CREDIT RISK MANAGEMENT AND PERFORMANCE OF COMMERCIAL BANKS

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

By

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C**ertification of Authorship**

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “CREDIT RISK MANAGEMENT AND PERFORMANCE OF 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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Pratiksha Magar

December, 2024

REPORT OF RESEARCH COMMITTEE

Ms. Pratiksha Magar has defended the research proposal entitled **"CREDIT RISK MANAGEMENT AND PERFORMANCE OF 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 Rabindra Bhattarai and submit the dissertation for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled **"CREDIT RISK MANAGEMENT AND PERFORMANCE OF COMMERCIAL BANKS"** presented by Pratiksha Magar 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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ABBREVIATIONS

A.M. - Arithmetic Mean

BFIs - Banks and Financial Institutions

CAR - Capital Adequacy Ratio

CDR - Credit-to-Deposit Ratio

CV - Coefficient of Variation

EBL - Everest Bank Limited

F/Y - Fiscal Year

HBL - Himalayan Bank Limited

IRS - Interest Spread Rate

LLP - Loan Loss Provision

MQR - Management Quality Ratio

NABIL - Nabil Bank Limited

NEPSE - Nepal Stock Exchange

NPL - Non-Performing Loan

NRB - Nepal Rastra Bank

NSBL - Nepal SBI Bank Limited

ROA - Return on Assets

ROE - Return on Equity

SBL - Sanima Bank Limited

SD - Standard Deviation

ABSTRACT

Credit risk management plays a crucial role in ensuring the profitability and stability of commercial banks by mitigating potential financial losses arising from defaults and poor credit practices. This study focuses on examining the relationship between credit risk management practices and the profitability of Nepalese commercial banks. Specifically, it explores the impact of non-performing loan ratios (NPL), credit-to-deposit ratios (CDR), interest spread rates (IRS), and credit risk indicators on key profitability measures such as Return on Assets (ROA) and Return on Equity (ROE).

A descriptive and causal-comparative research design was adopted for this study, utilizing secondary data sourced from the annual reports of the selected banks over a ten-year period. Statistical tools such as regression analysis, standard deviation, coefficient of variation, and comparative ratio analysis were employed to analyze the data and evaluate the relationships between credit risk management indicators and profitability measures.

The findings reveal that effective credit risk management significantly enhances profitability, as evidenced by the lower NPL ratios and higher ROA and ROE of banks like NSBL. Conversely, banks with higher NPL ratios, such as HBL during specific periods, faced reduced profitability due to increased provisioning requirements and reduced income from interest-earning assets. Balanced CDRs and favorable interest spread rates were also found to positively influence profitability. The study concludes that sound credit risk management practices are pivotal for sustaining profitability and stability in the Nepalese banking sector, offering valuable insights for managers, policymakers, and future researchers.

Keywords: Credit Risk Management, Interest, Profitability, Commercial Banks

CHAPTER I
INTRODUCTION

1.1 Background of the study

Credit is a fundamental financial concept that enables individuals, businesses, and governments to access funds or resources now in exchange for the promise of future repayment. This deferred payment system is pivotal for economic activities, allowing for investments, consumption, and growth. Credit can take various forms, including personal loans, mortgages, credit cards, corporate bonds, and government debt. The terms and conditions of credit, such as interest rates, repayment schedules, and collateral requirements, vary based on the borrower's creditworthiness and the lender's risk appetite. By facilitating the flow of money and resources, credit plays a critical role in driving economic development and financial stability.

Credit risk, also known as default risk, is the potential for a borrower to fail to meet their financial obligations as agreed, resulting in a loss for the lender. This risk is an inherent part of lending and investing, affecting banks, financial institutions, and investors. The assessment of credit risk involves evaluating the borrower's ability to repay the loan, which includes analyzing their financial health, income stability, credit history, and external economic factors. High credit risk can lead to increased costs for the borrower, such as higher interest rates or the requirement for additional collateral. For lenders, effectively managing credit risk is essential to maintain profitability and protect against significant financial losses.

Credit risk management is a comprehensive process employed by financial institutions to mitigate the potential losses arising from credit risk. This process involves identifying, assessing, monitoring, and controlling credit exposures. Key strategies include credit analysis, credit scoring models, loan diversification, collateral requirements, and setting credit limits. Additionally, banks implement robust risk management frameworks and policies, conduct regular stress testing, and adhere to regulatory guidelines to enhance their credit risk management practices. By balancing risk and reward, effective credit risk management ensures the stability and profitability of financial institutions, safeguarding their solvency and reputation.

The performance of commercial banks is heavily influenced by their ability to manage credit risk effectively. Efficient credit risk management leads to reduced loan defaults and non-performing assets, which directly contribute to the financial health and profitability of banks. Banks with strong credit risk management frameworks are better equipped to withstand economic fluctuations and maintain consistent earnings. They also benefit from lower capital charges and enhanced regulatory compliance. Conversely, inadequate credit risk management can result in significant financial distress, eroding capital reserves, damaging the bank's reputation, and potentially leading to insolvency. Therefore, commercial banks prioritize the development and implementation of advanced credit risk management practices to ensure sustainable growth and resilience in an increasingly complex financial environment.

In Nepal, the management of credit risk is particularly crucial due to the country's unique economic and regulatory landscape. The Nepalese economy relies heavily on remittances, which contribute significantly to household incomes and national GDP. Additionally, the agricultural sector plays a vital role, yet it is subject to volatility due to factors like weather conditions and market prices. The financial sector in Nepal is characterized by a large number of banks and financial institutions, which operate under the supervision of the Nepal Rastra Bank (NRB), the central bank. The NRB has implemented various regulatory measures to strengthen the banking sector's resilience, such as capital adequacy requirements, loan classification norms, and provisioning standards.

Effective credit risk management in Nepal involves addressing challenges such as limited financial literacy, high informality in business operations, and regional disparities in economic development. Banks must employ rigorous credit assessment processes, leverage technology for better risk monitoring, and foster a culture of prudent lending. By doing so, they can support sustainable economic growth, enhance financial inclusion, and contribute to the overall stability of the Nepalese financial system. As Nepal continues to develop, the importance of sound credit risk management practices will only grow, ensuring that the banking sector remains robust and capable of supporting the country's long-term economic aspirations.

1.2 Problem Statement

Commercial banks collect deposits from different individuals and invest them in part as loan and advance to the borrowers. Major problem of the banking sector in Nepal is the Credit Risk. Poor lending practices, which are indicated by poor financial analysis of borrowers, inadequate or substandard collateral and improper portfolio analysis, poor tracking of credit and intention of borrowers to default have resulted in the high amount of Non-Performing Loan of major banking sector in Nepal (Lamichhane, 2022). The current credit risk management practices are insufficient to meet Nepal's current financial and economic difficulties. For the bank and other stakeholders, this has turned into a stressful scenario (Pradhan & Shah, 2019). The inadequacy of existing credit risk management procedures exacerbates the situation, making it difficult for banks and other stakeholders to effectively address the financial and economic challenges in the country. This has resulted in a stressful situation for banks and financial institutions. To tackle this issue, the regulatory body responsible for overseeing banks and financial institutions in Nepal, the Nepal Rastra Bank, has directed the implementation of credit loss provision measures. These measures aim to control and mitigate the impact of credit risk by requiring banks to set aside provisions for potential loan losses. Addressing credit risk is crucial for the stability and sustainability of the banking sector in Nepal. Improved credit risk management practices and the implementation of regulatory guidelines are essential to ensure that banks can operate efficiently and effectively, protect depositor funds, and support economic growth through responsible lending practices.

Therefore, the purpose of this study is to look into how credit risk indicators affect a bank's profitability in Nepal. The following issues are specifically addressed in the study.

i. What is the position of credit risk management indicators of selected Nepalese Commercial banks?
ii. How credit risk management indicators affect the profitability of commercial banks in Nepal?
iii. What is the impact of Non-performing loan ratio, credit to deposit ratio, interest spread rate and credit risk on Return on Assets and Return on Equity?

1.3 Objectives of the Study

The main and general objective of this study is to assess the impact of credit risk management on the profitability of Nepalese Commercial banks. The study was conducted to accomplish the following specific objectives.

i. To examine the different credit risk indicators of selected Nepalese Commercial banks.
ii. To evaluate the relationship of credit risk management on the profitability of selected commercial banks of Nepal.
iii. To assess the impact of Non-performing loan ratio, credit to deposit ratio, interest spread rate and credit risk on Return on Assets and Return on Equity.

1.4 Rationale of the Study

This study's primary goal is to evaluate how credit risk affects Nepalese commercial banks' profitability. The functional link between the many explanatory variables pertaining to the effect of credit risk on profitability in the Nepali context would be better understood thanks to this study. The study will help address the issues raised, which will be helpful in developing lending rules and practices for Nepalese businesses.

This study will shed light on the profitability and credit risk management procedures used by Nepalese commercial banks. Policymakers, scholars, organisational stakeholders, financial institutions, and regulatory agencies will all find it to be a useful source of information. By looking at these connections, the study seeks to find practical methods and approaches that help improve these institutions' profitability and financial stability.

First and foremost, this study will assist commercial banks in reevaluating their approaches to managing credit risk. Second, it will let the Nepal Rastra Bank (NRB) assess how much policy actions impact banks' choices about credit risk management. Thirdly, by giving scholars empirical data and analysis on this important subject, it will assist them in meeting their academic obligations.

Furthermore, since it will offer a thorough grasp of the state of Nepalese commercial banks, this study will be significant to all stakeholders, including clients, staff members, rivals, shareholders, society, the government, and regulatory agencies. The study will assist stakeholders in making well-informed decisions and support the general growth and

stability of Nepal's financial sector by emphasising the existing status of credit risk management and profitability.

1.5 Limitations of the study

The research is limited to analyzing the possible ways for the successful accomplishment and Time concern is the main limitation that may hinder this report. However, this research is conducted in an academic purpose so it may not be dependable for practice. Some of the limitations of the study are as follow:

- The sample size of Nepalese commercial banks included in the study may be insufficient to represent the entire population, potentially compromising the generalizability of the results.
- The study's findings could be impacted by incomplete or unreliable data on credit risk management and profitability of Nepalese commercial banks, potentially affecting the accuracy and validity of the results.
- The assessment of credit risk management practices may vary among researchers, introducing subjectivity that could undermine the consistency and reliability of the results.

CHAPTER II

REVIEW OF LITERATURE

This chapter provides conceptual framework of the study and deals with review of empirical studies associated with Credit Risk management and its impact on profitability of commercial banks, with a specific focus on the Nepalese context. The review encompasses theoretical frameworks, empirical studies, and research conducted in related areas.

2.1 Theoretical Review

The Credit Risk Theory

Credit risk is the possibility of losing money as a result of a counterparty's declining creditworthiness in a financial transaction (Liu, Mirzaei, & Vandoros, 2014). Default risks, or the possibility that a counterparty won't carry out their end of the bargain, are the root cause of credit risk. The lender bears the majority of the risk, which includes lost principal and interest. A disruption loss can be either total or partial and can occur for a variety of reasons, such as when a bank becomes insolvent and is unable to reimburse a depositor. The fundamental theory of credit risk, known as the default model or theory of default, was first presented by Robert Merton in 1974. To create a framework for assessing a company's credit risk, Robert defined the company's stock as a call option on its assets. The structural approach and the intensity-based approach, sometimes referred to as the reduced form approach, are the two primary techniques for modelling credit risk. Clifford V. Rossi developed three crucial methods for calculating credit risk by utilising the Merton model. These include the management of credit portfolios, the idea of credit spreads, and the distribution of losses produced via Monte Carlo simulation. The lender may run a credit check on the potential borrower, demand that the borrower obtain the necessary insurance, like mortgage insurance, or look for third-party security or guarantees in order to lower the lender's risk. Generally speaking, the larger the risk, the higher the interest rate that borrowers will be required to pay (Owojori, Akintoye, & Adidu, 2011).

The Anticipated Income Theory

H.V. Prochnow used the US commercial banks' practice to develop the Anticipated Income Theory in 1944. This idea states that the bank should plan the term-loan's (loan that lasts one to five years) liquidation based on the borrower's expected income, regardless of the type and character of the borrower's business. The ability of the bank to issue loan advances based on the borrower's expected short- and long-term income is the main focus of this theory. The bank tries to link its medium- and long-term loans to the expected income of the borrower. As a result, a bank loan is paid back in installments from the borrower's future income rather than all at once when the loan matures. When predicted incomes are consistent and can be anticipated when they become due, the bank extends additional loans. Because bank management may plan its credit based on predicted income, this will help the bank manage its credit risk more effectively. Another common name for it is the "cash flow approach" to lending. Because it meets the three main goals of profitability, safety, and liquidity, this theory outperforms both the shiftability theory and the commercial loan theory. When interpreted correctly, this hypothesis was only rivalled by the commercial loan theory. Although it concentrated on the kinds of loans that banks should make, its conclusion differed significantly from that of proponents of the commercial lending theory (Alhatti, 2015).

Risk-Reward Trade-off

A key idea in finance is the risk-reward trade-off theory, which asserts a direct correlation between an investment's possible return and its degree of risk. According to this hypothesis, investors must be prepared to take on greater amounts of risk in order to generate larger profits. On the other hand, less risky investments usually yield smaller returns. This trade-off, which involves weighing the possibility of losses against the desire of profits, is crucial when making financial decisions.

The risk-reward trade-off hypothesis is especially pertinent to credit risk management. Credit risk is the chance that a borrower won't fulfil their loan commitments, which would cost the lender money. In order to make up for the higher likelihood of default, higher-risk borrowers—such as those with poorer credit scores or erratic income sources—may offer higher interest rates or returns. The goal of these increased returns is to balance off any possible losses brought on by defaults.

The difficulty faced by credit risk managers is striking a balance between the necessity to control and minimize possible losses and the desire for larger rewards. This entails a thorough evaluation of the risk variables connected to various loan products as well as the creditworthiness of borrowers. Managers need to assess if the higher interest rates that high-risk borrowers provide sufficiently offset the higher chance of default. Sophisticated risk modelling and analysis are frequently used in this assessment to forecast the possible results of lending decisions.

A deliberate approach to credit risk management is necessary to achieve the best possible balance between risk and reward. Diversification is a crucial tactic used by lenders to lessen the impact of any one default by distributing their risk over a large portfolio of loans. Banks can lower overall risk while retaining the greater rewards linked to some high-risk loans by diversifying their loan portfolios. This strategy makes sure that any possible losses are offset by the profits from other loans and helps to stabilize the performance of the portfolio.

The application of risk-based pricing is another crucial element. Risk-based pricing modifies loan terms and interest rates according to each borrower's evaluated risk level. Low-risk borrowers are given better terms, whereas high-risk borrowers are paid higher interest rates to make up for their increased chance of default. By matching the cost of borrowing to the risk profile of each loan, this pricing technique makes sure that lenders receive fair compensation for assuming more risk.

Continuous monitoring and strategy modification are also necessary for effective credit risk management in order to react to shifting borrower behaviors and market conditions. To take into account the most recent information and trends, credit risk managers must constantly examine and update their risk assessment models. By taking a flexible approach, lenders can adjust to new possibilities and hazards while gradually balancing risk and reward.

Scenario analysis and stress testing are useful tools in this process. These methods entail modelling different economic scenarios and evaluating how they affect the performance of the loan portfolio. Credit risk managers can find any weaknesses and create backup plans to fix them by running stress tests. This proactive strategy guarantees that the risk-reward balance is maintained and helps protect against unforeseen shocks.

A fundamental component of credit risk management is the risk-reward trade-off theory, which highlights the necessity of striking a balance between managing possible losses and pursuing larger profits. In the context of lending, this entails using risk-based pricing, strategically diversifying loan portfolios, and carefully evaluating the risk profiles of borrowers. Credit risk managers can strike the ideal equilibrium that promotes the institutions' financial stability and profitability by regularly assessing and modifying their tactics.

Financial Intermediation Theory

By serving as middlemen between savers and borrowers, financial institutions—banks in particular—play a crucial role in the economy, according to financial intermediation theory. Banks mobilize savings from people and organizations who have extra money and distribute these resources to people and businesses that want financing. Because it promotes investment, consumption, and general economic activity, this intermediary role is crucial for economic growth and stability.

In their capacity as financial intermediaries, banks carry out a number of crucial tasks. Allocating resources is one of the main tasks. Savings deposits are gathered by banks, who then distribute the money to borrowers in need of funding for a range of objectives, such as infrastructure development, consumer purchases, and corporate expansion. Banks contribute to the economy's optimal use of financial capital by effectively allocating resources.

Risk transformation is another essential role. By combining the resources of numerous depositors and diversifying their loan portfolios, banks change the risk profile of money. Because of this diversification, individual savers are less exposed to overall risk than they would be if they made direct loans to borrowers. By turning short-term deposits into long-term loans, banks also carry out maturity transformation. While borrowers usually want long-term capital, depositors frequently place short-term deposits because they seek liquidity. Banks satisfy both parties' needs by executing maturity transformation, which strikes a balance between funding needs and liquidity preferences.

Banks must successfully manage credit risk if they are to fulfil their intermediary function. Credit risk is the chance that borrowers won't fulfil their loan commitments, which could cost the bank money. Banks use stringent credit evaluation procedures to

determine a potential borrower's creditworthiness in order to control this risk. To make sure that loans are given to borrowers who have a high chance of repaying them, this entails examining financial statements, credit histories, and other pertinent information.

Another key tactic for reducing credit risk is diversifying loan portfolios across industries, geographical areas, and borrower types. Banks can lessen the effect of individual loan defaults on the overall soundness of their portfolio by diversifying. Regulations like the Basel Accords mandate that banks keep enough capital reserves on hand to cover possible losses. Banks with sufficient capitalization are able to endure challenging economic times and carry on with their business without endangering the money of their depositors.

For the banking system to be stable and robust, credit risk management must be done well. Banks can safeguard depositor funds, guarantee that loans are made to creditworthy borrowers, and lower the chance of defaults by controlling credit risk. The public's trust in the banking system is preserved by this safeguard. Additionally, keeping a robust loan portfolio enables banks to provide borrowers with a reliable source of credit, promoting economic activity including consumer spending, job creation, and business expansion, all of which encourage economic growth.

By reducing loan loss provisions and default rates, efficient credit risk management also increases banks' profitability. Profitable banks are in a better position to boost economic growth, provide services, and make technology investments. Maintaining capital adequacy and performing stress tests are two examples of regulatory criteria linked to credit risk management that must be followed in order to guarantee banks' long-term survival and shield the larger financial system from systemic hazards.

According to financial intermediation theory, banks are crucial in helping to close the gap between savers and borrowers. A key component of this intermediary role is efficient credit risk management, which guarantees banks can preserve depositor funds while offering borrowers steady finance. Banks support economic expansion, financial stability, and the general well-being of the financial system by efficiently managing credit risk.

2.2 Empirical Review

This section is further divided into two sections i.e. International Context and National Context.

2.2.1 International Context

Okiru & Miroga (2024) examined how credit risk management affected the financial results of nine Kenyan commercial banks that were listed between 2018 and 2022. The ratio of loans to deposits and the ratio of non-performing loans served as stand-ins for credit risk management, the independent variable. Return on Assets served as a stand-in for the Kenyan listed commercial banks' financial performance. The study made use of the theories of moral hazard, adverse selection, and information asymmetry. This study employed a correlational research design utilising secondary data from the Nairobi Securities Exchange and the annual audited reports of listed commercial banks. The nine Kenyan commercial banks that were specified were the study's target audience. Given that the target population was manageable, the census method was used to collect the data. The results were described and illustrated using both descriptive and inferential statistical techniques (Mean, Standard Deviation, Correlation, Regression, and Analysis of Variances) in the Statistical Package for Social Sciences Version 28. The study's results showed a statistically significant regression effect, and the F-calculated value indicated that the model was significant and that the financial performance of the listed commercial banks had been successfully predicted. An explanation of the loan to deposit ratio.The non-performing loan ratio is -36.5% (r=-.681) of the listed commercial banks' financial performance, while the listed commercial banks' financial performance is 4% (r =.280).

Kinkani et al. (2024) investigated how credit risk management affected the Congo's commercial banks' financial performance. Finding the effects of CAR and NPLR, which were regarded as independent factors, on the performance of commercial banks was one of the particular goals; ROE and ROA were the dependent variables. From 2009 to 2016, we sampled the four biggest commercial banks in the Democratic Republic of the Congo, using these banks as the research population. E Views software was used to perform a panel Estimate Generalised Least Squares regression on the data using a fixed effects model specification. Using a 5% non-directional test of hypothesis, the study found that

the capital adequacy ratio significantly affected the DRC's commercial banks' performance. The study also found that NPLR has a statistically significant impact on commercial banks, which was in line with the second goal, which was to ascertain the relationship between the ratio of non-performing loans and bank performance. We have seen, however, that NPLR and ROE and ROA have a negative relationship, but the car and ROE and ROA have a positive relationship. According to the study's findings, banks with strong capital adequacy ratios are better able to provide more loans and withstand credit losses whenever they occur, particularly for Congolese institutions where repayment uncertainty is high. As a result, these banks report higher profitability.

Temba et al. (2024) examined how Tanzanian commercial banks' financial performance was impacted by the calibre of their credit risk management procedures. The research was conducted using 255 observations from 2003 to 2019 from a balanced panel of fifteen commercial banks. The findings showed that risk supervision and monitoring, the effectiveness of credit processes and controls, the adequacy of the recovery process, and risk assessment and approval all have a favourable impact on banks' performance through their asset quality, capital adequacy, and efficient use of equity, respectively. Furthermore, risk assessment and approval, as well as risk supervision and monitoring, have a detrimental impact on banks' earning capacity and liquidity. Because credit risk management techniques improve financial performance, the study suggests that they should be a key component of bank operations. However, as credit risk assessment and approval as well as credit risk monitoring and supervision have a negative impact on banks' liquidity, care should be made to achieve a balance in the mix and coordination of all variables under study.

Amira et al. (2023) assessed how Kenyan commercial banks' financial performance was impacted by credit risk management. The portfolio theory served as the foundation for the inquiry. The inquiry was philosophically grounded in the positivist paradigm. The study's methodology used both longitudinal and explanatory research designs. The study's target population was Kenya's thirty-two commercial banks. Panel data from 2010 to 2019 that included cross-sectional and time series data were used in the study. The gathered data was analysed using Eviews and displayed in tables and figures using descriptive and inferential statistics. According to the study, credit risk management was negatively correlated with both return on assets (ROA) ($F=118.1208$, $p<0.05$) and return on equity (ROE) ($F=87.02884$, $p<0.05$). According to the study's findings, credit risk management

has a detrimental impact on financial performance metrics like ROA and ROE. As a result, it is advised that commercial banks keep this metric as low as possible to avoid engaging in risky business ventures.

Fadun & Silwimba (2023) analysed panel data from the audited financial reports of five first-tier listed banks spanning fifteen (15) years, from 2005 to 2019. The only banks in use are Deposit Money Banks (DMBs), all of which are listed on the Nigerian Stock Exchange. This study used expected credit loss impairment provisions (ECL) and non-performing loans (NPL) as measures of credit risk management. At the same time, financial success was measured using return on assets (ROA). The study's conclusions show that credit risk management has no beneficial impact on Nigerian commercial banks' financial performance.

Anh (2023) investigated how 27 Vietnamese commercial banks' financial health was affected by credit risk management. The authors suggested several implications for credit risk management and ways to support banks' financial stability based on the study's findings. Secondary data from bank audited financial statements from 2006 to 2020 was used in the study. We employed SEM for analysis because the research model had intermediate variables, and Stata was used to process the data. The findings of the study indicate that loan loss provisions and non-performing loans directly impacted financial stability and profitability. Furthermore, financial stability, profitability, and credit risk management were all indirectly related.

Mahmood et al. (2023) examined how credit risk management affected commercial banks' long-term profitability. Secondary panel data was gathered for this purpose from the 2017–2021 annual financial reports of 27 of the 31 commercial banks that are listed on the Pakistan Stock Exchange (PSX). Multiple regression and descriptive correlation analyses were conducted using the E-views 10 software. Return on equity (ROE), return on assets (ROA), net interest margin (NIM), and credit risk management proxies were included as dependent variables in the current study's model. The market profit opportunity (MPO), bank liquidity (BL), loan and advances (LA), non-performing loans (NPL) ratio, and capital adequacy ratio (CAR) were employed concurrently as independent variables. The study comes to the conclusion that bank performance and bank liquidity are significantly positively correlated. The sustainable performance of commercial banks is similarly harmed by the capital adequacy ratio, non-performing

loans, bank liquidity, market profit potential, and loans and advances. According to the report, in order to handle these problems, stronger laws and tactics—like regulating client loans—must be put into place.

Hossain and Golder (2022) examined, using proxies like the equity multiplier ratio, capital adequacy ratio, non-performing loan ratio, interest coverage ratio, and provision for credit losses to total credit, the effect of credit risk management on the financial performance of listed banks on the Dhaka Stock Exchange between 2011 and 2018. Three viewpoints are used in the study to measure financial performance: market, shareholder value, and bank management. The study found that the interest coverage ratio is the sole element that significantly improves all financial performance metrics; provision for credit losses has no effect. While the capital adequacy ratio increases return on equity and Tobin's Q but has little effect on economic value added, the equity multiplier ratio has a positive influence on return on equity but has no effect on Tobin's Q or economic value added. Return on equity is adversely impacted by the non-performing loan percentage, although Tobin's Q and economic value added are unaffected.

Vsk & Wijesinghe (2021) investigated how Sri Lankan commercial banks' financial performance was affected by credit risk management. Due to the availability of data spanning the six-year period from 2013 to 2018, twenty of the twenty-six commercial banks listed on the Colombo Stock Exchange were chosen as the study's sample. The study's foundation was secondary data, and the data gathered from commercial banks' annual reports was analysed using panel linear regression. The dependent variable, non-performing loans, provision for loan losses, total loans to total assets, and total loans to total deposits were selected as indicators of credit risk, even though return on assets is used to gauge financial success. The findings show that while provision for loan losses, total loans to total assets, and total loans to total deposits have a significant and favourable impact on commercial banks' profitability, non-performing loans have a large and negative impact on banks' financial performance. The findings show that credit risk management has a major overall effect on commercial banks' financial performance.

Noor and Das (2020) used data from ten commercial banks to demonstrate how credit risk management affected the financial performance of Bangladesh's commercial banks over a seventeen-year span (2000–2016). The bank's annual reports provided the secondary data, which was then subjected to multiple regression analysis, correlation analysis, and the t-

test for mean comparison. Return on Assets (ROA) served as the financial performance metric, and the Advance Deposit Ratio, Capital Adequacy Ratio, and Non-Performing Loan (NPL) served as the metrics for credit risk management. The empirical results show that while both NPL and ADR have a negative and fairly substantial impact on ROA, NPL has a more significant effect than ADR. Although it is not statistically significant, the study also discovered that the Capital Adequacy Ratio positively affects ROA. According to the study's T-test, private commercial banks' return on assets, advance-deposit ratio, and capital adequacy ratio were all noticeably greater than those of state-owned commercial banks. On the other hand, it was demonstrated that the ratio of non-performing loans at state-owned commercial banks is significantly higher than that of private commercial banks. Given that credit risk is a key predictor of bank financial performance, the study came to the conclusion that credit risk stagnation continues to be a significant problem for Bangladesh's commercial banks. To improve long-term profitability and bank growth, the researcher recommends that all banks implement credit risk management policies and comply with them.

Oduro, Asiedu and Gadzo (2019) have identified the factors that determine the level of bank credit risk and further estimates the effects of bank credit risk on corporate financial performance using financial data from banks on the Ghana Stock Exchange over a 15-year period from 2003 to 2017. Variables like capital adequacy, operating efficiency, profitability, and net interest margin were found to be inversely correlated with credit risk using the 2SLS technique. On the other hand, credit risk tends to be positively correlated with bank size and funding gap. Additionally, credit risk is typically positively impacted by annualised fluctuations in inflation. Once more, it was noted that rising bank credit risk has a detrimental impact on business financial performance, which is in line with the Basel Accord. Therefore, banks must pay close attention to managing their exposure to credit risk if they are to thrive in their business.

Gadzo, Kportogbi, and Gatsi (2019) have assessed the effect of credit and operational risk on the financial performance of universal banks in the context of the structural equation model (SEM). Using the PLSSEM, data from all 24 universal banks in Ghana were gathered without any missing variables. The findings indicated that credit risk has a negative impact on financial performance, which is in contrast to the empirical study but consistent with the lemon theory's information asymmetry premise. Additionally, it was

discovered that operational risk had a detrimental impact on Ghana's universal banks' financial performance. Additionally, the study found that bank-specific factors such as asset quality, bank leverage, cost to income ratio, and liquidity have a beneficial impact on credit risk, operational risk, and the universal banks' financial performance. We suggest that in order to reduce credit risk and ultimately increase profitability, banks should be incentivized to lower their lending rates. In order to increase profitability, banks should lower their debt and focus more of their portfolio on liquid investment income when it comes to operational risk.

Parab and Pati (2018) analyzed the gross Non-Performing Asset Ratio, Loan Loss Allowance to Total Advances, Capital Adequacy Ratio, Credit Deposit Ratio, Loan Loss Allowance to Non-Performing Assets, Loan Loss Allowance to Assets, and Advances to Assets were among the panel data of 40 banks that have been listed on the Bombay Stock Exchange for 16 years. Performance was measured using ROE, ROA, and NIM as stand-ins. CDR has a favorable and significant link with all performance metrics, according to the research, which employed Random Effect Panel GLS. Using the Panel Approach, the study evaluates the credit risk and performance of Indian public and private banks.

Akter and Roy (2017) analyzed the impact of NPLs on profitability, specifically the net interest margin (NIM). The study looks at the time series scenario of non-performing loans (NPLs), their growth, provisions, and their connection to banks' profitability using ratios and a linear regression model. According to the findings, non-performing loans (NPLs) represent a disproportionately high percentage of total loans for banks listed on the Dhaka Stock Exchange, accounting for almost 50% of all listed banks' NPLs between 2008 and 2013. The analysis also reveals that during the study period, NPLs had a statistically significant detrimental effect on listed banks' net profit margins. In order to lessen the impact of non-performing loans (NPLs) on the banking sector, the article emphasizes the necessity of efficient credit risk management.

Kodithuwakku (2015) focused about the impact of credit risk management on the performance of commercial banks. From 2009 to 2013, panel data from primary and secondary sources of chosen banks based on data availability and superior performance were gathered for the study. The dependent variable (performance indicator) in the study was ROA (Return on Assets); the independent variables (credit risk indicators) were Loan Provision to Total (LP/TL), Loan Provision to Nonperforming Loans (LP/NPL), Loan

Provision to Total Assets (LP/TA), and Non-Performing Loans/Total Loans (NPL/TL). According to the empirical findings, non-performing loans and provisions have a substantial negative influence on profitability. As a result, the study suggested that banks use efficient instruments and methods to lower credit risk management.

Kippingtich and Muturi (2015) focused the effect of credit risk management on the financial performance of savings and credit cooperative society. They employed one dependent variable, financial performance, and two independent variables, capital adequacy and management effectiveness. Data were gathered from secondary sources and the impacts were evaluated using a cross-sectional descriptive research approach. To analyses the gathered data and create a regression model, they used the SPSS software. According to the research findings, financial performance was positively and statistically significantly correlated with both capital adequacy and management effectiveness. This demonstrated that improved managerial effectiveness and capital adequacy result in improved financial performance.

Veizi (2015) depicted that Banks as financial intermediation institutions are defined as businesses that receive and manage various risks. The majority of researchers believe that, out of all the banking hazards, credit risk has the biggest impact on the bank's performance. However, the profitability of the banking industry has drawn a lot of attention lately. This paper's goal is to familiarize us with the theoretical and empirical literature about the connection between banking profitability indicators and credit management risk. The majority of research in this area has found that the main factor influencing commercial banks' profitability is credit risk management. However, other researches have demonstrated that credit risk management has no effect on banks profitability.

Siekelova, Boris, and Ivana (2015) explained the Credit risk management was not so necessary, while sales of deferred payment have begun to dominate the prompt payment. Receivables have evolved into a necessary component of a healthy and successful market economy. The majority of the company's receivables are in the form of trade credit. As a result, trade credit management, or credit management, has gained significant importance. In the Slovak Republic, four out of ten businesses go bankrupt because their receivables are not paid on time or at all. Credit managers deal with crucial issues in their day-to-day work, such as the amount of debt owed by businesses as a result of invoice sales, whether

or not to support or prevent debt growth, whether or not customers are able and willing to fulfil their obligations on time, whether to set appropriate criteria for specific customer credit segments, or whether or not to select an efficient debt recovery tool. The article highlights the importance of credit management, outlines its main responsibilities, and demonstrates the connection between a company's solvency and the amount of receivables it possesses. We'll use formal logic methods like as analysis, synthesis, and interpretation. The goal is to develop fundamental theoretical guidelines for figuring out each customer's credit limit within the business.

Alhatti (2015) explained the effect of credit risk management on financial performance of the Jordanian commercial banks during the period (2005-2013), thirteen commercial banks have been chosen to express on the whole Jordanian commercial banks. The study found that credit risk management has an impact on the financial performance of Jordanian commercial banks as indicated by ROA and ROE. This link has been quantified using two mathematical models. The study also concludes that the credit risk management indicators taken into account have a substantial impact on the financial performance of Jordanian commercial banks. Based on the results, the researcher suggests that banks enhance their credit risk management in order to increase profits. Specifically, banks should consider the leverage ratio, provision for facility loss/net facilities, and non-performing loan/gross loan indicators, all of which were found to be significant in determining credit risk management. In order to create an effective credit risk management system, banks must also create a suitable credit risk environment, operate under a sound credit granting process, maintain an appropriate credit administration that includes monitoring, processing, and sufficient controls over credit risk, and implement and develop strategies that will not only limit the banks' exposure to credit risk but also improve their performance and competitiveness. Additionally, banks should establish adequate credit risk management policies by imposing strict credit estimation before granting loans to customers.

Abiola (2014) stated that credit risk management in banks has become more important not only because of the financial crisis that the industry is experiencing currently, but also a crucial concept which determine banks’ survival, growth, and profitability. Investigating how credit risk management affects Nigerian commercial banks' performance is the goal of this study. For seven years (2005–2011), the financial records

of seven commercial banking companies were examined. To estimate the model, the panel regression model was used. The model used the Capital Adequacy Ratio (CAR) and Nonperforming Loans (NPL) as credit risk management indicators, and Return on Equity (ROE) and Return on Asset (ROA) as performance indicators. The results showed that Nigerian commercial banks' profitability is significantly impacted by credit risk management.

Table 1

International Context Empirical Review

Author (Date)	Objective	Topic	Method	Findings
Okiru & Miroga (2024)	Explore the effect of credit risk management on financial performance of nine listed banks in Kenya	Credit risk management and financial performance	Correlational research design using secondary data from banks' annual reports, analyzed with SPSS	Loan to deposit ratio explained 0.4% and Non-performing Loans (NPL) ratio explained -36.5% of financial performance. Both variables were significant, with NPL ratio negatively affecting financial performance.
Kinkani et al. (2024)	Examine the impact of credit risk management on the financial profitability of Congo's banks	Impact of credit risk management on profitability	Fixed effects model, panel regression using secondary data of four largest banks from 2009 to 2016	Capital Adequacy Ratio (CAR) significantly positively affects ROE and ROA. NPLR has a negative effect on both ROE and

				ROA.
Temba et al. (2024)	Investigate the influence of credit risk management practices on bank performance in Tanzania	Credit risk management and financial performance	Panel data analysis from 15 banks with 255 observations (2003-2019) using descriptive and inferential statistics	Risk assessment and controls positively affect capital adequacy, equity use, and asset quality. However, risk assessment negatively impacts banks' liquidity and earning ability.
Amira et al. (2023)	Determine the effect of credit risk management on financial performance of Kenyan banks	Effect of credit risk management on financial performance	Explanatory and longitudinal research design, panel data from 32 banks (2010-2019) analyzed using Eviews	Credit risk management had an insignificant negative effect on ROE and ROA, recommending minimizing credit risk management parameters to avoid losses.
Fadun & Silwimba (2023)	Examine the impact of credit risk management on financial performance of Nigerian banks	Credit risk management and financial performance	Panel data analysis of 5 first-tier listed Nigerian banks (2005-2019), using ROA as financial performance indicator	Credit risk management did not positively affect financial performance in Nigerian banks.

Anh (2023)	Examine the impact of credit risk management on financial stability of Vietnamese banks	Credit risk management and financial stability	Secondary data from 27 Vietnamese commercial banks (2006-2020), analyzed using SEM and Stata	NPLs and loan loss provisions directly affect profitability and financial stability. Indirect relationships were found between credit risk management, profitability, and stability.
Mahmood et al. (2023)	Analyze the impact of credit risk management on the sustainable performance of commercial banks	Impact of credit risk management on sustainable performance	Secondary panel data from 27 banks listed on the Pakistan Stock Exchange (2017-2021) analyzed with E-views	Bank liquidity positively impacts performance. NPLs, CAR, and loan advances negatively affect performance, suggesting stricter policies and strategies for better sustainability.
Hossain & Golder (2022)	Examine the impact of credit risk management on financial performance of listed banks in Bangladesh	Credit risk management and financial performance	Regression analysis using proxies like equity multiplier ratio, NPLR, and interest coverage ratio	Only the interest coverage ratio had a significant positive impact on financial performance, while NPLR negatively affected ROE.
Vsk & Wijesinghe (2021)	Examine the impact of credit risk	Credit risk management and financial	Panel regression on 20 Sri Lankan	NPLs negatively affect profitability, while provisions for

	management on financial performance of Sri Lankan banks	performance	commercial banks (2013-2018), using ROA as financial performance indicator	loan losses, loan to total assets, and loan to deposit ratios positively impact profitability.
Noor & Das (2020)	Analyze the impact of credit risk management on financial performance of Bangladeshi banks	Credit risk management and financial performance	Regression analysis using data from 10 commercial banks (2000-2016), analyzing NPL, CAR, and ADR as credit risk indicators	NPL and ADR negatively impact ROA, while CAR positively affects ROA but is statistically insignificant.
Oduro et al. (2019)	Identify factors determining bank credit risk and estimate its effects on financial performance	Credit risk and corporate financial performance	2SLS regression analysis of data from Ghana Stock Exchange banks (2003-2017)	Capital adequacy and profitability negatively relate to credit risk. An increase in credit risk negatively affects corporate financial performance.
Gadzo et al. (2019)	Assess the effect of credit and operational risk on financial	Credit and operational risk on financial performance	SEM analysis on data from 24 Ghanaian universal banks	Credit risk negatively impacts financial performance. Bank-specific variables like asset quality,

	performance of universal banks in Ghana			bank leverage, and liquidity positively influence credit risk and financial performance.
Parab & Pati (2018)	Analyze the impact of credit risk management on performance of banks in India	Credit risk management and financial performance	Random effect panel GLS regression on data from 40 Indian banks (2001-2016)	CDR positively and significantly correlates with all performance indicators, showing that a balanced credit to deposit ratio supports bank performance.
Akter & Roy (2017)	Analyze the impact of NPLs on profitability, particularly NIM	Impact of NPL on net interest margin	Linear regression model on NPL growth and profitability for Dhaka Stock Exchange banks (2008-2013)	NPLs have a significant negative impact on the net profit margin of banks, indicating the importance of managing credit risk effectively.
Kodithuwakku (2015)	Examine the effect of credit risk management on the performance of commercial banks	Credit risk management and performance	Panel data analysis from selected banks (2009-2013) using ROA as performance indicator	Non-performing loans and provisions have a significant negative impact on profitability, suggesting the need for effective risk management.

Kippingtich & Muturi (2015)	Focus on the effect of credit risk management on financial performance of savings and credit cooperatives	Credit risk management and financial performance	Cross-sectional descriptive research design using secondary data from cooperatives	Capital adequacy and management efficiency positively impact financial performance, suggesting that better risk management leads to improved profitability.
Veizi (2015)	Examine the relationship between credit risk management and profitability in banks	Credit risk management and profitability	Literature review of theoretical and empirical studies on credit risk and profitability in banks	Most studies show that credit risk management significantly impacts profitability, though some findings suggest negligible effects.
Siekelova et al. (2015)	Examine the importance of credit management in trade credit and insolvency in Slovak enterprises	Trade credit management and insolvency risk	Theoretical analysis of credit risk management practices in enterprises in Slovakia	Credit management plays a critical role in managing trade credit and insolvency risks, highlighting the importance of effective credit risk management in business operations.
Alhatti (2015)	Examine the impact of	Credit risk management	Regression analysis using	Credit risk management

	credit risk management on the financial performance of Jordanian banks	and financial performance	data from 13 Jordanian commercial banks (2005-2013)	significantly affects financial performance, with NPL and provisions playing key roles in determining performance.
Abiola (2014)	Investigate the impact of credit risk management on performance of Nigerian banks	Credit risk management and financial performance	Panel regression analysis of seven Nigerian banks (2005-2011)	Credit risk management has a significant impact on the profitability of Nigerian banks, emphasizing its importance for long-term growth and survival.

2.2.2 National Context

Bagale (2023) examined the impact of credit risk management on profitability of the bank. The mean, standard deviation, correlation, and regression analysis were used to examine data gathered from a sample of 15 commercial banks that were active in the Nepali economy between 2011 and 2020. One important analytical tool is the pooled regression analysis model (OLS) for panel data analysis. The capital adequacy ratio, cash reserve ratio, loan loss provision ratio, non-performing loan ratio, and bank size were utilised as indicators of credit risk management in the model definition, while return on equity (ROE) was used as a measure of bank profitability. The findings indicate that credit risk has a major impact on the profitability of Nepal's commercial banks. According to the study, Nepali commercial banks' return on equity is marginally impacted negatively by the cash reserve ratio, loan loss provision ratio, and non-performing loan ratio. According to the study, return on equity is positively impacted by bank size and liquidity ratio. The study also shows that the liquidity ratio significantly improves the Nepali commercial bank's return on equity. The return on equity is also significantly impacted negatively by the capital adequacy ratio. Therefore, this study comes to the

conclusion that credit risk management is a significant predictor of the bank's profitability.

Kafle (2023) examined the impact of Credit risk management on Profitability of Nepalese commercial banks. This study uses balanced panel data from ten commercial banks from 2011–12 to 2021–2022, using the pooled ordinary least square model. Secondary sources were used to collect the data. The capital adequacy ratio, non-performing loan ratio, loan to deposit ratio, cash reserve ratio, and bank size were utilized as credit indicators in the study, and ROA was employed as a method for measuring profitability. The findings showed that while the non-performing loan ratio has a negative impact on banks' profitability, the capital adequacy ratio, loan to deposit ratio, cash reserve ratio, and bank size have all been proven to have favorable effects. Accordingly, the study comes to the conclusion that credit risk management is a crucial indicator of Nepalese commercial banks' profitability.

Bhatt et al. (2023) examine the determinants of credit risk management and their relationship with the performance of commercial banks in Nepal. It also looks at how credit risk management affects Nepal's commercial banks' performance. The findings show that environmental risk and credit risk management are positively correlated. Additionally, it is discovered that credit risk management is significantly impacted by credit appraisal metrics. The findings show that credit risk management is significantly impacted by market risk analysis. The findings indicate that the relationship between market risk analysis, environmental risk, credit assessment metrics, and commercial bank performance is mediated by credit risk management. In order to lower credit risk and attain strong financial performance, managers should work to implement risk prevention and control measures.

Pandey & Joshi (2023) examined the impact of credit risk management on profitability of Nepalese commercial banks. The study's independent variables are the capital adequacy ratio, cost per loan asset, and default rate. Return on equity (ROE) and return on assets (ROA) are the dependent variables. The Nepal Rastra Bank's oversight report and the yearly reports of a few chosen commercial banks served as secondary sources of information. To determine the importance and impact of credit risk management on Nepalese commercial banks' profitability, regression models are estimated. It has been determined that the cost per asset with profitability (ROA, ROE) and the beta coefficient

of default rate are both negative and statistically significant. The negative sign indicates a statistically significant negative link between the default rate and profitability and the cost per loan asset. Similarly, it is discovered that the capital adequacy ratio's beta coefficient with ROA and ROE is positive and statistically significant. The capital adequacy ratio and profitability have a statistically significant positive association, as indicated by the positive sign of the beta coefficient.

Khanal & Sapkota (2023) investigated the effect of credit risk management on financial performance of commercial banks in Nepal. This study uses balanced panel data from ten commercial banks from 2012 to 2021 and utilizes the Pooled Ordinary Least Square estimator. The study employs ROA as a financial performance indicator and CAR, NPLR, CDR, MQR, and BS as credit risk indicators. According to the study, CDR has a negative and negligible impact on ROA, while CAR, NPLR, and BS have a positive and negligible influence. Likewise, MQR has a strong beneficial impact on ROA. The results show that credit risk management significantly affects Nepal's commercial banks' financial performance.

Chhetri (2021) conducted a study is to investigate the effect of credit risk on the financial performance of commercial banks in Nepal. Analysis has been done on the panel data of seventeen commercial banks with 85 observations from 2015 to 2020. Financial performance (ROA) is negatively and statistically significantly impacted by non-performing loans (NPLR), according to the regression model. Financial performance (ROA) is negatively and statistically not significantly impacted by the capital adequacy ratio (CAR) and bank size (BS). The study discovered that while credit to deposit (CDR) has a positive but non-significant link with ROA, the management quality ratio (MQR) has a positive and significant association with the financial performance (ROA) of Nepal's commercial banks. In order to secure as many assets as possible and reduce the high rate of non-performing loans and their detrimental effects on financial performance, the study suggests that Nepalese commercial banks implement scientific credit risk management. They should also increase their effectiveness in credit analysis and loan management.

Risal and Poudel (2020) explained the performance differences between A and B class financial institutions arising from credit risk. All 28 commercial banks and 11 development banks at the national level have provided dynamic panel data from 2008 to

2019 for analysis. Because they have both cross sectional and time dimensions, the Arellano Bond approach has been used to adjust for unobserved heterogeneity and to lessen bias in the parameter estimation process. The data unequivocally show the differences in credit risk status between A class and B class banks, with the exception of Return on Assets (ROA). The standard deviation of ROA (standard deviation of return on equity, or SDROE) shows that A class commercial banks are less vulnerable than B class banks, despite offering a much higher ROE and a comparatively higher NIM. The results show that the BFIs' past performance, regardless of their classes, can reliably predict their future performance because all of the lag variables are important. While commercial banks are encouraged to keep an eye on their loan loss provision to total loans and advances (LLPTLA) for improved performance, development banks are urged to concentrate on maintaining an acceptable credit to deposit ratio (CDR) as it has been effecting the majority of performance indicators. It has been discovered that the control variables have very little impact on banks' performance; nonetheless, even a slight decline in performance is caused by rising inflation. Furthermore, conflicting results about the relationship between performance and real GDP growth necessitate more investigation.

Bhattarai (2019) investigated the effect of credit risk on the financial performance of commercial banks in Nepal. The analysis was conducted using 160 observations from the balance panel data of ten commercial banks from 2001 to 2016. According to the results of the regression, the financial performance (ROA) of Nepal's commercial banks is significantly correlated with the capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and management quality ratio (MQR). Similarly, the financial performance of Nepal's commercial banks is not significantly impacted by the credit to deposit ratio (CDR) or risk sensitivity (RS).

Table 2

National Context Empirical Review

Author (Date)	Objective	Topic	Method	Findings
Bagale (2023)	Examine the impact of credit risk management on profitability of Nepali banks	Impact of credit risk management on profitability of Nepali banks	Pooled regression analysis model (OLS) of panel data	Credit risk significantly impacts profitability. Cash reserve ratio and loan loss provision ratio have negative impact on return on equity.
Kafle (2023)	Examine the impact of credit risk management on profitability of Nepalese commercial banks	Impact of credit risk management on profitability of Nepalese commercial banks	Pooled ordinary least square model using balanced panel data	Capital adequacy ratio, loan to deposit ratio, and cash reserve ratio positively affect profitability. Non-performing loan ratio negatively affects profitability.
Bhatt et al. (2023)	Examine the determinants of credit risk management and their relationship with performance of commercial banks in Nepal	Determinants of credit risk management and their relationship with performance of commercial banks in Nepal	Analysis of credit risk management and its mediating role on performance	Positive relationship between environmental risk and credit risk management. Credit risk management mediates the relationship between environmental risk and performance.
Pandey & Joshi	Examine the impact of credit	Impact of credit risk management	Regression models	Default rate and cost per loan assets

(2023)	risk management on profitability of Nepalese commercial banks	on profitability of Nepalese commercial banks	estimated using secondary data	negatively affect profitability. Capital adequacy ratio positively affects profitability.
Khanal & Sapkota (2023)	Investigate the effect of credit risk management on financial performance of commercial banks in Nepal	Effect of credit risk management on financial performance of commercial banks in Nepal	Pooled Ordinary Least Square estimator on balanced panel data	Capital adequacy ratio and bank size positively affect financial performance. Credit to deposit ratio negatively affects performance.
Chhetri (2021)	Investigate the effect of credit risk on financial performance of commercial banks in Nepal	Effect of credit risk on financial performance of commercial banks in Nepal	Panel data analysis using regression model	Non-performing loan ratio negatively affects financial performance. Management quality ratio positively affects performance.
Risal & Poudel (2020)	Explain performance differences between A and B class financial institutions arising from credit risk	Performance differences between A and B class financial institutions arising from credit risk	Dynamic panel data analysis using Arellano Bond method	A class commercial banks are less vulnerable than B class banks. Development banks should maintain appropriate credit to deposit ratio.
Bhattarai (2019)	Investigate the effect of credit risk on financial performance of commercial	Effect of credit risk on financial performance of commercial banks in Nepal	Regression analysis using balanced panel data	Capital adequacy ratio and non-performing loan ratio have significant

	banks in Nepal	relationship with financial performance.

2.3 Research Gap

Several studies have investigated the relationship between credit risk management and financial performance of banks. Hossain and Golder (2022) examined listed banks on the Dhaka Stock Exchange and found that only the interest coverage ratio positively impacted financial performance, while provision for credit losses had no effect. Noor and Das (2020) analyzed Bangladeshi commercial banks, revealing that non-performing loans and advance-deposit ratio negatively influenced return on assets, while capital adequacy ratio had a positive but statistically insignificant impact. Oduro, Asiedu, and Gadzo (2019) studied Ghanaian banks and found that factors like capital adequacy and profitability inversely related to credit risk, which in turn negatively affected corporate financial performance. Gadzo, Kportogbi, and Gatsi (2019) discovered in Ghana that credit risk and operational risk negatively influenced financial performance. Parab and Pati (2018) focused on Indian banks, noting a positive relationship between credit-deposit ratio and performance. Kodithuwakku (2015) highlighted the negative impact of non-performing loans and provisions on bank profitability. Kippingtich and Muturi (2015) discussed the positive impact of capital adequacy and management efficiency on financial performance. Veizi (2015) explored mixed conclusions regarding the impact of credit risk management on banking profitability. Siekelova, Boris, and Ivana (2015) emphasized the importance of credit management and its activities. Alhatti (2015) noted significant effects of credit risk management indicators on Jordanian banks' financial performance. Abiola (2014) found credit risk management significantly impacted profitability in Nigerian commercial banks.

Several studies have investigated the relationship between credit risk management and financial performance of banks (Hossain and Golder, 2022; Noor and Das, 2020; Oduro et al., 2019; Gadzo et al., 2019; Parab and Pati, 2018; Kodithuwakku, 2015; Kippingtich and Muturi, 2015; Veizi, 2015; Siekelova et al., 2015; Alhatti, 2015; Abiola, 2014). However, a research gap emerges due to the lack of conclusive findings regarding this relationship. Despite the existing literature, there is a mix of results leading to ambiguity

(Veizi, 2015). Moreover, this gap is noticeable in the Nepalese context, with limited research conducted. Nepalese commercial banks face challenges in credit risk management and performance, yet even within this context, specific and accurate results are lacking. Furthermore this research tends to explore the with recent financial data i.e. for the period of 10 years along with the different sample banks from the previous research.

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CHAPTER III
RESEARCH METHODOLOGY

The main objective of this research is to measure the credit risk management of the selected commercial banks. This chapter presents the methodology followed in this study which was divided into different sections. These sections include research design, descriptions of sample, data sources and collection instruments, reliability and validity of the study and finally, analysis plan along with method of analysis including the empirical models.

3.1 Research design

The primary goal of this study is to explore how credit risk management practices influence the profitability of banks in Nepal. Specifically, the research seeks to understand whether effective credit risk management strategies have a positive impact on the financial performance of these banks. By examining various indicators and components of credit risk management, the study aims to provide insights into the existing dynamics between managing credit risks and achieving profitable outcomes in the banking sector.

To achieve this objective, a descriptive and causal-comparative research design has been employed. This design is particularly suitable as it allows for a comprehensive description and analysis of the components of credit risk management and their influence on bank profitability. The descriptive approach is ideal for this study because it does not seek to establish cause-and-effect relationships but rather to examine the nature and extent of the relationships between credit risk management and profitability. It helps identify patterns, trends, and correlations that exist in the data without manipulating any variables.

Similarly, causal-comparative research design is well-suited for studying the influence of credit risk management on bank profitability because it allows for examining cause-and-effect relationships between naturally occurring variables without direct manipulation. By analyzing pre-existing differences in credit risk management practices among banks, this design facilitates a retrospective assessment of how these practices impact financial performance.

3.2 Population and sample size

For the study 20 commercial banks operating in the Nepal are the total population. All 20 commercial banks are listed in NEPSE and regulated by NRB. To fulfill the objectives of the study, among the 20 commercial banks only 5 banks was selected for sample. In selecting samples, convenience sampling method was used for sample banks. Convenience sampling was chosen as the sampling method to facilitate data collection from readily available sources. These banks were selected because they were more accessible in terms of data collection. The sampled banks are

- Himalayan Bank Limited
- Sanima Bank Limited
- Everest Bank Limited
- Nabil Bank Limited
- Nepal SBI Bank Limited

3.3 Nature and sources of data collection

The study is focused on historical analysis, as it aims to examine the relationship between credit risk and profitability in commercial banks, hence secondary data was used, as historical information is readily available through published sources. Secondary data were collected mainly from published sources like annual reports, prospectus, newspaper, journal, Internet and other sources. Secondary data published in the annual reports of concerned organizations was collected through personal visit in respective organization as well as from their web sites and other published and unpublished reports from various sources.

3.4 Data Analysis Tools

The data obtained from the different published and unpublished sources may in raw form. The raw data was processed and converted into required form. For this study, required data was taken from the secondary source, and presented in this study. For presentation, different tables and charts was used.

3.4.1 Statistical Tools

Statistical tools are mathematical formulas, models and techniques that are used in statistical analysis of raw research data. The statistical tools employed in this study try to analyze the financial performance of Nepalese commercial bank using the panel data.

Arithmetical mean (A.M.).

The arithmetical mean, commonly referred to as the mean or average, is the sum of all the values in a data set divided by the number of values. It is a measure of central tendency that gives a single value representing the center point of the data set.

$$\bar{X} = \frac{\sum x}{N}$$

Standard Deviation (S.D).

The standard deviation is a measure of the amount of variation or dispersion in a set of values. It quantifies how much the values in the data set deviate from the mean.

$$\sigma = \sqrt{\frac{\sum(X - \bar{X})^2}{N}}$$

Coefficient of variation (CV)

The coefficient of variation (CV) is a standardized measure of dispersion of a probability distribution or frequency distribution. It is expressed as a percentage and is used to compare the degree of variation from one data series to another, even if the means are drastically different.

$$CV = \frac{\sigma}{\bar{X}} \times 100$$

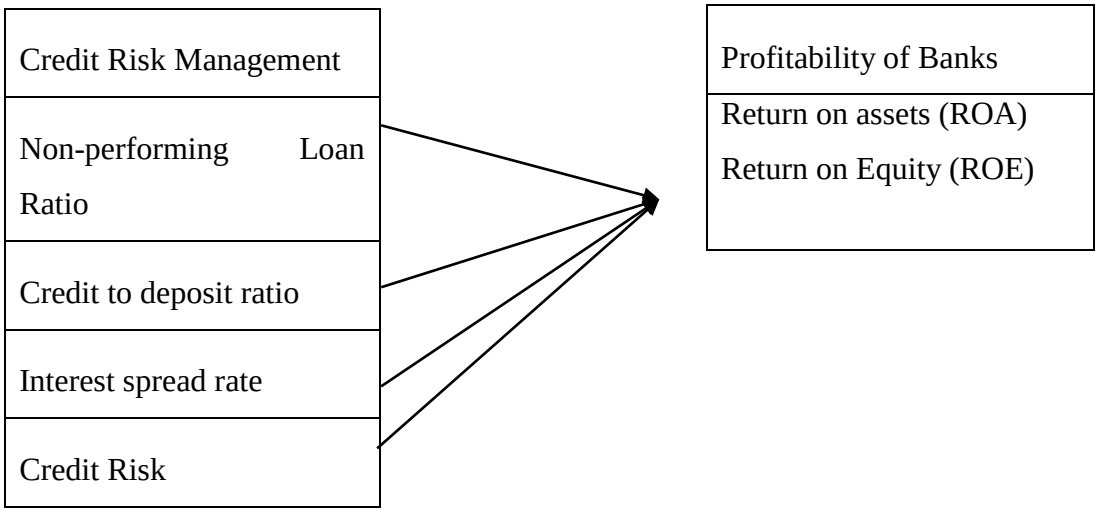
Correlation Analysis

This design will be adopted to identify the direction and magnitude of linear relationship between different pairs of variables. It shows how two variables move together and also shows the degree of association between them. The relationship will be explained by using bi-variant Pearson correlation coefficient.

$$r = \frac{\sum(x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}} \times 100$$

3.5 Research Framework

Independent Variables Dependent Variables



Source: (Bagale, 2023)

Regression analysis is a mathematical measure of the average relationship between two or more variables in term of the original units of the data. Thus, it can be said that regression is the estimation or prediction of one variable's value from the given of other variables value. The regression model used in this study assumes that the relationship between each independent variable NPLR, C/D, IRS, CR and the dependent variable; ROA and ROE. The model used in this study would be stated as;

$ROA = ß_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + ß_4 X_4 + e$ (i)

$ROE = ß_0 + ß_1 X_1 + ß_2 X_2 + ß_3 X_3 + ß_4 X_4 + e$ (ii)

Where,

ROA = Return on assets

ROE= Return on equity

X_1 = Non-performing loan ratio

X_2= Credit to Total Deposit ratio

X_3 = Interest Rate Spread Sheet

X_4= Credit Risk

a = constant term, e= error term,

ß1, ß2, ß3, ß4 = Beta coefficient of variables

3.5.1 Non-performing Loan Ratio (NPL Ratio)

The Non-performing Loan Ratio is the ratio of the amount of non-performing loans (loans in default or close to being in default) to the total amount of loans held by a bank. It is a key indicator of the health of a bank's loan portfolio and its effectiveness in managing credit risk. A high NPL ratio suggests that a significant portion of the bank's loans are not generating income, which can negatively impact profitability and financial stability.

3.5.2 Credit to Deposit Ratio (CDR)

The Credit to Deposit Ratio is a measure of a bank's lending compared to its deposit base. It is calculated by dividing the total amount of loans (credit) given by the bank by the total amount of deposits it has received. This ratio indicates how much of the deposits are being used to extend credit. A higher ratio suggests that a larger portion of deposits is being lent out, which can increase profitability but also elevate risk.

3.5.3 Interest Spread Rate

The Interest Spread Rate is the difference between the interest rate charged on loans and the interest rate paid on deposits. It reflects the bank's profitability from its core business of lending and borrowing. A wider interest spread indicates higher profitability from lending activities, as the bank earns more from loans than it pays on deposits.

3.5.4 Credit Risk

Credit Risk refers to the possibility that a borrower will fail to meet its obligations in accordance with agreed terms. This risk can result in financial loss for the lender. Managing credit risk involves assessing the creditworthiness of borrowers, setting credit limits, and monitoring loans to minimize potential losses from defaults.

3.5.5 Return on Assets (ROA)

Return on Assets is a financial ratio that indicates the profitability of a company relative to its total assets. It is calculated by dividing net income by total assets. ROA measures how efficiently a company is using its assets to generate profits. A higher ROA indicates better performance and efficient use of assets.

3.5.6 Return on Equity (ROE)

Return on Equity is a measure of the profitability of a company relative to shareholders' equity. It is calculated by dividing net income by shareholders' equity. ROE indicates how effectively the company is using the funds invested by its shareholders to generate profits. A higher ROE suggests that the company is generating more profit per unit of equity.

CHAPTER IV

RESULTS AND DISCUSSION

This chapter deals with the presentation, analysis, and interpretation of relevant data of HBL, Sanima Bank Limited, Everest Bank Limited, Nabil Bank Limited and Nepal SBI Bank Limited to fulfill the objectives of this study. To obtain the best result, data have been analyzed according to the research methodology as mentioned in the third chapter. Credit management is one of the most important factors that have been developed to facilitate effective performance of bank management. Credit management is the formal expression of the commercial bank's goals and objectives stated in the financial term for a specific future period. Credit is the basic indicator for determining profit.

The purpose of this chapter is to introduce the mechanism of data analysis and interpretation. With the help of this analysis, efforts have been made to highlight comparative credit management status of selected Commercial banks. For analysis, different types of analytical methods and tools such as financial ratio analysis and statistical tools are used to draw the conclusion of the study. Similarly analyzed results are graphically represented for the visibility and simplicity of conclusion.

4.1 Comparative Analysis

The comparative analysis of the financial performance of five major commercial banks in Nepal—Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), and Nepal SBI Bank Limited (NSBL)—reveals significant variations in key indicators over the examined period. The Non-Performing Loan Ratio (NPLR) fluctuated across banks, with HBL and EBL facing higher ratios at times, indicating credit risk management challenges, while SBL maintained lower NPLR, suggesting stricter controls. Credit to Deposit Ratio (CDR) also showed marked differences, with NSBL consistently having higher ratios, reflecting a more aggressive lending approach. Interest Spread Rate (IRS) exhibited substantial variability, with NSBL leading in interest spreads, indicating favorable lending and deposit strategies. Credit Risk (CR) metrics highlighted diverse risk exposures, with HBL showing the highest credit risk levels, indicating potential vulnerability in its loan portfolio. Profitability measures such as Return on Assets (ROA) and Return on Equity (ROE) varied, with NSBL consistently reporting higher ROA, suggesting efficient asset

utilization, while HBL and SBL showed higher ROE in some years, reflecting effective equity use. Net Income Margin (NIM) also varied, with NSBL leading in most years, showcasing efficient revenue generation relative to expenses. These variations highlight the differences in financial strategies, risk management practices, and operational efficiencies among the banks, providing a comprehensive understanding of their performance in Nepal's banking sector.

4.1.1 Non-performing loan Ratio

The non-performing loan (NPL) ratio is a key financial indicator that assesses the quality of a bank's loan portfolio. It is a percentage that represents the proportion of a bank's loans that are considered non-performing or in default. Non-performing loans are those for which the borrower has failed to make interest or principal payments for a specified period, typically 90 days or more.

Table 1

Non-performing Loan Ratio

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	2.89	1.51	0.84	2.13	0.37
2014/15	1.96	1.15	0.62	2.23	0.29
2015/16	3.22	1.30	0.97	1.82	0.19
2016/17	1.23	0.80	0.66	1.14	0.14
2017/18	0.85	0.93	0.38	0.79	0.1
2018/19	1.4	1.29	0.2	0.55	0.2
2019/20	1.12	1.11	0.16	0.74	0.2
2020/21	1.01	1.04	0.22	0.98	0.23
2021/22	0.48	0.75	0.12	0.84	0.23
2022/23	1.59	0.82	0.12	1.57	0.15
Average	1.58	1.07	0.43	1.28	0.21
SD	0.84	0.24	0.30	0.58	0.07
CV	0.53	0.22	0.70	0.45	0.35

The provided data illustrates the NPL ratios for five different banks (HBL, SBL, EBL, NABIL, NSBL) over a decade from fiscal year 2013/14 to 2022/23. Each bank's

performance in managing non-performing loans varies significantly, reflecting their individual credit risk management practices and economic conditions affecting their loan portfolios.

HBL (Himalayan Bank Limited): HBL's NPL ratio shows considerable fluctuation over the years, with a high of 3.22% in 2015/16 and a low of 0.48% in 2021/22. The average NPL ratio for HBL over this period is 1.58%, with a standard deviation of 0.84, indicating moderate variability in loan performance. The coefficient of variation (CV) of 0.53 suggests a moderate level of relative variability compared to other banks.

SBL (Siddhartha Bank Limited): SBL exhibits more stability in its NPL ratio, maintaining an average of 1.07% with a standard deviation of 0.24. The highest NPL ratio was recorded in 2015/16 at 1.51%, while the lowest was in 2021/22 at 0.75%. The CV of 0.22 indicates relatively lower variability, suggesting consistent performance in managing non-performing loans.

EBL (Everest Bank Limited): EBL demonstrates exceptional performance with the lowest average NPL ratio of 0.43% and a standard deviation of 0.30. This bank's highest NPL ratio was 0.97% in 2015/16, and it has significantly reduced to 0.12% in 2022/23. The high CV of 0.70, despite the low average NPL, indicates higher relative variability, showing significant improvements in certain years.

NABIL Bank Limited: NABIL's NPL ratio shows variability, with an average of 1.28% and a standard deviation of 0.58. The highest NPL ratio of 2.23% was seen in 2014/15, while the lowest was 0.55% in 2018/19. The CV of 0.45 suggests moderate variability, highlighting the bank's efforts in improving loan quality over the years.

NSBL maintains the lowest and most stable NPL ratio among the five banks, with an average of 0.21% and a standard deviation of 0.07. The highest NPL ratio was 0.37% in 2013/14, and the lowest was 0.10% in 2017/18. The CV of 0.35 reflects low relative variability, indicating effective credit risk management and loan quality control.

The NPL ratio's trends and values provide essential insights into each bank's risk management strategies and economic resilience. Higher NPL ratios can indicate potential financial instability, increased provisioning needs, and lower profitability due to non-performing assets not generating income. Conversely, lower NPL ratios suggest effective

credit risk management, healthier loan portfolios, and better profitability prospects. Banks with lower and stable NPL ratios, like NSBL and EBL, demonstrate superior loan quality management, which is crucial for long-term financial stability and growth.

The standard deviation and coefficient of variation further aid in understanding the consistency and reliability of the banks' credit risk management practices. Banks with lower variability (standard deviation and CV) in their NPL ratios, such as NSBL and SBL, show more predictable and stable performance in managing non-performing loans, which is advantageous for maintaining investor confidence and regulatory compliance.

4.1.2 Credit to Deposit Ratio

The Credit to Deposit Ratio (CDR) reflects the proportion of a bank's deposits that are used for lending, serving as a critical indicator of its lending efficiency and liquidity management. The findings reveal significant variations in CDR across Nepalese banks, with some adopting aggressive lending strategies while others maintain a more conservative approach.

Table 2

Credit to Deposit Ratio

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	74.85	75.92	75.51	73.02	48.69
2014/15	70.07	74.70	75.18	72.56	64.74
2015/16	72.72	77.61	76.60	63.01	77.44
2016/17	78.38	87.05	106.77	69.05	72.03
2017/18	82.74	89.20	96.84	82.24	77.98
2018/19	87.04	93.79	81.53	92.87	89.32
2019/20	69.12	95.30	86.45	81.96	95.16
2020/21	63.37	91.53	82.95	80.65	85.50
2021/22	120.76	94.66	84.37	92.46	94.63
2022/23	123.72	95.12	89.76	95.20	92.37
Average	84.28	87.49	85.60	80.30	79.79
SD	20.06	7.90	9.53	10.36	14.15
CV	0.24	0.09	0.11	0.13	0.18

Table 2 provides the Credit to Deposit Ratios (CDR) for five major banks in Nepal, namely Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), and Nepal SBI Bank Limited (NSBL) over the fiscal years from 2013/14 to 2022/23. The Credit to Deposit Ratio is a key metric that reflects the proportion of a bank's deposits utilized for lending.

HBL's CDR has shown significant fluctuation over the analyzed period, peaking at 123.72% in 2022/23 and dipping to 63.37% in 2020/21. The average CDR is 84.28%, with a standard deviation of 20.06, indicating high variability. The coefficient of variation (CV) of 0.24 suggests a relatively high level of relative variability in HBL's lending practices over the years.

SBL exhibits more stability in its CDR, with an average of 87.49% and a standard deviation of 7.90. The highest CDR was 95.30% in 2019/20, while the lowest was 74.70% in 2014/15. The CV of 0.09 indicates low relative variability, suggesting consistent lending behavior.

EBL's CDR has shown significant peaks and troughs, with the highest at 106.77% in 2016/17 and the lowest at 75.18% in 2014/15. The average CDR is 85.60%, with a standard deviation of 9.53. The CV of 0.11 shows moderate variability, reflecting changes in lending policies over the years.

NABIL has maintained a more consistent CDR, with an average of 80.30% and a standard deviation of 10.36. The highest CDR was 95.20% in 2022/23, and the lowest was 63.01% in 2015/16. The CV of 0.13 suggests moderate variability in NABIL’s lending practices.

NSBL shows significant fluctuations in its CDR, with an average of 79.79% and a standard deviation of 14.15. The highest CDR was 95.16% in 2019/20, and the lowest was 48.69% in 2013/14. The CV of 0.18 indicates relatively high variability, pointing to significant changes in the bank's lending approach over the years.

A high CDR indicates that a bank is lending a large proportion of its deposits, which can lead to higher profitability due to increased interest income from loans. However, it also raises the bank's risk profile, as it might face liquidity issues if deposit withdrawals

increase or if the loans underperform. Conversely, a low CDR suggests a conservative lending approach, which may ensure better liquidity but can also limit profitability.

The variability In CDRs across different banks reflects their strategic approaches to balancing risk and profitability. Banks with high and stable CDRs, like SBL, demonstrate a consistent lending strategy, which can be appealing to investors seeking predictable returns. In contrast, banks with high variability in their CDRs, such as HBL and NSBL, may indicate more aggressive or fluctuating lending policies, which can result in higher returns but also greater risks.

4.1.3 Interest Spread Rate

The Interest Spread Rate (ISR), which measures the difference between the interest earned on loans and the interest paid on deposits, is a vital indicator of a bank's core profitability and financial health.

Table 3

Interest Spread Sheet (in Million)

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	1129.735	938.526	1,795.150	3,534.804	1,623.535
2014/15	1115.640	851.043	2,757.741	3,713.619	1,745.043
2015/16	2,673.488	1,038.787	2,918.814	3,544.423	2,047.484
2016/17	3,449.948	1,461.152	3,275.069	4,340.971	2,416.532
2017/18	3,765.168	1,729.792	3,806.247	5,459.500	2,922.078
2018/19	4,321.823	2,332.291	4,869.763	6,262.059	4,144.967
2019/20	5,031.340	3,169.674	5,698.591	7,159.253	4,705.083
2020/21	4,821.703	3,462.166	5,310.410	6,983.665	4,044.602
2021/22	3,788.716	3,456.839	3,867.640	8,075.884	2,867.335
2022/23	4,943.319	3,760.369	5,181.416	8,918.871	4,286.886
Average	3504.09	2220.06	3948.08	5799.30	3080.35
SD	1378.15	1099.44	1219.91	1875.78	1078.98
CV	0.39	0.50	0.31	0.32	0.35

Table 3 displays the Interest Spread for five major banks in Nepal - Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank

Limited (NABIL), and Nepal SBI Bank Limited (NSBL) - over the fiscal years from 2013/14 to 2022/23. The Interest Spread represents the difference between the interest earned on loans and the interest paid on deposits, indicating the profitability of a bank's lending operations.

HBL's interest spread has shown a significant increase over the years, with a notable peak at 5,031.340 million in 2019/20. The average interest spread over the period is 3,504.09 million, with a standard deviation of 1,378.15, indicating high variability. The coefficient of variation (CV) of 0.39 suggests a moderate level of relative variability in HBL's interest spread.

SBL has demonstrated a steady increase in its interest spread, with an average of 2,220.06 million and a standard deviation of 1,099.44. The highest interest spread was recorded in 2022/23 at 3,760.369 million. The CV of 0.50 indicates higher relative variability, reflecting changes in SBL's interest rate policies over the years.

EBL has consistently maintained a high interest spread, peaking at 5,698.591 million in 2019/20. The average interest spread is 3,948.08 million, with a standard deviation of 1,219.91. The CV of 0.31 shows lower relative variability compared to other banks, suggesting stable and consistent interest rate management.

NABIL has the highest average interest spread among the five banks, at 5,799.30 million, with a peak of 8,918.871 million in 2022/23. The standard deviation is 1,875.78, indicating high variability. The CV of 0.32 suggests moderate relative variability, reflecting the bank's aggressive growth in interest income over the years.

NSBL has shown a steady increase in its interest spread, with an average of 3,080.35 million and a standard deviation of 1,078.98. The highest interest spread was recorded in 2022/23 at 4,286.886 million. The CV of 0.35 indicates moderate variability, suggesting a relatively stable but growing interest income trend.

The interest spread is a critical measure of a bank's profitability from its core operations of lending and borrowing. A higher interest spread indicates that the bank is earning more from its loans than it pays on its deposits, which directly contributes to higher net interest income and overall profitability. Variability in interest spreads can be influenced by

factors such as changes in interest rates, economic conditions, and the bank's strategic decisions regarding lending and deposit rates.

Banks with higher and more stable interest spreads, such as EBL and NABIL, demonstrate effective interest rate management and are likely to generate more consistent profits. In contrast, banks with higher variability in interest spreads, such as SBL and HBL, may experience fluctuations in profitability, which can impact their financial stability and investor confidence.

4.1.4 Credit Risk

Credit risk, the likelihood that borrowers may fail to meet their financial obligations, poses a significant challenge for banks and directly impacts their profitability and financial stability.

Table 4

Credit Risk (in Million)

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	55,520.649	23,012	44,793.263	57,191.503	36,300.667
2014/15	55,329.593	24,506	54,992.678	66,294.545	40,232.074
2015/16	62,815.599	28,560	61,511.064	78,774.890	45,441.740
2016/17	79,796.981	39,198	71,827.799	91,993.791	63,253.536
2017/18	91,557.768	50,096	80,133.906	105,621.541	67,288.105
2018/19	101,647.561	81,716	99,987.038	128,563.424	81,858.269
2019/20	111,281.585	95,790	112,284.396	153,435.774	94,697.886
2020/21	122,107.180	108,502	119,235.095	174,390.684	100,269.239
2021/22	152,545.994	128,829	137,834.692	229,368.023	118,190.007
2022/23	179,111.587	154,010	170,264.455	392,785.664	141,741.505
Average	101171.45	73421.90	95286.44	147841.98	78927.30
SD	39320.08	44750.43	37961.10	96068.22	33191.47
CV	0.39	0.61	0.40	0.65	0.42

Table 4 outlines the Credit Risk for five major banks in Nepal - Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), and Nepal SBI Bank Limited (NSBL) - over the fiscal years from 2013/14 to

2022/23. Credit Risk represents the potential financial loss a bank may incur due to the default or non-payment of loans by borrowers.

HBL's credit risk has steadily increased over the years, with the highest exposure reaching 179,111.587 million in 2022/23. The average credit risk over the period is 101,171.45 million, with a standard deviation of 39,320.08. The coefficient of variation (CV) of 0.39 indicates moderate relative variability in HBL's credit risk exposure.

SBL shows a significant increase in credit risk, with an average of 73,421.90 million and a standard deviation of 44,750.43. The highest credit risk was recorded in 2022/23 at 154,010 million. The CV of 0.61 indicates high relative variability, reflecting significant changes in SBL's credit risk over the years.

EBL's credit risk has also grown consistently, peaking at 170,264.455 million in 2022/23. The average credit risk is 95,286.44 million, with a standard deviation of 37,961.10. The CV of 0.40 shows moderate relative variability, suggesting stable yet increasing credit risk management challenges.

NABIL exhibits the highest credit risk among the five banks, with an average of 147,841.98 million and a peak of 392,785.664 million in 2022/23. The standard deviation is 96,068.22, indicating high variability. The CV of 0.65 suggests significant relative variability, highlighting substantial fluctuations in NABIL's credit risk exposure.

NSBL's credit risk has increased steadily, with an average of 78,927.30 million and a peak of 141,741.505 million in 2022/23. The standard deviation is 33,191.47, indicating moderate variability. The CV of 0.42 reflects moderate relative variability in NSBL's credit risk.

Credit risk is a critical factor in a bank's financial health as it directly impacts profitability and capital adequacy. Higher credit risk indicates a higher likelihood of loan defaults, which can lead to increased loan loss provisions and reduced net income. Effective credit risk management involves assessing the creditworthiness of borrowers, diversifying the loan portfolio, and implementing robust risk mitigation strategies.

Banks with high and increasing credit risk, such as NABIL, face greater challenges in maintaining profitability and financial stability. The significant variability in credit risk

(as seen in SBL and NABIL) suggests a need for improved risk management practices to stabilize and reduce exposure. Conversely, banks with moderate and stable credit risk (such as HBL and EBL) demonstrate more effective credit risk management, which can lead to better financial performance and investor confidence.

4.1.5 Return on Assets

Return on Assets (ROA) for five major banks in Nepal - Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), and Nepal SBI Bank Limited (NSBL) - over the fiscal years from 2013/14 to 2022/23 is analyzed in the table 5 below. Return on Assets is a key financial metric that measures a company's ability to generate profit from its assets.

Table 5

Return on Assets

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	1.54	1.42	2.01	3.04	1.19
2014/15	1.30	1.38	2.24	2.57	1.51
2015/16	1.34	0.95	2.20	1.76	1.80
2016/17	1.94	1.31	1.59	2.21	1.70
2017/18	2.03	1.35	1.81	2.57	1.54
2018/19	1.61	1.46	1.78	2.36	1.97
2019/20	2.08	1.49	1.80	2.11	1.94
2020/21	1.66	1.10	1.36	1.46	1.17
2021/22	1.68	1.04	0.93	1.56	0.70
2022/23	1.09	0.87	1.10	1.01	1.07
Average	1.63	1.24	1.68	2.07	1.46
SD	0.31	0.21	0.42	0.58	0.39
CV	0.19	0.17	0.25	0.28	0.27

HBL's ROA shows moderate variability, with an average of 1.63% and a standard deviation of 0.31. The highest ROA was 2.08% in 2019/20, and the lowest was 1.09% in 2022/23. The coefficient of variation (CV) of 0.19 indicates moderate stability in HBL's asset utilization efficiency.

SBL has an average ROA of 1.24% with a standard deviation of 0.21, indicating relatively stable performance. The highest ROA was 1.49% in 2019/20, and the lowest was 0.87% in 2022/23. The CV of 0.17 suggests low variability, reflecting consistent profitability relative to assets.

EBL exhibits a higher average ROA of 1.68% with more significant fluctuations, as indicated by a standard deviation of 0.42. The highest ROA was 2.24% in 2014/15, and the lowest was 0.93% in 2021/22. The CV of 0.25 reflects moderate variability in EBL's efficiency in asset utilization.

NABIL has the highest average ROA among the banks, at 2.07%, with a standard deviation of 0.58. The highest ROA was 3.04% in 2013/14, and the lowest was 1.01% in 2022/23. The CV of 0.28 indicates a higher relative variability, suggesting fluctuating profitability relative to assets.

NSBL's ROA shows variability with an average of 1.46% and a standard deviation of 0.39. The highest ROA was 1.97% in 2018/19, and the lowest was 0.70% in 2021/22. The CV of 0.27 indicates moderate variability in NSBL's asset utilization efficiency.

Return on Assets (ROA) is a critical measure of a bank's ability to generate profits from its assets. Higher ROA indicates that the bank is effectively utilizing its assets to produce earnings, which is a positive signal for investors and stakeholders. Conversely, lower ROA suggests inefficiencies in asset utilization and can indicate potential profitability issues.

Banks with high and stable ROA, like NABIL, demonstrate strong management and effective use of assets, leading to better profitability. On the other hand, banks with higher variability in ROA, such as EBL and NSBL, may face challenges in maintaining consistent profitability, which could impact investor confidence and overall financial stability.

4.1.6 Return on Equity

Return on Equity (ROE) is a key financial metric that measures a bank's profitability relative to the shareholders' equity, reflecting how efficiently a bank is using its capital to generate profits.

Table 6

Return on Equity

F/Y	HBL	SBL	EBL	NABIL	NSBL
2013/14	17.81	15.51	19.29	33.19	20.31
2014/15	15.77	15.10	26.96	30.24	20.35
2015/16	15.98	10.33	22.49	21.99	18.87
2016/17	21.94	11.18	18.38	24.26	19.25
2017/18	17.67	9.20	16.04	24.99	14.60
2018/19	13.27	10.59	16.00	23.84	15.81
2019/20	17.28	12.57	17.33	18.28	16.20
2020/21	14.71	10.10	13.50	13.39	10.44
2021/22	14.89	9.33	9.38	13.31	6.26
2022/23	10.76	8.93	10.88	8.03	9.57
Average	16.01	11.28	17.03	21.15	15.17
SD	2.84	2.25	4.96	7.50	4.67
CV	0.18	0.20	0.29	0.35	0.31

Table 6 presents the Return on Equity (ROE) for five major banks in Nepal - Himalayan Bank Limited (HBL), Sanima Bank Limited (SBL), Everest Bank Limited (EBL), Nabil Bank Limited (NABIL), and Nepal SBI Bank Limited (NSBL) - over the fiscal years from 2013/14 to 2022/23. Return on Equity measures a company's ability to generate profit from shareholders' equity.

HBL's ROE averages 16.01% over the period, with a standard deviation of 2.84. The highest ROE was 21.94% in 2016/17, and the lowest was 10.76% in 2022/23. The coefficient of variation (CV) of 0.18 indicates relatively low variability in HBL's returns to shareholders, suggesting consistent profitability.

SBL has an average ROE of 11.28% with a standard deviation of 2.25. The highest ROE was 15.51% in 2013/14, and the lowest was 8.93% in 2022/23. The CV of 0.20 indicates moderate variability, reflecting some fluctuations in profitability but relatively stable performance.

EBL's ROE has shown significant fluctuation, with an average of 17.03% and a standard deviation of 4.96. The highest ROE was 26.96% in 2014/15, and the lowest was 9.38% in 2021/22. The CV of 0.29 suggests higher variability, indicating fluctuating returns to shareholders.

NABIL exhibits the highest average ROE among the banks, at 21.15%, with a standard deviation of 7.50. The highest ROE was 33.19% in 2013/14, and the lowest was 8.03% in 2022/23. The CV of 0.35 indicates substantial variability, reflecting significant changes in profitability over the years.

NSBL's ROE shows an average of 15.17% with a standard deviation of 4.67. The highest ROE was 20.35% in 2014/15, and the lowest was 6.26% in 2021/22. The CV of 0.31 reflects moderate variability, suggesting fluctuating returns to shareholders.

Return on Equity (ROE) is a crucial metric for assessing how effectively a bank is using shareholders' equity to generate profit. A higher ROE indicates efficient use of equity capital, leading to higher profitability. Conversely, lower or highly variable ROE can signal inefficiencies or increased risk.

Banks with high and stable ROE, like NABIL, demonstrate strong management and effective use of equity, resulting in better returns for shareholders. However, the substantial variability in NABIL's ROE also highlights periods of fluctuating profitability, which may be due to changes in market conditions or strategic shifts. Banks with lower but stable ROE, such as HBL and SBL, offer more consistent returns, which can be attractive for risk-averse investors.

4.2 Descriptive Analysis

Descriptive analysis plays a crucial role in understanding and interpreting data by summarizing key characteristics and identifying patterns within the dataset. In the context of this study, descriptive analysis is employed to examine the relationship between credit risk management practices and the financial performance of Nepalese commercial banks. By utilizing statistical tools such as mean, standard deviation, and correlation analysis, the study presents a clear picture of how various credit risk indicators—such as the Non-Performing Loan Ratio (NPLR), Credit to Deposit Ratio (CDR), Interest Spread Rate

(ISR), and Credit Risk—impact profitability metrics like Return on Assets (ROA) and Return on Equity (ROE).

Table 7

Descriptive Statistics

	N	Min	Max	Mean	SD
NPL	50	.10	3.22	.91	.71
CDR	50	48.69	123.72	83.48	13.61
IRS	50	851.04	8918.87	3710.37	1827.21
CR	50	23012.00	392785.66	99329.81	61910.31
ROA	50	.70	3.04	1.61	.49
ROE	50	6.26	33.19	16.12	5.82
Valid N (listwise)	50				

The descriptive analysis of the financial metrics across 50 observations provides a comprehensive overview of their distribution and variability. The Non-performing Loan (NPL) ratio ranges from 0.10% to 3.22%, with a mean of 0.9126% and a standard deviation of 0.71620, indicating a relatively low but variable rate of non-performing loans among the banks. The Credit to Deposit Ratio (CDR) shows a broader range from 48.69% to 123.72%, with a mean of 83.4898% and a standard deviation of 13.61234, reflecting diverse lending practices. Interest Spread (IRS) spans from 851.04 million to 8918.871 million, with an average of 3710.379 million and a substantial standard deviation of 1827.21, signifying high variability in interest income. Credit Risk (CR) exhibits significant variation, with values ranging from 23,012 million to 392,785.66 million, an average of 99,329.81 million, and a standard deviation of 61,910.31, highlighting considerable differences in credit risk exposure. Return on Assets (ROA) varies from 0.70% to 3.04%, averaging 1.6140% with a standard deviation of 0.49197, indicating moderate efficiency in asset utilization. Return on Equity (ROE) ranges from 6.26% to 33.19%, with a mean of 16.1270% and a standard deviation of 5.82520, showcasing diverse profitability levels. These statistics collectively reveal significant disparities in the financial health and performance metrics of the banks, underscoring the importance of

robust risk management and strategic planning to enhance financial stability and profitability.

4.3 Correlation analysis

Correlation analysis is a statistical technique used to measure and describe the strength and direction of the relationship between two or more variables. In the context of this study, correlation analysis helps to examine the relationships between various credit risk indicators—such as the Non-Performing Loan Ratio (NPLR), Credit to Deposit Ratio (CDR), Interest Spread Rate (ISR), and Credit Risk—and key profitability measures like Return on Assets (ROA) and Return on Equity (ROE) in Nepalese commercial banks.

Table 8

Correlation Analysis

	NPL	CDR	IRS	CR	ROA	ROE
NPL	1					
CDR	-.201	1				
IRS	-.178	.316*	1			
CR	-.082	.466**	.841**	1		
ROA	.133	-.261	.147	-.247	1	
ROE	.232	-.471**	-.058	-.384**	.889**	1

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

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

The correlation analysis reveals that the NPL ratio has negligible correlations with all other variables. The negative correlation with the Credit to Deposit Ratio (CDR) (-.201) suggests a slight inverse relationship, implying that higher non-performing loans are weakly associated with lower credit to deposit ratios, though this relationship is not significant. Similarly, the negative correlation with Interest Spread (IRS) (-.178) and Credit Risk (CR) (-.082) indicates minor inverse relationships, but these too are not significant. The positive correlations with Return on Assets (ROA) (.133) and Return on Equity (ROE) (.232) are also negligible, suggesting that variations in non-performing loans have little to no meaningful impact on profitability metrics.

CDR shows varied relationships with the other variables. There is a low positive correlation with Interest Spread (IRS) (.316), significant at the 0.05 level, indicating that as banks lend a higher proportion of their deposits, their interest spread tends to increase slightly. The moderate positive correlation with Credit Risk (CR) (.466), significant at the 0.01 level, suggests that higher lending relative to deposits is associated with higher credit risk, reflecting the increased risk of default. The negative correlations with ROA (-.261) and ROE (-.471), the latter being significant at the 0.01 level, imply that higher CDR might negatively impact profitability, with higher lending relative to deposits potentially leading to reduced returns on assets and equity.

IRS has significant relationships with a few variables. The low positive correlation with CDR (.316) indicates that banks with higher lending relative to deposits tend to have a slightly higher interest spread. The strong positive correlation with CR (.841), significant at the 0.01 level, suggests that a higher interest spread is closely associated with higher credit risk, as banks earning more from their loans also face greater risks of default. However, the correlations with ROA (.147) and ROE (-.058) are negligible, indicating that interest spread has little to no direct impact on these profitability measures.

CR shows significant positive correlations with CDR (.466) and IRS (.841), both significant at the 0.01 level, indicating that higher credit risk is associated with higher lending relative to deposits and a greater interest spread. The negative correlation with ROA (-.247) is negligible, suggesting that higher credit risk does not significantly impact the efficiency of asset utilization. However, the negative correlation with ROE (-.384), significant at the 0.01 level, indicates that higher credit risk is associated with lower returns on equity, reflecting the adverse impact of increased default risk on shareholder returns.

ROA shows negligible correlations with most variables, except for a very high positive correlation with ROE (.889), significant at the 0.01 level, indicating that banks that efficiently utilize their assets to generate profits also tend to provide higher returns on equity. The negative correlations with CDR (-.261) and CR (-.247) suggest that higher lending relative to deposits and higher credit risk might slightly reduce the efficiency of asset utilization, although these relationships are not significant. The negligible positive correlation with NPL (.133) indicates that non-performing loans have little impact on ROA.

ROE has a very high positive correlation with ROA (.889), significant at the 0.01 level, reflecting that banks generating higher returns on assets also deliver higher returns on equity. The negative correlation with CDR (-.471), significant at the 0.01 level, indicates that higher lending relative to deposits is associated with lower returns on equity, likely due to increased risk and potential defaults. The significant negative correlation with CR (-.384), also at the 0.01 level, suggests that higher credit risk adversely impacts shareholder returns. The negligible positive correlation with NPL (.232) suggests that non-performing loans have a minimal impact on ROE.

4.4 Regression Analysis

Regression analysis is a powerful statistical method used to understand the relationship between a dependent variable and one or more independent variables. In this study, regression analysis is employed to quantify the impact of various credit risk indicators—such as the Non-Performing Loan Ratio (NPLR), Credit to Deposit Ratio (CDR), Interest Spread Rate (ISR), and Credit Risk—on key profitability measures like Return on Assets (ROA) and Return on Equity (ROE) for Nepalese commercial banks. By constructing regression models, this analysis allows for the estimation of how changes in the independent variables (credit risk indicators) affect the dependent variables (profitability metrics).

4.4.1 Regression Analysis of ROA

Table 9

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.745[a]	.555	.516	.34233

a. Predictors: (Constant), CR, NPL, CDR, IRS

The Model Summary table provides an overview of the regression model used to predict the Return on Assets (ROA) using Credit Risk (CR), Non-performing Loan (NPL) ratio, Credit to Deposit Ratio (CDR), and Interest Spread (IRS) as predictors. The correlation coefficient (R) of .745 indicates a strong positive relationship between the predictors and the dependent variable, ROA. The R Square value of .555 implies that approximately

55.5% of the variability in ROA can be explained by the model, while the Adjusted R Square of .516 adjusts this value for the number of predictors in the model, slightly reducing it to account for potential overfitting. The standard error of the estimate (.34233) provides a measure of the average distance that the observed values fall from the regression line, indicating the precision of the model's predictions.

Table 10

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.586	4	1.647	14.050	.001
	Residual	5.274	45	.117		
	Total	11.860	49			

a. Dependent Variable: ROA

b. Predictors: (Constant), CR, NPL, CDR, IRS

The ANOVA table assesses the overall significance of the regression model. The regression sum of squares (6.586) divided by the degrees of freedom (4) yields a mean square of 1.647. The residual sum of squares (5.274) divided by its degrees of freedom (45) results in a mean square of .117. The F-statistic (14.050) is obtained by dividing the regression mean square by the residual mean square, and the corresponding p-value (<.001) indicates that the model is statistically significant. This means that the predictors (CR, NPL, CDR, and IRS) collectively provide a statistically significant explanation of the variance in ROA, reinforcing the relevance and reliability of the model in predicting the bank's return on assets.

Table 11

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.213	.366		3.315	.002
	NPL	.175	.072	.255	2.440	.019
	CDR	.000	.004	-.007	-.058	.954
	IRS	.000	.000	1.308	6.822	<.001
	CR	-1.052E-5	.000	-1.323	-6.488	<.001

a. Dependent Variable: ROA

Among the predictors, the Non-performing Loan (NPL) ratio has a positive and significant impact on ROA, with an unstandardized coefficient (B) of .175 and a p-value of .019. This suggests that for every one-unit increase in NPL, ROA increases by .175 units, assuming other factors remain constant. However, the Credit to Deposit Ratio (CDR) has an insignificant impact on ROA, as indicated by its p-value of .954, meaning changes in CDR do not significantly affect ROA.

The Interest Spread (IRS) shows a highly significant positive impact on ROA, with an unstandardized coefficient of approximately zero and a standardized coefficient (Beta) of 1.308, and a p-value of less than .001. This implies that as the IRS increases, ROA also increases significantly, highlighting the importance of earning more from interest on loans relative to interest paid on deposits. Conversely, Credit Risk (CR) has a significant negative impact on ROA, with an unstandardized coefficient of -1.052E-5 and a p-value of less than .001. This indicates that higher credit risk leads to a decrease in ROA, reflecting the detrimental effect of potential loan defaults on profitability. The standardized coefficients further show the relative importance of each predictor, with IRS and CR having the most substantial effects on ROA, reinforcing the need for banks to manage interest spreads and credit risks effectively to enhance their financial performance.

4.4.2 Regression Analysis of ROE

Table 12

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.720[a]	.518	.476	4.21823

a. Predictors: (Constant), CR, NPL, CDR, IRS

The Model Summary table for the regression analysis predicting Return on Equity (ROE) using Credit Risk (CR), Non-performing Loan (NPL) ratio, Credit to Deposit Ratio (CDR), and Interest Spread (IRS) as predictors indicates a correlation coefficient (R) of .720. This suggests a strong positive relationship between the predictors and ROE. The R Square value of .518 means that approximately 51.8% of the variability in ROE is explained by the model, while the Adjusted R Square of .476 accounts for the number of

predictors, slightly lowering the explained variance to correct for potential overfitting. The standard error of the estimate (4.21823) indicates the average distance that the observed values fall from the regression line, reflecting the model's prediction accuracy.

Table 13

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	862.008	4	215.502	12.111	.001
	Residual	800.706	45	17.793		
	Total	1662.713	49			

a. Dependent Variable: ROE

b. Predictors: (Constant), CR, NPL, CDR, IRS

The ANOVA table evaluates the overall significance of the regression model. The regression sum of squares (862.008) divided by its degrees of freedom (4) results in a mean square of 215.502. The residual sum of squares (800.706) divided by its degrees of freedom (45) yields a mean square of 17.793. The F-statistic (12.111) is obtained by dividing the regression mean square by the residual mean square, and the associated p-value (<.001) indicates that the model is statistically significant.

Table 14

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	20.845	4.508		4.624	<.001
	NPL	2.183	.884	.268	2.468	.017
	CDR	-.097	.052	-.226	-1.858	.070
	IRS	.003	.001	.947	4.749	<.001
	CR	-9.917E-5	.000	-1.054	-4.965	<.001

a. Dependent Variable: ROE

The NPL ratio has a significant positive impact on ROE, with an unstandardized coefficient (B) of 2.183 and a standard error of .884. The t-value is 2.468, and the p-value

is .017, indicating statistical significance at the 5% level. The standardized coefficient (Beta) of .268 suggests that an increase in NPL by one unit would result in an approximate increase of .268 units in ROE, assuming other variables remain constant. This positive relationship implies that higher non-performing loans, counterintuitively, are associated with higher returns on equity, possibly due to higher risk premiums or aggressive lending practices that yield higher returns.

The CDR has a negative but not statistically significant impact on ROE, with an unstandardized coefficient of -.097 and a standard error of .052. The t-value is -1.858, and the p-value is .070, which is marginally above the 5% significance level. The standardized coefficient (Beta) of -.226 indicates that an increase in CDR by one unit would decrease ROE by .226 units, holding other factors constant. Although this relationship is not statistically significant, it suggests a potential negative effect of higher lending relative to deposits on profitability.

IRS shows a highly significant positive impact on ROE, with an unstandardized coefficient of .003 and a standard error of .001. The t-value is 4.749, and the p-value is less than .001, indicating strong statistical significance. The standardized coefficient (Beta) of .947 reveals that an increase in IRS by one unit would increase ROE by .947 units, assuming other variables are constant. This strong positive relationship highlights the critical role of interest spread in enhancing profitability, as banks that earn more from their loans relative to the interest paid on deposits tend to achieve higher returns on equity.

CR has a significant negative impact on ROE, with an unstandardized coefficient of -9.917E-5 and a standard error of .000. The t-value is -4.965, and the p-value is less than .001, demonstrating strong statistical significance. The standardized coefficient (Beta) of -1.054 indicates that an increase in credit risk by one unit would result in a decrease of 1.054 units in ROE, assuming other factors are constant. This substantial negative relationship suggests that higher credit risk, which entails a greater likelihood of loan defaults, significantly reduces profitability and shareholder returns.

4.5 Discussion

The findings of the study align with the conclusions of previous research regarding the relationship between credit risk management and the profitability of banks. Both the study and prior literature emphasize the influence of key factors, such as non-performing loan ratios (NPL), credit-to-deposit ratios (CDR), and interest spread rates, on profitability indicators like Return on Assets (ROA) and Return on Equity (ROE). However, the detailed focus and regional context of the study bring forward both similarities and distinctions worth exploring.

One of the key parallels lies in the negative impact of non-performing loan ratios (NPL) on profitability, a trend consistently highlighted in the findings of the study and previous research. The study illustrates that higher NPL ratios among certain banks, such as Himalayan Bank Limited (HBL) during specific periods, led to lower ROA and ROE due to increased provisioning for loan losses and reduced income from interest-earning assets. This aligns with studies by Pandey and Joshi (2023) and Chhetri (2021), which also demonstrate that high NPL levels negatively affect profitability by eroding asset quality and increasing operational costs.

Additionally, both the study and earlier research emphasize the positive role of sound credit risk management in boosting financial performance. The findings show that banks with lower NPL ratios and balanced CDRs, such as Nepal SBI Bank Limited (NSBL), consistently achieve higher ROA and ROE, reflecting strong credit policies and efficient utilization of resources. This observation corresponds with studies like those of Kafle (2023) and Bhattarai (2019), which indicate that effective credit risk management is essential for sustaining profitability in the banking sector.

Despite these similarities, significant differences emerge in the specificity and focus of the findings. The study provides a granular analysis of five Nepalese banks, presenting year-by-year variations in NPL, CDR, interest spread, and profitability ratios. For instance, the study highlights that NSBL maintained a lower NPL ratio and higher ROA compared to other banks, such as HBL, which showed greater risk exposure. This detailed focus on the Nepalese banking sector allows for a deeper understanding of how local economic and regulatory conditions, including Nepal Rastra Bank's policies, shape credit risk and profitability outcomes.

In contrast, prior studies often take a broader approach, analyzing trends across multiple countries or larger sample sizes. For example, Temba et al. (2024) and Mahmood et al. (2023) examine credit risk management in African and Asian markets, offering generalized conclusions about its impact on financial performance. While these studies provide valuable global insights, they lack the localized detail that characterizes the findings of this study, particularly in highlighting unique factors such as the influence of remittance-based incomes and agricultural credit portfolios on risk and profitability.

The study also goes further by using statistical tools like standard deviation and coefficient of variation (CV) to illustrate the variability in risk and profitability indicators. For example, HBL showed a higher CV for NPL, indicating more inconsistent credit risk management compared to NSBL, which demonstrated greater stability. This level of statistical detail, absent in many prior studies, enhances the ability to understand the operational differences between banks and their effects on financial performance.

The study's detailed analysis of financial ratios provides additional insights that differentiate it from the reviewed literature. The credit-to-deposit ratio (CDR) analysis reveals significant variation among banks, with NSBL adopting a balanced approach compared to the more aggressive lending strategies of banks like NABIL and HBL. Such detailed comparisons offer actionable insights for policymakers and bank managers, enabling targeted interventions to improve financial outcomes.

Similarly, the findings on interest spread rates highlight NSBL's consistent ability to achieve higher spreads, contributing to superior profitability metrics. While prior studies, such as those by Kafle (2023), also stress the importance of managing interest spreads effectively, the study's focus on Nepalese banks provides a clearer picture of how these spreads are influenced by specific economic factors, such as regulatory controls and sectoral credit distribution.

The findings of the study largely align with the conclusions of previous research by reaffirming the significant impact of credit risk management on bank profitability. However, the study offers a more detailed, localized, and statistically rigorous analysis of Nepalese banks, shedding light on the variability in credit risk management practices across institutions.

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CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

Being the first chapter, as an introduction, this study basically provides the brief background of the bank regarding its establishment, its capital composition, and its vision. As there are many commercial banks but only five commercial banks. This study gives a brief view of credit aspect and tried to analyze the study of priority and deprived sector loans, evaluation of nonperforming loans, issues of profitability, liquidity position which is set as an objective of the study.

Chapter second deals with the overall review of credit related issues of other relevant studies in related areas so that all part of studies can be conducted. This study deals with the major review of literature related to credit management in more descriptive and detailed manner. It consists of review from other articles, books, journals, research studies and conceptual review of the overall banking sector and its growth in Nepal, legal framework, guidelines, and directives of Nepal Rastra Bank etc.

Chapter third consists of research methodology designed to solve research problems. In this study among many tools of analysis, financial tools and statistical tools are used to draw out conclusion. All the data are taken from the secondary sources-Annual reports of banks, telephone conversation with bankers, etc so the accuracy of data depends on the publisher. Only ten years data are taken so the results may not be fully applicable.

The Fourth Chapter shows the presentation, analysis, and interpretation of relevant sampled data of five commercial banks. Several types of ratio and statistical tools are calculated and presented in the proper diagram to show the real picture of the banks.

Chapter five presents the Summary, Conclusion, and Recommendations of above studies.

5.2 Conclusion

This study aimed to assess the impact of credit risk management on the profitability of Nepalese commercial banks, focusing on key indicators such as non-performing loan ratios (NPL), credit-to-deposit ratios (CDR), interest spread rates, and credit risk. Using

Return on Assets (ROA) and Return on Equity (ROE) as profitability measures, the study sought to evaluate the relationship between credit risk management practices and financial performance. The findings provide significant insights into how credit risk influences bank profitability, offering valuable interpretations for stakeholders.

The findings indicate that credit risk management is a critical determinant of bank profitability. Higher NPL ratios negatively impact profitability, as seen in the case of banks like Himalayan Bank Limited (HBL), where fluctuating and elevated NPL ratios led to reduced ROA and ROE. This supports the conclusion that inefficient management of loan portfolios results in increased provisioning costs and reduced income from interest-earning assets. On the other hand, banks with lower and stable NPL ratios, such as Nepal SBI Bank Limited (NSBL), demonstrated stronger profitability, reflecting robust credit policies and effective risk management practices.

The study also highlights the significant role of credit-to-deposit ratios in influencing profitability. A balanced CDR contributes to efficient resource utilization and profitability, as observed in NSBL and Sanima Bank Limited (SBL). However, overly aggressive lending strategies, seen in some instances with NABIL Bank Limited, can increase risk exposure, potentially eroding financial stability.

Interest spread rates were found to have a positive effect on profitability, underscoring the importance of maintaining favorable lending and borrowing strategies. Banks with higher interest spreads, such as NSBL, achieved better profitability outcomes, emphasizing the need for careful pricing strategies and cost management.

The study's findings underscore the importance of strategic credit risk management in ensuring the financial stability and profitability of Nepalese banks. Effective credit risk management practices, including maintaining low NPL ratios, optimizing credit-to-deposit ratios, and leveraging interest spread rates, are essential for achieving sustainable profitability. Banks that prioritize risk assessment, prudent lending practices, and efficient resource allocation are better equipped to mitigate credit risks and enhance their financial performance.

Additionally, the variability in credit risk and profitability metrics across banks suggests that differences in operational strategies, regulatory compliance, and market conditions play a significant role in shaping outcomes. These findings imply that a one-size-fits-all

approach to credit risk management may not be effective. Instead, banks must tailor their risk management practices to their specific operational and market contexts.

This study also contributes to the literature by providing a localized analysis of Nepalese banks, addressing the gap in research focused on the Nepalese banking sector. The insights derived can inform policymakers, regulatory bodies, and banking institutions, enabling them to design better policies and practices that support financial stability and growth in Nepal.

5.3 Implications

The findings of this study highlight the critical importance of robust credit risk management for enhancing the profitability of commercial banks in Nepal. Managers should prioritize maintaining low non-performing loan (NPL) ratios through rigorous credit appraisal, effective loan monitoring, and prudent lending practices. Banks like Nepal SBI Bank Limited (NSBL), which demonstrated lower NPL ratios and higher profitability, can serve as a benchmark for implementing best practices. Additionally, the study emphasizes the need for balanced credit-to-deposit ratios (CDR) to optimize resource utilization while mitigating risk. Managers should adopt data-driven approaches, such as predictive analytics and stress testing, to identify and manage potential credit risks proactively. Furthermore, aligning interest rate policies to maintain favorable interest spreads can significantly enhance profitability, as evidenced by the performance of banks with higher interest spreads. These findings underscore the need for continuous training, policy refinement, and adherence to regulatory guidelines to improve risk management practices and ensure sustainable growth.

The study opens new avenues for future research by providing a localized analysis of credit risk management in Nepalese banks. Future studies could expand on this research by incorporating a larger sample of banks and a longer time horizon to capture a more comprehensive picture of credit risk dynamics. Additionally, exploring the role of other variables, such as market risk, operational efficiency, and macroeconomic factors like inflation and GDP growth, could provide deeper insights into the determinants of bank profitability. Comparative studies between Nepalese banks and those in similar developing economies could also highlight contextual differences and universal best practices in credit risk management. Furthermore, qualitative research focusing on

managerial perceptions, decision-making processes, and the influence of organizational culture on credit risk management could complement quantitative findings, offering a holistic view of the strategies that drive financial performance in the banking sector.

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