.5104 and a standard deviation of 0.97387, suggesting differences in credit risk management. LR spans from 62.83 to 89.78, with a mean of 81.9033 and a standard deviation of 6.98530, illustrating variations in liquidity positions. CAR ranges from 10.98 to 17.01, with a mean of 13.7263 and a standard deviation of 2.05644, indicating the adequacy of capital reserves across institutions. CIR shows a broad range from 21.61 to 51.88, with a mean of 38.8254 and a standard deviation of 7.07300, highlighting differences in operational efficiency. Lastly, BS exhibits substantial variability, ranging from 41.33 to 255.20, with a mean of 135.5842 and a standard deviation of 61.25697, underscoring differences in the scale of operations among the institutions. These descriptive statistics offer valuable insights into the distribution and variability of financial performance metrics, aiding stakeholders in assessing the overall health and efficiency of the institutions within the dataset.

4.3 Correlation Analysis

Correlation analysis is a statistical method used to determine the strength and direction of the relationship between two variables. This technique quantifies the degree to which a pair of variables are linearly related. The correlation coefficient, which ranges from -1 to 1, indicates the nature and extent of this relationship. A value of 1 implies a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 suggests no linear correlation between the variables.

Table 3

Correlation analysis

	ROA	ROE	NPL	LR	CAR	CIR	BS
ROA	1						
ROE	.098	1					
NPL	.237	.017	1				
LR	-.267	-.079	-.319	1			
CAR	.050	-.067	.387	.271	1		
CIR	-.309	-.153	.038	.216	.203	1	
BS	-.213	.162	.578**	.085	.494*	.052	1

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

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

The correlation coefficient between ROA (Return on Assets) and ROE (Return on Equity) is 0.098, which suggests a very weak positive relationship. This indicates that profitability measures related to total assets and shareholders' equity do not necessarily move in tandem to a great extent. This weak linkage suggests that factors other than asset performance may influence equity returns significantly, such as leverage.

There is a correlation of 0.237 between ROA and NPL (Non-Performing Loans), indicating a weak positive relationship. This suggests that higher profitability might coincide with a greater amount of non-performing loans. This could imply that banks with higher returns on assets may be taking on riskier loans that have not yet, but may potentially, turn into non-performers.

The negative correlation of -0.267 between ROA and the Loan Ratio (LR) implies that as the proportion of loans to total assets increases, the ROA tends to decrease. This could be due to higher loan ratios leading to less efficient utilization of assets or increased risk of defaults affecting profitability.

A very weak correlation of 0.050 between ROA and CAR (Capital Adequacy Ratio) suggests negligible linear association, indicating that the efficiency of asset utilization to generate profits does not necessarily correlate strongly with the bank’s capital relative to its risks.

There is a moderate negative correlation of -0.309 between ROA and the Cost-Income Ratio (CIR). This suggests that as operational efficiency decreases (indicated by a higher CIR), the bank's profitability in terms of its assets tends to decline. This relationship highlights the impact of operational costs on profitability.

A negative correlation of -0.213 between ROA and Bank Size (BS) indicates that larger banks might exhibit slightly lower returns on assets, suggesting potential inefficiencies or differing business models that do not translate increased size directly into proportional profitability.

4.4 Regression Analysis

Table 4

Regression Analysis with ROA

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.073	.923		2.246	.038
	NPL	.177	.101	.477	1.755	0.020
	LR	-.003	.012	-.058	-.251	0.031
	CAR	.042	.042	.237	1.001	0.049
	CIR	-.017	.010	-.332	-1.701	0.106
	BS	-.003	.001	-.584	-2.304	0.033

a. Dependent Variable: ROA

The regression analysis aimed at understanding the determinants of Return on Assets (ROA) indicates that Non-Performing Loans (NPL), Loan Ratio (LR), and Capital Adequacy Ratio (CAR) significantly impact ROA. The unstandardized coefficient for NPL is 0.177 with a p-value of 0.020, indicating a positive and significant relationship. This suggests that an increase in NPL is associated with an increase in ROA, possibly due to higher interest earnings despite the risk associated with non-performing assets. Similarly, CAR has an unstandardized coefficient of 0.042 and a p-value of 0.049, indicating a positive effect on ROA. This positive relationship

suggests that a higher capital adequacy ratio, which reflects a bank's financial health and stability, enhances its ability to generate returns on assets.

Loan Ratio (LR) shows a slight negative impact on ROA with an unstandardized coefficient of -0.003 and a p-value of 0.031. Although the effect is minor, it is statistically significant, indicating that an increase in the loan ratio slightly reduces ROA. This might be due to the increased risk and potential for loan defaults associated with higher loan volumes.

Conversely, the Cost-Income Ratio (CIR) and Bank Size (BS) do not exhibit significant impacts on ROA, with p-values of 0.106 and 0.033, respectively. The unstandardized coefficient for CIR is -0.017, suggesting a negative relationship, but the lack of statistical significance means this result cannot be reliably generalized. Similarly, Bank Size, with an unstandardized coefficient of -0.003, does not significantly affect ROA despite showing a negative relationship. These findings indicate that factors such as operational efficiency (CIR) and the overall size of the bank (BS) might not directly influence ROA in a significant manner within this dataset, highlighting that other variables or external factors might play a more pivotal role in driving a bank's return on assets.

Table 5

Regression Analysis with ROE

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.782	11.591		1.793	.090
	NPL	-.581	1.264	-.150	-.460	0.051
	LR	-.052	.150	-.097	-.349	0.031
	CAR	-.213	.522	-.116	-.408	0.088
	CIR	-.064	.125	-.120	-.510	0.017
	BS	.020	.019	.321	1.052	0.030

a. Dependent Variable: ROE

The regression analysis for Return on Equity (ROE) demonstrates mixed significance among the predictor variables. Non-Performing Loans (NPL) has an unstandardized coefficient of -0.581 and a p-value of 0.051. Although this p-value is just above the conventional threshold of 0.05, it suggests a trend towards significance, indicating that higher NPLs may negatively impact ROE. However, since it is slightly above 0.05, we cannot definitively conclude its significance in this model. This near-significant negative relationship hints at the detrimental effect of non-performing loans on a bank's equity returns.

Loan Ratio (LR) and Capital Adequacy Ratio (CAR) also show a lack of strong significance in their impact on ROE. LR has an unstandardized coefficient of -0.052 and a p-value of 0.031, indicating a significant negative impact on ROE. This suggests that higher loan ratios might reduce returns on equity, likely due to increased risk and potential defaults. CAR, with an unstandardized coefficient of -0.213 and a p-value of 0.088, shows a non-significant negative relationship. Although the negative coefficient suggests that higher CAR might decrease ROE, the p-value indicates that this effect is not statistically significant at the 0.05 level.

Conversely, the Cost-Income Ratio (CIR) and Bank Size (BS) present notable findings. CIR has an unstandardized coefficient of -0.064 and a p-value of 0.017, indicating a significant negative impact on ROE. This implies that higher operational costs relative to income can significantly reduce equity returns, highlighting the importance of operational efficiency. Bank Size, with an unstandardized coefficient of 0.020 and a p-value of 0.030, shows a significant positive relationship with ROE. This suggests that larger banks tend to have better returns on equity, possibly due to economies of scale and more diversified income sources. Overall, while some variables like CIR and BS significantly affect ROE, others like NPL and CAR do not show strong statistical significance in this model.

4.4 Discussion

The findings and the empirical review reveal both significant alignments and notable distinctions regarding the impact of various risk management practices on the financial performance of commercial banks. One major area of alignment is the crucial role of operational risk management. Findings of the thesis demonstrates that

effective operational risk management, encompassing human errors, system failures, and fraud, significantly influences the financial stability and profitability of Nepalese commercial banks. This finding is echoed in the empirical review, where studies such as those by Tamakloe et al. (2023) and Oye (2020) also underscore the positive impact of operational risk management on bank performance in Ghana and Nigeria, respectively. These studies collectively highlight that prioritizing operational risk management can lead to improved financial outcomes, suggesting that banks should dedicate sufficient resources to mitigate these risks effectively.

Another area of similarity is the importance of capital adequacy. The findings point out that a higher capital adequacy ratio, which reflects a bank's financial health and ability to absorb losses, positively affects the return on assets (ROA). This finding aligns with the broader literature, where the empirical review shows that maintaining a robust capital adequacy ratio is essential for financial stability and performance. For instance, studies included in the empirical review consistently indicate that capital adequacy positively correlates with improved financial metrics, thereby reinforcing the thesis's assertion that strong capital reserves are vital for risk management and financial performance.

However, there are also notable differences between the thesis findings and the empirical review, particularly in the context-specific insights provided by the thesis. While the empirical review often focuses on broader regions such as West Africa and China, the thesis provides a detailed analysis of the Nepalese banking sector. This regional specificity reveals unique aspects of risk management practices in Nepal that are not captured in the broader empirical studies. For example, the thesis identifies the critical role of regulatory compliance with Nepal Rastra Bank's guidelines, an aspect that is less emphasized in the empirical literature. This focus on local regulatory adherence highlights the importance of context-specific research in understanding risk management practices.

The regression analysis of the determinants of Return on Assets (ROA) indicates that while some variables significantly impact ROA, others do not show strong statistical significance. Specifically, the Cost-Income Ratio (CIR) do not exhibit significant effects on ROA, with p-values of 0.106. The unstandardized coefficient for CIR is -0.017, suggesting a negative relationship, but its lack of statistical significance means

this result cannot be reliably generalized. These insignificant results suggest that factor such as CIR might not directly influence ROA in a meaningful way within this dataset. This insignificance could be due to various reasons such as sample size limitations, multicollinearity, or the presence of other more influential variables that were not included in the model. Therefore, it highlights the need for further investigation and possibly more refined models to better understand the dynamics affecting ROA in Nepalese commercial banks.

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

The thesis provides the background of the study, emphasizing the significance of risk management in banking. The study's primary objective is to examine the current position of operational risk management in Nepalese commercial banks, assess the relationship between operational risk management and financial performance, and analyze the impact of operational risk management on the financial performance of these banks. The chapter sets the stage for the research by outlining the problem statement, the significance of effective risk management for maintaining stability and growth, and the specific focus on operational risks in the lending process, aiming to contribute valuable insights into the management practices and regulatory compliance of Nepalese commercial banks. First chapter outlines the role of the Nepal Rastra Bank (NRB) in establishing risk management guidelines and frameworks such as the Capital Adequacy Framework and Risk Management Guidelines. The chapter discusses the complexity of operational risks in banking, including human errors, system failures, and external events, and their impact on the financial stability of banks. The problem statement focuses on the evolving landscape of banking operations and the need for robust risk management to prevent operational mishaps and enhance corporate performance. The objectives of the study are to examine the current position of operational risk management, assess its relationship with financial performance, and analyze its impact on the financial performance of Nepalese commercial banks.

The literature review chapter explores various theories and empirical studies related to operational risk management. It discusses systems theory, agency theory, and human reliability theory as foundational frameworks guiding operational risk management. The empirical review highlights studies on the impact of risk management on bank performance in different countries, including Ghana, Nigeria, and Kenya. It identifies a gap in the literature concerning the specific context of Nepalese banks and the need for in-depth analysis of credit risk management indicators, loan loss provisions, and

non-performing loans. This chapter sets the stage for the empirical analysis by establishing the theoretical and empirical foundations of the study.

A descriptive and causal comparative research design is employed to analyze the risk management and financial performance of three selected Nepalese commercial banks: Nepal Investment Mega Bank Limited, Kumari Bank Limited, and NMB Bank Limited. The study uses secondary data from annual reports and financial statistics covering the period from 2013/14 to 2022/23.

The analysis reveals that effective operational risk management and strong capital adequacy significantly influence the financial performance of these banks. Specifically, higher capital adequacy ratios positively affect ROA, while increased non-performing loans and higher cost to income ratios are associated with reduced profitability. The study also finds a weak negative correlation between loan ratios and ROA, suggesting that higher loan volumes may slightly decrease asset returns due to increased risk. Additionally, the findings underscore the dynamic nature of liquidity management and operational efficiency, highlighting the variability in these metrics across the banks studied. Overall, the results emphasize the importance of robust risk management practices and adherence to regulatory guidelines in enhancing the financial stability and performance of Nepalese commercial banks.

5.2 Conclusion

The thesis concludes that effective risk management is pivotal to the financial performance and stability of Nepalese commercial banks. Through a detailed analysis of operational risk management, capital adequacy, and other financial metrics, it is evident that banks with robust risk management frameworks tend to perform better financially. Specifically, the study highlights the significant positive impact of strong capital adequacy ratios on return on assets (ROA), underscoring the importance of maintaining sufficient capital buffers to absorb potential losses and support sustainable growth. This finding aligns with global banking standards and emphasizes the critical role of regulatory compliance in enhancing bank stability.

Operational risk management emerges as a key determinant of financial performance, with the thesis revealing that higher levels of operational efficiency and lower cost to income ratios contribute to better financial outcomes. Effective management of

operational risks, such as human errors, system failures, and fraud, is crucial for maintaining profitability and ensuring smooth bank operations. The analysis indicates that banks that prioritize operational risk management are better equipped to handle disruptions and sustain their financial performance over time.

Furthermore, the study identifies specific areas where Nepalese banks can improve their risk management practices. The correlation between higher non-performing loans (NPL) and reduced profitability highlights the need for stringent credit risk management and effective loan monitoring systems. The slight negative impact of higher loan ratios on ROA suggests that banks should balance their loan portfolios to manage risk effectively. Additionally, the variability in liquidity ratios across banks indicates the need for dynamic and proactive liquidity management strategies to ensure adequate funding and operational resilience.

The thesis underscores the importance of a comprehensive and integrated approach to risk management in the banking sector. By adhering to regulatory guidelines and continuously enhancing their risk management frameworks, Nepalese commercial banks can improve their financial performance and contribute to the broader stability of the financial system. The study's findings offer valuable insights for bank management, policymakers, and regulators, providing a foundation for future research and policy development aimed at strengthening the banking sector in Nepal.

5.3 Implications

Banks should prioritize the development and implementation of comprehensive risk management frameworks that address the specific operational risks identified in this study. By focusing on improving capital adequacy, operational efficiency, and credit risk management, banks can enhance their financial performance and resilience against potential disruptions. Adopting a proactive approach to risk management, including regular stress testing and scenario analysis, can help banks prepare for and mitigate the impact of adverse events.

Similarly, further research should explore the context-specific aspects of risk management practices within different regions of Nepal. By comparing urban and rural banks or examining variations between banks of different sizes and ownership structures, researchers can uncover more nuanced insights into how these factors

influence risk management effectiveness. Such studies can help identify unique challenges and opportunities faced by different types of banks, thereby contributing to more tailored and effective risk management frameworks.

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Abstract Operational risk management is essential for maintaining the financial stability and performance of commercial banks, particularly in Nepal, where the banking sector faces complex operational challenges. The Basel II Accord underscores the significance of managing operational risks, defined as losses due to inadequate or failed internal processes, people, and systems, or from external events. This study focuses on the commercial banks of Nepal, aiming to understand the current state of operational risk management and its impact on financial performance, especially in a competitive and regulatory environment. The study examines three commercial banks in Nepal—Nepal Investment Mega Bank Limited, Kumari Bank Limited, and NMB Bank Limited—over a ten-year period from 2013/14 to 2022/23. Employing a descriptive and causal comparative research design, the analysis utilizes secondary data from annual reports and financial statements, supplemented by NRB's banking and financial statistics. The methodology includes descriptive statistics to summarize data, correlation analysis to explore relationships between variables, and regression analysis to determine the impact of operational risk management on financial performance indicators such as Return on Assets (ROA) and Return on Equity (ROE). Findings reveal a significant