

INVESTMENT PATTERN AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “**Investment Pattern and Financial Performance of Commercial Banks**”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purpose.

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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ABBREVIATIONS

A.D.	Annon Domini
ADBL	Agricultural Development Bank Limited
B.S.	Bikram Sambat
CAR	Capital Adequacy Ratio
CDR	Credit Deposit Ratio
CRR	Cash Reserve Ratio
MBS	Master's in Business Studies
MPS	Market Price per Share
NABIL	Nabil Bank Limited
NIC	NIC Asia Bank Limited
No.	Number
NP	Net Profit
NPLR	Non-Performing Loan Ratio
NRB	Nepal Rastra Bank
NSBI	Nepal State Bank of India
RA	Regression Analysis
ROA	Return on Asset
ROE	Return on Equity
S.N.	Serial Bank
SANIMA	Sanima Bank Limited
SPSS	Statistical Package for the Social Science Software
SRV	Stock Return Change
TI	Total Investment
US	United State

ABSTRACT

Through the examination of important metrics such total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio, credit-deposit ratio, and profitability (ROA and ROE), this research sought to assess the financial performance of Nepalese commercial banks. The research also aimed to investigate the connections between these factors and how they affect profitability. Descriptive and causal comparative methods were both used in a mixed study design. As of January 2024, there were twenty commercial banks in Nepal; a representative sample of five institutions was chosen using stratified sampling. We used secondary data from Nepal Rastra Bank and the stock market board publications, as well as balance statements, profit and loss accounts, and annual reports. Data analysis included the use of inferential methods like multiple regression analysis and correlation as well as descriptive statistics like mean and standard deviation.

The results showed that there were notable differences in the financial performance metrics amongst the banks in the sample. Increases in non-performing loan levels were shown to have a negative impact on profitability, whereas effective overall investment management had a favorable impact on ROE and ROA. To guarantee financial stability and profitability, the cash reserve ratio and the capital adequacy ratio were also essential. According to the study's findings, profitable operations are adversely affected by non-performing loans, while financial performance is improved by prudent investment management and sufficient levels of capital and liquidity. These results highlight the significance of good financial management techniques in the banking industry and are consistent with previous research. The ramifications of the research are complex. From a practical standpoint, this highlights the need of better credit risk management and investment methods in order to increase profitability. In theory, it adds to the corpus of information already available on bank performance, especially when it comes to Nepalese banks.

Keywords: Financial Performance, Nepalese Commercial Banks, Non-Performing Loans, Capital Adequacy Ratio and Profitability (ROA and ROE)

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

The financial performance of commercial banks plays a crucial role in the overall stability and growth of a country's economy. In Nepal, commercial banks constitute a significant part of the financial system, providing essential services such as lending, deposit mobilization, and financial intermediation. Over the years, the banking sector in Nepal has experienced substantial growth, with a notable increase in the number of commercial banks and the volume of financial transactions (Nepal Rastra Bank, 2022). The study of investment patterns and financial metrics such as non-performing loan ratios, capital adequacy ratios, cash reserve ratios, credit deposit ratios, and profitability measures (ROA and ROE) is critical to understanding the sector's performance and resilience.

Total investment by commercial banks is a key indicator of their growth and operational strategy. Investments in various financial instruments and sectors reflect the risk appetite and strategic direction of these institutions. According to Shrestha (2021), the allocation of assets in different investment portfolios significantly influences the bank's overall performance and profitability. In Nepal, the investment strategies of commercial banks have evolved, driven by regulatory changes and market dynamics, necessitating an in-depth analysis of their investment patterns.

The non-performing loan (NPL) ratio is a vital indicator of the health of a bank's loan portfolio. A high NPL ratio signifies poor asset quality and potential financial distress, which can adversely affect a bank's profitability and stability. Research by Bhattarai (2020) highlights that the NPL ratio in Nepalese commercial banks has been influenced by factors such as economic conditions, borrower behavior, and regulatory environment. Understanding the determinants and implications of NPLs is essential for maintaining the financial health of banks and ensuring sustainable growth.

Capital adequacy ratio (CAR) is another critical measure of a bank's financial health, representing its ability to absorb potential losses. The Basel III norms emphasize the

importance of maintaining a robust CAR to safeguard against financial crises. In Nepal, the regulatory framework mandates a minimum CAR, which commercial banks must adhere to (Nepal Rastra Bank, 2021). Studies by Gautam and Thapa (2022) indicate that maintaining an adequate capital buffer is essential for banks to enhance their resilience and support growth initiatives.

The cash reserve ratio (CRR) is a regulatory requirement that mandates banks to hold a certain percentage of their deposits as reserves. This ratio influences the liquidity and lending capacity of banks. According to recent findings by Kafle (2021), the CRR in Nepal has significant implications for the liquidity management and operational efficiency of commercial banks. Effective management of CRR ensures that banks can meet their liquidity needs without compromising their profitability.

The credit deposit ratio (CDR) reflects the extent to which banks utilize their deposits for lending purposes. A higher CDR indicates aggressive lending practices, which can lead to higher profitability but also increased risk. Conversely, a lower CDR may suggest conservative lending, affecting profitability. Shrestha and Adhikari (2022) observe that the CDR of Nepalese commercial banks has shown variability, influenced by economic conditions and regulatory policies. Analyzing the trends and impacts of CDR is crucial for understanding the lending behavior and risk profile of banks.

Profitability, measured through return on assets (ROA) and return on equity (ROE), is a primary indicator of a bank's financial performance. These metrics provide insights into how efficiently a bank utilizes its assets and equity to generate profits. Recent research by Lama (2022) underscores the importance of profitability in assessing the overall health and competitive position of banks in Nepal. Investigating the factors that influence ROA and ROE can help identify strategies to enhance the financial performance of commercial banks.

The study of total investment, non-performing loan ratios, capital adequacy ratios, cash reserve ratios, credit deposit ratios, and profitability of Nepalese commercial banks is vital for understanding their financial performance and stability. The insights gained from this research will be instrumental in formulating policies and strategies to strengthen the

banking sector, ensuring its contribution to the economic development of Nepal. Future studies should continue to explore these areas to adapt to the dynamic financial landscape and address emerging challenges.

1.2 Problem Statement

The financial sector in Nepal, particularly commercial banks, has seen substantial growth, yet faces critical challenges that impact its stability and performance. Key financial metrics such as total investment, non-performing loan (NPL) ratios, capital adequacy ratios (CAR), cash reserve ratios (CRR), credit deposit ratios (CDR), and profitability measures (ROA and ROE) are essential indicators of the health of these banks. The relationships between these variables and their collective impact on bank performance are not well-understood, creating a significant gap in the literature and practical knowledge (Gautam & Thapa, 2022). This study seeks to address these gaps by investigating how these financial metrics interact and influence the profitability of Nepalese commercial banks.

The effectiveness of commercial banks' investment strategies in Nepal remains under-researched. Understanding how total investment decisions affect profitability and growth is crucial for optimizing asset allocation and risk management (Shrestha, 2021). The lack of detailed analysis on investment patterns necessitates a comprehensive study to explore their implications on the financial performance of banks in Nepal.

Non-performing loans are a persistent problem for Nepalese banks, affecting their financial stability and profitability. High NPL ratios indicate poor credit management and potential financial distress, which can erode investor confidence and destabilize the banking sector (Bhattarai, 2020). This study aims to identify the factors contributing to high NPLs and their relationship with key performance indicators such as ROA and ROE.

The capital adequacy ratio is vital for ensuring that banks can absorb potential losses and protect depositors. Despite its importance, there is limited understanding of how CAR affects the financial performance of commercial banks in Nepal (Gautam & Thapa, 2022). This research seeks to explore the impact of CAR on profitability, providing insights into the effectiveness of capital regulations in enhancing bank stability and performance.

The cash reserve ratio is a crucial aspect of liquidity management for banks. Proper CRR management ensures that banks can meet their liquidity needs without compromising their profitability (Kafle, 2021). This study investigates the relationship between CRR and financial performance, shedding light on how liquidity constraints impact the operational efficiency and profitability of Nepalese commercial banks.

The credit deposit ratio indicates the extent to which banks utilize their deposits for lending. Balancing a high CDR for profitability with the risk of over-lending is a significant challenge (Shrestha & Adhikari, 2022). This research analyzes the impact of varying CDR levels on bank performance, focusing on how lending practices influence profitability and risk exposure.

Profitability, as measured by return on assets and return on equity, is a primary indicator of a bank's financial health. Understanding the determinants of profitability helps banks to enhance their competitive position and financial stability (Lama, 2022). This study explores the factors influencing ROA and ROE in Nepalese commercial banks, providing a comprehensive analysis of profitability drivers. This study addresses the critical issues of total investment, NPL ratios, CAR, CRR, CDR, and profitability in Nepalese commercial banks. The research questions it seeks to answer include:

- a. What is the status of total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio, credit deposit ratio and profitability (ROA and ROE) of Nepalese commercial banks?
- b. How is the relationship between total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio, credit deposit ratio and profitability (ROA and ROE) in Nepalese commercial banks?
- c. Does total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio and credit deposit ratio have impact on profitability (ROA and ROE) of Nepalese commercial banks?

1.3 Objectives of the Study

The main objective of the study is to explore the total investment pattern and financial performance of commercial banks. The specific objectives of the study are as follows;

- a. To analyze the status of total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio, credit deposit ratio and profitability (ROA and ROE) of Nepalese commercial banks.
- b. To examine the relationship between total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio, credit deposit ratio and profitability (ROA and ROE) in Nepalese commercial banks.
- c. To assess the impact of total investment, non-performing loan ratio, capital adequacy ratio, cash reserve ratio and credit deposit ratio on profitability (ROA and ROE) of Nepalese commercial banks.

1.4 Research Hypotheses

The following hypotheses have been formulated to be tested. The alternative hypotheses have been formulated with independent and dependents variables.

H1: There is significant impact of total investment on return on assets.

H2: There is significant impact of non-performing loan on return on assets.

H3: There is significant impact of cash reserve ratio on return on assets.

H4: There is significant impact of credit deposit ratio on return on assets.

H5: There is significant impact of capital adequacy ratio on return on assets.

H6: There is significant impact of total investment on return on equity.

H7: There is significant impact of non-performing loan on return on equity.

H8: There is significant impact of cash reserve ratio on return on equity.

H9: There is significant impact of credit deposit ratio on return on equity.

H10: There is significant impact of capital adequacy ratio on return on equity.

1.5 Rationale of the Study

The rationale behind this study will be based on the critical role that commercial banks will play in the economic development of Nepal. As the primary institutions for financial intermediation, commercial banks will significantly influence economic activities through their lending, investment, and deposit mobilization functions. However, the performance and stability of these banks will be continuously challenged by various financial metrics such as total investment, non-performing loan (NPL) ratios, capital adequacy ratios (CAR), cash reserve ratios (CRR), credit deposit ratios (CDR), and profitability measures (ROA

and ROE). A thorough understanding of these metrics and their interrelationships will be essential for ensuring the robustness and resilience of the banking sector, which, in turn, will support the broader economic growth and stability of Nepal.

Given the dynamic and evolving nature of the financial sector, it will be imperative to investigate how these financial metrics will impact the overall performance of commercial banks. Previous research will often focus on individual aspects such as NPL ratios or CAR, but there will be a significant gap in the literature concerning the comprehensive analysis of these variables and their combined effect on profitability. While some studies will highlight the importance of investment strategies or address the challenges posed by NPLs, there will be a lack of integrated studies that will examine how these and other critical metrics will interact to influence financial outcomes. By filling this gap, the present study will aim to provide a holistic view of the factors driving the financial performance of Nepalese commercial banks.

Furthermore, the findings from this study will have practical implications for policymakers, financial analysts, and banking professionals. Understanding the determinants of bank profitability and stability will guide regulatory frameworks and strategic decisions, ensuring that banks will be better equipped to manage risks and capitalize on opportunities. Insights into the impact of CAR on profitability will help in designing capital regulations that will enhance bank resilience without stifling growth. Similarly, knowledge of how CRR will affect liquidity and profitability will inform policies that will balance regulatory compliance with operational efficiency. Ultimately, this research will seek to contribute to the development of a more stable and efficient banking sector in Nepal, supporting sustainable economic development and financial inclusion.

1.6 Limitations of the Study

The limitations of the study are as follows;

- a. This study is focused on the investment and profitability of commercial banks in Nepal.
- b. Five commercial banks have been taken for the study as sample such as Agricultural Development Bank Limited (ADBL), Sanima Bank Limited (SBL),

NIC Asia Bank Limited (NIC), Nepal SBI Bank Limited (NSBI) and Nabil Bank Limited (NABIL) out of 20 commercial banks.

- c. This study is completely based on secondary data.
- d. This study covers ten years period from 2013/14 to 2022/23.
- e. The findings of the study cannot be generalized.
- f. The findings and conclusion of the study may not be applicable to all financial institution and international context commercial banks.

CHAPTER II

LITERATURE REVIEW

This chapter reviews books, papers, journals, and research projects that have been published by different organizations. It also includes unpublished master's level student theses. Reviewing pertinent literature for the profitability analysis of commercial banks is the main focus of this chapter. Every research heavily draws on prior knowledge. The basis for the current study is laid by the earlier research, thus it is impossible to disregard them. Put differently, research has to be ongoing. By connecting the current study with the earlier studies, the continuation of the research is guaranteed.

2.1 Theoretical Review

The link between investment and profitability inside commercial banks is explained by a number of financial and economic theories, which provide the theoretical basis of this investigation. Investment choices are crucial because they establish how resources are distributed across different financial instruments and industries, which has an immediate effect on the stability and profitability of financial institutions. There are several theoretical perspectives that may be used to understand the connection between investment and profitability.

2.1.1 Relationship Between Investment and Profitability

The concepts of risk and return underpin the link between investment and profitability in commercial banks. Returns on investments are anticipated, and these earnings support a bank's bottom line. Harry Markowitz's 1952 Modern Portfolio Theory (MPT) states that investing diversity may maximize the trade-off between risk and return. By carefully distributing their investments among a varied portfolio, banks may be able to reduce the risks attached to certain assets and increase their profitability. According to MPT, a portfolio of investments that is well-diversified may provide better returns for a given degree of risk, which will have a beneficial impact on the bank's return on equity (ROE) and return on assets (ROA) (Markowitz, 1952).

The Efficient Market Hypothesis (EMH), which holds that asset prices accurately represent all available information and that financial markets are informationally efficient, is another relevant hypothesis. According to this idea, banks' investment choices are influenced by their capacity for prompt and accurate analysis and response to market information. Profitability may be increased by making wise investment choices that are supported by timely and pertinent information. EMH emphasizes how crucial it is for banks to have strong information systems and analytical skills in order to take advantage of market possibilities and boost profits (Fama, 1970).

2.1.2 Theories Related to Banking and Profitability

Jensen and Meckling (1976) created the Agency Theory, which sheds light on the interaction between managers (agents) and shareholders (principals) in the banking industry. According to the argument, managers might have a conflict of interest as they could put their own interests ahead of that of the shareholders. In order to guarantee that investment choices are made to optimize profitability, it is essential that effective governance structures be in place to match the interests of management with those of the shareholders. Banks may guarantee that managers are motivated to make investment decisions that increase shareholder value and, in turn, the bank's profitability by putting in place robust corporate governance standards (Jensen & Meckling, 1976).

Barney (1991) introduced the Resource-Based View (RBV) of the company, which highlights the role that internal resources and capabilities play in gaining a competitive edge and delivering exceptional performance. The RBV implies that investments in cutting-edge financial products, qualified people resources, and technology may boost commercial banks' profitability. Banks may set themselves apart in the market by providing better services and generating greater returns on investment by skillfully using their special resources and competencies (Barney, 1991).

Finally, the Financial Intermediation Theory emphasizes how banks act as middlemen, transferring money from savers to borrowers. This idea emphasizes how crucial investment choices are to preserving the harmony between profitability and liquidity. Banks may make sure they fulfill their short-term commitments while optimizing their long-term profitability by effectively managing their investment portfolios and liquidity. This theory

should serve as a guide for prudent investing strategies, which are essential to maintaining the financial stability and profitability of commercial banks (Diamond & Dybvig, 1983).

2.1.3 Profit and Profitability

A business's main goal is to make money. The definition of profit is a comparison of a company's activities over a period of two defined dates, often one year apart. The primary financial goal of businesses is to maximize profit from the use of the capital they employ, within socially acceptable bounds, in order to maximize the corporate sources of income that are essential to the success of the country. Profit is the ultimate indicator of a company's efficacy; in a capitalist economy, a private organization that consistently loses money has little chance of surviving (Kulkarni, 1985).

Profit functions as a barometer for assessing management effectiveness as well as a signal for allocating resources. A company may increase the dividends it pays to its common shareholders only when its profit margin increases. Profit is the primary purpose that serves as the basis for measuring an organization's overall success. Profit arises from transactions and is the dominating goal in business. An excess of revenues after all costs of producing them have been subtracted is another definition of profit. Profits are often controlled rather than occurring by accident (Kulkarni, 1985). Profit is the money the organizer is paid and what they get in exchange for an entrepreneur's services. When a business pays labor compensation and interest on capital, it leaves with a surplus that is equal to the difference between total revenue and total cost of production. This is when the business is profitable. The entrepreneur's profit may be essentially classified into two categories: net profit and gross profit. Gross profit is the total amount of money an entrepreneur makes, which includes compensation for management, compensation for the organization of production, and compensation for the inputs of production that the organizer himself provided.

Contrarily, profitability is the link between capital—the "static" resources put aside to generate those profits—and earnings. Linking a profit number (from the Profit and Loss Account) to a resource figure (from the Balance Sheet) is the process of measuring profitability. To put it simply, profit is a measure of gain, and profitability is the relationship between this gain and the assets of the company. A business is deemed

successful if its profitability surpasses the cost of its capital, or the interest rate at which it may borrow funds. All other factors being equal, society will benefit from less profitable enterprises allocating their resources to more lucrative ones since this will raise overall profit gained (Besis, 2015).

Return on Assets

Return on assets (ROA) is a metric used to assess how well a business pays back its capital suppliers. A greater return on assets (ROA) indicates effective asset usage and management. Net profit after taxes is divided by total assets to get this ratio (Nguyen, 2020). A greater return on assets (ROA) indicates how well the business converts its capital into net profits.

Return on Equity

A company's ability to generate a profit for its common investors is gauged by its return on equity, or ROE. Improved capital fund usage is indicated by a higher ROE. Net profit after taxes is divided by total equity to get ROE (Nguyen, 2020). For investors, this ratio is essential since it illustrates how well their money is being reinvested.

2.1.4 Investment

The simplest definition of investment is the giving up of now spending in favor of future consumption with the aim of boosting future wealth. At the conclusion of the investing horizon, the investor anticipates a desirable amount of wealth, but current spending must be sacrificed now with confidence. Generally speaking, the idea is that assets may be sold for cash as required. Since the amount of money one will have in the future is uncertain, it is imperative to invest today. When making an investment, two opposing factors come into play: time and risk. Real assets and financial assets are the two main categories into which investment choices may be divided. Financial assets, such as common stocks, bonds, and debentures, are contracts expressed on paper, while real assets are physical. Organized security markets are where financial assets are purchased and traded (Paudel, 2002).

Risk, or the possibility of losing the investment's primary amount, is a part of any investment. The acquisition of a financial or real asset by an individual or institutional investor that yields a return commensurate with the risk incurred over a future investment term is referred to as an investment. An investment is a thing or asset that is bought with the expectation that it will increase in value or provide income in the future. Managing an investor's wealth, which is the total of their current income plus the present value of all their future income, is the focus of investing. Savings, loans, and previously held assets provide the funding for investments. Investors want to boost their future consumption possibilities by investing the savings they would otherwise have to forgo, meaning that investments are done to build wealth. Effective wealth management is another goal of investors, who want to maximize their gains while shielding their assets from additional risks like taxes and inflation (Malla, 2016).

The investment policy that the bank has established serves as a framework for its investment management. By reducing inherent risks, a bank's investment strategy promotes the effectiveness and profitability of the bank's investment activities. As a result, the economic theory of risk and return is intrinsically related to the idea of investing. Profit is the driving force behind commercial banks. This objective has several motivations. A bank is a legal institution whose owners are its shareholders and whose representatives are the directors. The bank is controlled by the board, and several people are selected to work there. Operating a bank involves significant costs, both direct and indirect. Furthermore, the primary goal of financial investments made by people or entities in banks is profit. Other banks, as opposed to central banks, are motivated by the goal of making a profit while simultaneously advancing economic growth and carrying out their social obligations. Effective banking investment policy implementation is essential to a bank's success; without it, objectives may not be met (Hennie & Sonja, 2010).

Investment portfolios have a major favorable impact on banks' lending behavior and performance (Olokoyo, 2011). The commercial banking system's lending and investment practices and rules change rather slowly. The use of guidelines and procedures that have worked well for funding the creation of products and services or for investing money in corporate and governmental securities is still in place. Lending procedures don't need to be

changed often since company and industry finance demands change more slowly than other factors. Still, some change is apparent. To address the evolving finance demands of business and industry, effective lending techniques have been modified. The most lucrative and liquid assets for banks are advances and loans. An investment always carries some risk—namely, the possibility of losing the initial investment amount. Investment products serve as a means of advancing production. An investment entails a somewhat lengthy financial outflow. Effective portfolio management by banks will strengthen their capital, which will allow them to better serve their clients and increase productivity and effectiveness of banking services. It will also help them stay competitive in the global market and keep up with economic growth. Commercial banks' ability to lend money grows as a result of their resource investments in various financial instruments that generate income for the bank. A bank's investment strategy seeks to maximize returns on its idle capital while maintaining the capital's safety and liquidity to satisfy future requests from clients. A prudent investment program finds a sensible compromise between the goals of safety, liquidity, and profitability, which are in competition with each other. In order to guarantee the security and liquidity of its money while optimizing returns, a bank needs establish its investment strategy (Thirumala, 2014).

2.1.5 Investment Practices Scenario of Commercial Banks in Foreign Country

The primary goals of investing methods used by commercial banks abroad are profit maximization and preservation of liquidity reserves in order to fulfill credit requests. In order to guarantee liquidity for short-term loans to clients, they devote resources to main and secondary reserves, generating short-term credit sources. Investments, as opposed to loans, include long-term financial outlays that do not result in credit (Thirumalai, 2014). Government securities, domestic assets including company shares, debentures, real estate, bullion, units of investment trusts, and other financial instruments are common examples of investing techniques.

The development that commercial banks enable has a major impact on a country's economic growth because they efficiently utilize domestic resources to assist commerce, industry, and enterprise. Since 2013, for example, the Bank of Japan in Japan has carried out both quantitative and qualitative monetary easing measures, such as establishing

negative interest rates to affect market operations and making significant purchases of Japanese Government Bonds (JGBs) (Shirai, 2017). These actions highlight how important investment tactics are for influencing economic policy and promoting economic expansion.

Additionally, commercial banks make a variety of investments, including required investments, loans and advances, investments with other cooperative banks, government securities, shares of private enterprises, non-SLR debt instruments, and cooperative institution shares. By strategically allocating capital to safe and lucrative assets, such as gilt-edged securities and respected company stocks, these investments seek to optimize returns.

2.1.6 Provision of NRB Directives

This research examines Nepal Rastra Bank's guidelines for commercial banks' credit risk management. The central bank of Nepal uses these instructions as regulatory instruments to keep an eye on and manage the activities of the country's commercial banks. The Nepal Rastra Bank Act 2058 gave the bank the ability to issue uniform directions in 2021. The objectives of these directives are to improve the financial sector's overall control systems and bring the banking sector into line with worldwide norms. Specifically addressing loan categorization and provisioning, the unified directive seeks to reduce the risks associated with the several types of credit that financial institutions provide, such as overdrafts, loans, advances, discounted and bought bills, and overdrafts. Banks must categorize loans and advances into four groups according to the aging of principal amounts in accordance with Directive No. 2 of the unified directive (NRB, 2021).

2.2 Empirical Review

This subject is used during the article review process. Industry and banking have taken on a crucial role in the nation's financial resource mobilization and social and economic growth. There is no other function that is more crucial to the economy and its components than finance.

Kiptum (2023) studied the role that investment structure plays in the relationship between income diversification and the Comes Region's financial success. This research aims to

investigate if investment structure influences the link between 2008 and 2019. The following factors were taken into account in the study: financial performance, investment structure, and income diversification. They embraced resource-based perspective theory, agency theory, and modern portfolio theory. According to the research, income diversification significantly improves financial success. The commercial banks' financial performance was significantly impacted negatively by the bank investment structure. Additionally, the commercial banks' financial performance was significantly impacted negatively by the relationship between income diversification and investment structure. By demonstrating that investment structure moderates the link between income diversification and financial success, the research contributes to the ongoing discussion on diversification premiums and discounts. While banks should diversify their revenue streams, they should also think about the composition of their investment portfolio for best outcomes.

Singh (2022) studied how the financial system functions and how patterns and behavior in investing are evolving. This research aims to examine the impact of the COVID-19 pandemic on the financial sector, with a particular focus on how investors' behavior has changed in the Indian stock market and how the post-pandemic environment has been analyzed. The purpose of this research is to examine the role of the Indian financial market after the COVID-19 pandemic, as well as the patterns and behaviors of stock market investments following the same pandemic. Descriptive statistics were used in the research to characterize investment behavior and its causes. By computing the correlation coefficient, the degree of correlation between several indicators of the investment pattern and its drivers was evaluated. Regression modeling using panel data has been used in the research. According to the report, COVID-19 had a significant impact on the financial market, leading to a significant decline in investor investment in securities. The reduction in family income and saving money for emergencies were the main causes of the lower investment. Even though the epidemic has had a negative impact on the Indian stock market, there is still some optimism that the market will recover when things return to normal. Financial institutions are attempting to alter their investor policies in an effort to enhance the financial industry. The daily behavior of the investor is likewise evolving. In order to reduce risk, they would rather invest in a variety of portfolios and prioritize long-term returns above short-term gains.

Singh and Singh (2021) carried out a research on the saving and investing habits of sample farm families. This research set out to investigate the patterns of saving and investing among various sample groups and the correlation between saving and investing. The study used an explanatory research design and the positivist research paradigm. In 2014–16, the saving and investing habits of several sample groups were examined. According to the survey, those with the lowest incomes had negative savings, whereas big farm owners were able to save more than small farmers. When it came to the many fixed assets that needed to be invested in, the procurement of milk animals, structures for farms, and land improvement came first. investment made across several cash inputs for working capital. The largest portion of the total financial inputs (29.44%) went to hired laborers, then manure and fertilizers (22.33%), hired power tractors (16.96%), irrigation (13.61%), and seeds (13.50%). Because they had no money, marginal farmers were unable to invest for non-farm physical capital. Both big and small farmer groups made investments in all the categories where working capital was greatest (61.28 to 61.84 percent). Fixed capital (14.41 to 16.84 percent), financial capital (1214 percent), and nonfarm capital (712 percent) were the next largest percentages of capital invested in. The majority of the sample farmers' investments (69.02%) went toward working capital. In every income level, current income was found to be the primary source of funding, accounting for 49.70 to 94.79 percent of the total investment. Savings came in second, contributing 40.10 to 49.12 percent of the total investment. Keywords: income, savings, investments, and example documents

Neupane (2020) carried a research on the factors that influence Nepalese commercial banks' profitability. Examining the major factors that influence Nepalese commercial banks' profitability is the goal of this research. Descriptive statistics are used in this research to explain the factors that influence Nepalese banks' profitability. Moreover. By computing the correlation coefficient, the degree of correlation between various profitability measures and its drivers has been evaluated. In conclusion, this research has used a panel data regression model (comprising of a Fixed Effect Model and a Random Effect Model) to examine the factors that influence the profitability of commercial banks in Nepal. According to the study, the concentration ratio, GDP growth, inflation, exchange rate, and banking sector development all have a significant negative impact on the

profitability of Nepalese commercial banks as measured by ROA. In contrast, internal factors like bank size, capital base, deposit, loan, off-balance sheet activities, and branch count have no significant impact. Another measure of bank profitability, NIM is primarily impacted by the rate of inflation, the total number of branches, and capital adequacy. This research found that external variables have a major impact on the profitability of Nepalese commercial banks as determined by return on assets. While macroeconomic variables have a relatively small but considerable effect on the profitability of Nepalese commercial banks as assessed by return on assets, industry-specific factors have a high degree of influence on return on assets. Furthermore, the only factors that substantially affect the profitability as determined by net interest margin (NIM) are capital sufficiency, the total number of branches, and the yearly inflation rate. The research revealed that all of the sample banks focus more on their performance, upholding the asset quality, company growth rate, liquidity, and governance procedures. In addition to this, factors including corporate social responsibility, varied services, and market reputation should be considered. It would not only benefit the bank but also serve as a crucial criterion for the bank to be recognized as one of the finest in the country.

Shrestha (2019) researched on "Determinants of Financial Performance of Nepalese Commercial Banks: Evidence from Panel Data Approach". Finding the factors that influence Nepalese commercial banks' financial performance was the main goal of this study. This essay also seeks to pinpoint the important component that contributes to the understanding of Nepalese commercial banks' financial results. Descriptive, correlational, and causal comparative research designs form the basis of this investigation. Using descriptive analysis, the facts and behaviors of the variables under investigation have been examined. Correlation study design is also used to examine the direction and strength of the link between the financial performance of Nepalese commercial banks and variables influencing it. Lastly, the explanatory strength of bank-specific characteristics for explaining the financial performance of Nepalese commercial banks is assessed using the causal comparative study methodology. Return on assets (ROA), a measure of the financial performance of Nepalese commercial banks, was employed in this research as the dependent variable. Finding out how certain bank-specific variables affect Nepalese commercial banks' financial performance is the goal of this research. Consequently.

Explanatory factors unique to banks were included in this research; these variables were quantified by operational efficiency (OE), credit risk (CR), liquidity (LIQ), asset quality (AQ), and managerial efficiency (ME). This article examines the effects of bank-specific variables on the financial performance of commercial banks in Nepal. Return on assets (ROA) is a metric used to evaluate financial performance. Similar to this, bank-specific elements are proxied by managerial efficiency (ME), liquidity (LIQ), credit risk (CR), assets quality (AQ), and operational efficiency (OE). Panel data from 17 commercial banks covering the years 2010–11–2017–18 were utilized in this research. The Hausman test determined that the Fixed Effect model is more suitable than the Random Effect model, while the Breusch and Pagan Lagrangian multiplier test demonstrated that the Pooled Regression model is not acceptable. This research found that bank-specific characteristics significantly affect the financial performance of Nepalese commercial banks using the Fixed Effect model. In conclusion, this research indicates that although CR has a detrimental effect on the financial performance of Nepalese commercial banks, ME, AQ, and OE have a considerable beneficial influence. The research suggested that NABIL, HBL, and SCBNL had extremely high C.V.s for liquidity ratios. Therefore, it is important to maintain these institutions' constant liquidity positions in terms of quick ratio and liquidity ratio. Additionally, NABIL, HBL, and SCBNL have poor EPS. Therefore, this research is recommended to improve their EPS. When it comes to sustaining the EPS, HBL is more reliable. Throughout the last six years, NABIL has fluctuated more than any other bank.

Kishore's (2018) researched on comparative comparison of investment trends in Indian public and private sector banks. The research intends to assess the investment pattern of Indian banks in terms of several elements viz. percentage of loans and investments to total assets, including local and foreign. Exposure to government securities, credit and investment deposit ratios, etc. The Reserve Bank of India website has statistical tables on Indian banks, which provided secondary data for the research. In order to conduct an analysis, investment data from seven private sector banks and all public sector banks was extracted from RBI Statistical Tables pertaining to Indian banks. These data were then converted into reflective tables, which allowed for an examination of the trends in the investment patterns of Indian banks across a range of sectors. For financial gain, banks

mobilize deposits and use them for lending and investing operations. Regulations in India mandate that banks invest a significant amount of their capital in designated securities in order to comply with the Statutory Liquidity Ratio (SLR) requirements. As part of their treasury operations or in other contexts, banks also invest their assets in non-SLR securities, taking into account their total asset composition, business requirements, skills, and experience. The Reserve Bank of India (RBI), the country's banking regulator, has established regulatory standards for both SLR and non-SLR investments, which are stated in the banks' annual reports. Banks invest in appropriate amounts in both local and foreign markets. The non-SLR investments are made in a range of instruments and reported in relation to issuer-specific information. They are also made in securities via private placements, unrated securities, instruments that are below investment grade, unlisted securities, and other means. The article examines the intricacies of Indian banks' investing patterns in both the public and private sectors. Disclosures made by banks in these categories have an impact on the risk factor of the assets in question and the reliability of the banks' judgment in making investment choices.

Shawnm and Aziz (2018) conducted an empirical investigation on the agricultural sectors in the Kurdistan area to examine the impact of commercial banks' lending on the growth of agricultural investment. The goal of this study was to evaluate how loans from commercial banks affected Kurdistan's agricultural growth. The goal of this study is to look at how loan from commercial banks affects the growth of agriculture in Erbil. The survey was split into two portions. The first segment asked questions about the respondent's demographics, beginning with age and gender. In the second section of the questionnaire, there were sixteen questions on loans from commercial banks and sixteen questions about Kurdistan's agricultural growth. Every employee has an equal chance of being chosen for the sample since a random sampling procedure was used. The research was done in Erbil. Out of the 180 questionnaires sent, only 144 were correctly completed by the researchers. The combined action of commercial banks credit to the agricultural sector, agricultural credit guarantee loan by purpose, is shown by the statistical calculation, analysis, and test results. Prices of agricultural goods and government funding for the agricultural sector are two important variables that might affect Kurdistan's agricultural output. The results showed that commercial bank loans had a favorable and considerable impact on Kurdistan's

agricultural development. Agricultural production has increased significantly as a result of government funding for the industry. The productivity of agriculture has not significantly improved as a result of agricultural product prices. The paper *Commercial Banks Profitability Indicators: Empirical Evidence from Latvia* was written by Jana and Lace (2018). The current article's goal is to ascertain how the external and internal components of bank performance affected the Latvian commercial banks' profitability measures between 2006 and 2011. The authors used descriptive methods, data correlation, regression analysis, and SPSS data analysis techniques to perform a study of scientific literature and examine commercial banks' profitability indicators. Based on the results obtained, the authors have concluded that profitability has a positive impact on portfolio composition, management, and operational efficiency, but has a negative impact on capital and credit risks as measured by ROA, while ROE shows a positive influence on capital portfolio composition and a negative impact on credit risk and operational efficiency. The authors' findings on macroeconomic variables indicate that GDP positively affects profitability as shown by ROA and ROE. The current study's technique may be utilized to analyze the performance indicators of many banks as well as identify profitability indicators specific to a single commercial bank. Through the course of this study, the authors have gathered empirical data about the link between macroeconomic and microeconomic variables and how such relationships affect the profitability indicators of commercial banks in Latvia. An efficient banking system in Latvia is one of the most crucial prerequisites for economic growth. The nation has constructed a state-of-the-art two-tier banking system in recent years.

Pallavi and Saluja (2017) researched on the profitability analysis of India's scheduled commercial banks. The goals of the research are to analyze scheduled commercial banks' profitability and look at patterns in their profitability. The study's foundation is analytical in character. The study's time frame is from 2010–11 to 2014–15. The research discovered that in order to strengthen banks' financial stability, profitability in the banking industry must be measured. The productivity metrics of net profit as a percentage of working funds, operational profit as a percentage of working funds, net profit as a percentage of total deposit, and net profit as a percentage of total revenue are used in this paper's analysis of profitability. The research spans the years 200102 to 201415. The study comes to the

conclusion that, in terms of net profit as a proportion of total revenue, net profit to working fund is preferable over operational profit to working fund. A rise in the ratio indicates a rise in bank profitability. A set of financial measurements known as profitability ratios is used to evaluate a company's capacity to turn a profit in relation to its expenditures and other pertinent expenses spent over a certain time frame. For the majority of these ratios, the firm is doing well if its value is greater than that of its competitors' ratios or higher than the same ratio from a prior time.

Sapto et al. (2015) researched on market concentration, market share, and profitability was undertaken in 2015 by. With the use of concentration ratios and individual market shares via the credit and deposit markets, the goal of this study was to investigate how market structure affects the performance of Indonesian commercial banks. Using purposive selection, 101 banks were selected among 120 banks between 2001 and 2012 to serve as study samples. Panel data regression is employed in this study because it employs a data panel that includes time series and cross-section data. Our conclusion from the panel data analysis is that the concentration ratio of the deposits market has a noteworthy and positive impact on return on assets (ROA); in contrast, the concentration ratio of the credits market, individual market share of the credits market, and the individual market share of the deposits market do not significantly affect ROA. Indonesian banks' overall assets, deposits, and loans demonstrate a notable improvement. Despite the fact that credit distribution in Indonesian banking is still suboptimal—credits are still less than deposits—LDR tended to increase from 40% in 2001 to 84% in 2012. The increase in LDR indicates that banks are becoming more successful in raising money for society. Effective asset and liability management is the reason for this economic system's success in carrying out the intermediation role.

Kaur and Manik (2012) conducted a comparative analysis of Indian banks' investment patterns over the worldwide period. In order to fulfill the study's aims, the Indian banking sector has been chosen as its focus, and four bank groups—public sector banks, old private sector banks, new private sector banks, and foreign banks—have been examined. Both the industry and bank group levels of data are evaluated. The investment deposit ratio, return on investment, total amount invested both within and outside of India, percentage of

interest income in total income, and non-approved investments are all included when analyzing the investment pattern. The study is descriptive in nature and uses secondary data from RBI papers on the trends and advancements in Indian banking. The research spans a ten-year period between 2001 and 2011. The average, standard deviations, coefficient of variations, growth, and correlation coefficient are among the statistical methods used. India was first affected by the globalization waves in 1991, considerably later than China and other south Asian nations. Numerous experts advised numerous economic changes since the country was a newcomer to globalization. The globalization period saw these changes transform the Indian economy, which is now doing rather well. The country's robust banking sector has also played a significant role in the economy's recovery from the crisis. The Indian banking sector directly affects the economy in a number of ways, including increased return on capital, reduced non-performing assets, deregulation of interest rates, and many more. Of all the investing aspects, this is one that has to be carefully examined. by considering how important investments are. The investment strategy of Indian banks is examined in this study. Return on investment, interest income, investment deposit ratio, and non-approved investments are all taken into consideration when analyzing the investment pattern. The figures show that although investment is growing in India, it is not growing in line with deposits, and returns are also declining. This article sheds light on the challenges and opportunities surrounding bank investments in the context of globalization.

Jha and Hui (2012) conducted a research comparing the financial performance of commercial banks. The study included a case study of Nepal covering the years 2005-2010. This research aimed to determine the performance drivers revealed by the financial ratios, which were based on the camel model, and to evaluate the financial performance of various ownership structured commercial banks in Nepal based on their financial features. The findings indicate that although local private banks are just as efficient as foreign-owned banks, public sector banks are much less efficient than their counterparts. Additionally, the estimate result shows that capital adequacy ratio had a big impact on return on equity, but it had little effect on return on assets. Interest expenditures to the total loan and net interest margin also had a substantial impact.

Review of Nepalese Studies

Panta (2022) conducted research on Nepalese commercial banks' investment patterns and liquidity management. The study's primary goals were to compare and analyze SBL and NIBL's liquidity situation and investment management procedures, as well as to determine the relationship between loans, advances, and total deposits. Secondary data were employed in the research. The research design utilized was descriptive. Financial and statistical techniques were employed in the investigation. Out of the 28 commercial banks, two were selected as a sample. A purposeful sampling strategy was used. The study discovered that there has been a rising tendency in the overall deposit of SBL and NIBL during the given time. The relationship between total deposit and loans and advances is very favorable for each of them. The higher slope of the loan and advance trend lines for both institutions indicates a rise in the amount of loans and advances disbursed. According to the study's findings, insufficient liquidity is one of the earliest indicators that a bank is having problems, making it an ongoing challenge for bank management that will have a big influence on the profitability of the institution. According to the survey, all of the sample banks were advised to focus more on their performance. keeping the asset quality, company growth rate, liquidity, and governance procedures constant. In addition to this, factors including corporate social responsibility, varied services, and market reputation should be considered. It would not only benefit the bank but also serve as a crucial criterion for the bank to be recognized as one of the finest in the country.

Khanal (2021) conducted a comparative analysis of Everest Bank Ltd. and Himalayan Bank Ltd.'s investment patterns and liquidity management. The study's primary goals were to get a thorough understanding of the liquidity management practices of the aforementioned institutions and to assess how well loans were disbursed and recovered. Secondary data were employed in the research. The research design utilized was descriptive. Financial and statistical techniques were employed in the investigation. Out of all commercial banks, two were selected as a sample. The convenient sampling approach was used. According to the research, HBL is more successful at making use of its total deposits by making investments in marketable assets, while EBL is more effective at using outside capital to give loans to profit-generating industries. Although HBL seems to be

profitable in making large profits on loans and advances, the return has not been steady. Neither bank seems to perform well in order to get fair returns from these loans, as seen by the tiny mean returns on their advances and loans. According to the study's findings, EBL's total liquidity situation is superior than HBL's since it can satisfy its short-term commitments. The research suggested that EBL raise its capital ratio in order to boost profitability even if its capital ratio is now lower than that of HBL Bank and that sample bank coefficients should remain constant in the following year.

Pandey (2020) executed a research on the execution of Nepal Rastra Bank instructions and their effects on commercial banks' investment patterns, using Himalayan Bank Limited as a case study. The primary goals were to ascertain whether or not the NRB directives were implemented and to ascertain the effect of the directive changes on the commercial banks' performance. Secondary data were employed in the research. The research design utilized was descriptive. Financial and statistical techniques were employed in the investigation. Since the directives are the sole instrument available to the NRB for overseeing and monitoring financial institutions, the research discovered that improperly handled directives had the ability to completely devastate the nation's financial sector. Unless correctly executed, the instructions are not very significant in and of themselves. The commercial banks control the implementation portion. Commercial banks would merit recognition if they were producing such enormous profits while adhering to all NRB regulations since they would then play a crucial role in the nation's economic progress. The bank was impacted by every modification to the NRB guidelines, and the following outcomes emerged: The bank's operating costs rise as a result of an increase in its operational processes. A brief decline in profitability results in lower employee bonuses and dividend payments to shareholders. Reduction in the bank's loan exposure, which raises depositor money protection but lowers interest revenue. The analysis came to the conclusion that stricter loan-related documentation and higher capital adequacy ratios would improve depositor money protection. By forgoing dividends for loan loss provisions and various other reserves to boost the core capital, banks may raise the need for shareholder contributions. The research concluded that market capitalization and return on assets are positively correlated. Therefore, banks that are prepared to enhance their return on assets need to augment their market capitalization. The research found that return on

assets and liquidity had a negative connection. Thus. Banks that are eager to boost their return on assets need to reduce their liquidity.

Karki (2019) conducted research on the investment patterns and profitability status of Nepal's commercial banks. The study's primary goals were to determine the ROA of the sample banks and assess the profitability and liquidity status of Nepal's commercial banks. Secondary data were employed in the research. The research design utilized was descriptive. Financial and statistical techniques were employed in the investigation. The analysis discovered that although SCBNL maintained the greatest liquid asset, NABIL had the best liquidity position when it came to CRR and current ratio. Furthermore, because of its greatest ROA, NABIL was the most effective in maximizing the mobilization of assets. The analysis found that there was a positive correlation between cash and bank balance and net profit, with the exception of HBL. The research suggested that NABIL, HBL, and SCBNL had extremely high C.V.s for liquidity ratios. Therefore, it is important to maintain these institutions' constant liquidity positions in terms of quick ratio and liquidity ratio. Additionally, NABIL, HBL, and SCBNL have poor EPS. Therefore, this research is recommended to improve their EPS. When it comes to sustaining the EPS, HBL is more reliable. Throughout the last six years, NABIL has fluctuated more than any other bank.

Khadka (2018) researched on a comparative analysis of commercial banks' investment policies. Determining the connection between deposits, investments, loans, advances, and net profit was the primary goal. Secondary data were employed in the research. The research design utilized was descriptive. Financial and statistical techniques were employed in the investigation. Out of the 28 commercial banks, two were selected as a sample. A purposeful sampling strategy was used. When comparing NBL's performance to that of NABIL, SCBNL, and NIBL, the research discovered that NBL performs less well than other commercial banks in both on- and off-balance sheet activities. It was expected that it would fall behind in the competitive banking industry in the future days if it could not organize and use its resources as effectively as other CBS to optimize the profits. According to the study's findings, NBL's profitability situations are much poorer than those of other commercial banks. It was determined that if NBL is unable to grow its volume even in the future, it would not be able to retain the trust of its customers, depositors, and

shareholders. The research suggested that sample banks' investment ratios be low and their coefficients of variance be more variable. Thus, these banks should raise their investment ratio as greater investment ratios translate into better profitability. They need to continue using the same investment ratio. Joshi (2017) conducted research on Nepalese commercial banks' investment structure and financial data. The financial results of several ownership structures of Nepali commercial banks were compared in the research. The study's primary goals were to assess the degree of risk in the banking sector, look into the interest income and payment status of a few chosen banks based on their financial profiles, and pinpoint the performance factors that the financial ratios disclosed. Secondary data were employed in the research. Both analytical and descriptive research approaches were used. Regression modeling served as the study's foundation. Financial data for eighteen commercial banks was studied from 2005 to 2012. According to the findings, local private banks are just as efficient as jointly owned overseas banks, while public sector banks are much less efficient than their counterparts. Additionally, the estimate findings showed that although capital adequacy ratio and credit deposit ratio had a significant impact on return on equity, capital adequacy ratio, interest expenditures to total loan, and net interest margin had a substantial impact on return on assets.

Table 1

Summary of Literature Review

Article Title	Writers	Objectives	Methodology	Findings
Does Investment Structure Matter in the Nexus Between Income Diversification and Financial Performance in COMESA Region?	Kitpur (2023)	Examine whether investment structure` moderates the relationship between income diversification and financial performance of commercial banks in COMESA region.	Positive paradigm, explanatory design, data from 31 commercial banks in Kenya.	Income diversification positively affects financial performance, while investment structure negatively affects it. Interaction between investment structure and income diversification also negatively

Working Financial Market Changing Investment Behavior and Pattern	of Singh (2022)	Study the role of the Indian financial market post-COVID-19 and the investment behavior and pattern in the stock market.	Descriptive statistics, correlation coefficient, panel data regression model.	impacts financial performance. Financial market heavily affected by COVID-19; reduction in investments due to decreased household income and emergency cash retention. Investors shifting towards diversified portfolios and long-term returns.
Study of Saving and Investment Pattern on Sample Farms Households	Singh & Sing (2021)	Examine saving and investment patterns of different farm sample groups and the relationship between saving and investment.	Positivist paradigm, explanatory design, data from 2014-2016.	Large farm holders save more than small farmers. Priority investments in irrigation, milch animals, farm buildings, and land improvements. Highest working capital on hired labor, manure, fertilizers, and power tractors. Bank profitability (ROA) significantly affected by GDP growth, inflation, exchange rate, not internal factors. NIM affected by capital adequacy, branches, and inflation.
Profitability Determinants of Nepalese Commercial Banks	Neupane (2020)	Examine key determinants of profitability in Nepalese commercial banks.	Descriptive statistics, correlation coefficient.	Bank profitability (ROA) significantly affected by GDP growth, inflation, exchange rate, not internal factors. NIM affected by capital adequacy, branches, and inflation.

Determinants of Financial Performance of Nepalese Commercial Banks: Evidence from Panel Data Approach	Shrestha (2019)	Identify determinants of financial performance of Nepalese commercial banks.	Descriptive, correlation, and causal comparative research design.	Bank-specific factors significantly impact financial performance. ME, AQ, and OE positively impact, CR negatively impacts financial performance.
A Comparative Analysis of Investment Patterns in Indian Public and Private Sector Banks	Kishore (2018)	Analyze investment patterns in Indian banks, focusing on domestic and international investments, credit-deposit ratio, and government securities.	Secondary data from RBI, descriptive analysis.	Banks invest in specified securities for SLR and non-SLR purposes, regulated by RBI. Investments are in domestic and overseas markets.
The Effect of Commercial Banks Credit on Agricultural Investment Development: An Empirical Study on Agricultural Sectors in Kurdistan Region	Shawnm & Aziz (2018)	Investigate the impact of commercial banks' credit on agricultural development in Erbil.	Random sampling, 180 distributed questionnaires, 144 completed.	Commercial banks' credit positively influences agricultural development. Government financial allocation significantly boosts agricultural productivity.
Commercial Profitability Banks Empirical Indicators: Evidence from Latvia	Jana & Lace (2018)	Determine the impact of external and internal factors on profitability indicators of Latvian commercial banks.	Literature survey, SPSS data analysis, correlation, regression analysis.	GDP positively impacts profitability (ROA and ROE). Profitability positively affects operational efficiency and negatively impacts capital and credit risks.

Profitability Analysis of Scheduled Commercial Banks in India	Pallavi Saluja (2017)	&	Analyze profitability trends of scheduled commercial banks in India.	Correlation and regression analysis.	Profitability measurement is crucial for financial soundness. Efficiency evaluation necessary for banks.
Financial Execution of the Ten Commercial Banks Working in Pakistan	Ishaq, Karim, Ahmed Zaheer (2016)	&	Evaluate financial performance ratios, asset quality, and liquidity of banks.	Quantitative data, descriptive research design.	Negative correlation between performance and ratios like total deposit to equity, non-performing loans to gross advances, etc.
Study on Market Concentration, Market Share, and Profitability in Indonesia	Sapto, Noer, Achsani, Hakim & Muhamad (2015)	&	Examine market structure's influence on Indonesian commercial banking performance.	Descriptive and analytical research designs.	Deposit market concentration positively influences ROA; other factors have no significant effects.
Bank Performance in Malaysia	Muhammad & Hasim (2015)	&	Evaluate performance of domestic and foreign banks in Malaysia.	Descriptive and analytical designs, regression analysis.	Both bank types performed well, with Sharjah Bank having higher liquidity, profitability, management capacity, and capital structure.
Soundness of Islamic Banks in the GCC for the Period 2008 to 2014	Kumar Sayani (2015)	&	Evaluate CAMEL ratio, asset quality, and liquidity of Islamic banks in the GCC.	Secondary data, interviews, qualitative research.	Islamic banks have adequate capital but deteriorating asset quality and earnings.
Financial Performance of Commercial Banks in Ethiopia Using	Gatahun (2015)	&	Evaluate banks' performance using CAMEL ratio analysis, asset quality, and liquidity.	Descriptive and analytical designs, annual data from 14 banks.	Risk management is crucial but insufficient alone. Separate management

CAMEL Approach Financial Performance of Commercial Banks in the Kingdom of Saudi Arabia	Saif (2014)	Investigate financial performance of Saudi commercial banks from 2000 to 2013.	Action research, mixed methods design.	needed for banking risk. AQ negatively impacts ROE; other determinants positively impact NIM.
Financial Performance of the Two Top Banks of Bangladesh	Mohiuddin (2014)	Evaluate financial ratios, asset quality, and liquidity of top Bangladeshi banks.	Secondary data from annual reports.	Banks show sustainable growth in branches, employees, deposits, loans, and earnings.
Performance & Financial Soundness of State Bank Group Using CAMEL Approach	Misra & Aspal (2013)	Evaluate CAMEL analysis, asset quality, and liquidity of banks.	Secondary data from research.	SBBJ and SBP rank top in capital adequacy; SBI ranks lowest in asset quality.
A Comparative Study on Investment Pattern of Indian Banking in the Global Era	Kumar & Manik (2012)	Analyze investment parameters and return on investment in Indian and overseas banks.	Descriptive study, secondary data from RBI reports.	Investment in India is increasing but not proportionate to deposits. Returns are also lesser.

2.3 Research Gap

Numerous studies have been done on the subject of financial performance and how Nepali commercial banks perform, as well as how joint ventures and private sector banks and other financial institutions perform. However, certain aspects of the analysis regarding NABIL, NIBL Bank Limited, and NIC Asia Bank Limited are still unexplored. By expanding the problem to the particular setting of the banks, the researchers attempt to address this gap in the data. The influence on operational efficiency and the particular issue that banks confront are no longer fully explained because of the competing effects of investment, particularly in commercial banks. In order to arrive at an appropriate conclusion, this study is borderline and aims to examine their tendencies using statistical and financial instruments. Previous studies' samples were limited to well-known commercial banks;

however, this study's sample includes both public and private sector banks. This thus represents the study's research gap. Because the earlier research served as the basis for the current study, it is thus impossible to disregard them. Stated differently, research continuity is guaranteed by establishing a connection between the current study and previous research endeavors. It is evident from this that the few studies conducted have been on related subjects. Thus, this study is chosen to close this gap. Numerous books, journals, papers, and both published and unpublished theses were consulted in order to facilitate and ease the completion of this research project. In this context, the researcher will use loans and advances from NABIL, NIBL, and NIC Asia Bank Limited to examine the investment patterns and performance assessments of Nepalese commercial banks. Several statistical and financial approaches are used to meet these goals. As a result, this research is beneficial to many people and the concerned banks. such as state governments, investors, shareholders, and policy makers, among others.

CHAPTER-III

RESEARCH METHODOLOGY

Research as the name implies means to search or study about a phenomenon. It is a repeated action to find or investigate something in a scientific manner. It seeks to find out facts about non-performing loan and relationships by defining and redefining problems, collecting, organizing and evaluating data, making deductions and conclusions to determine whether they fit the formulated hypothesis (Adhikari, 2018).

3.1 Research Design

This study adopts a research design that integrates descriptive and causal comparative to effectively address its objectives. The descriptive component provides a comprehensive overview and analysis of the characteristics and behaviors of variables pertinent to the study, such as financial performance indicators of Nepalese commercial banks. This approach is crucial in establishing a foundational understanding of the current state and trends within the banking sector. Concurrently, the causal aspect of the design aims to elucidate causal relationships among variables, thereby exploring the impact of various factors on financial performance metrics. By employing this combined approach, the study ensures a systematic and rigorous investigation, facilitating robust data collection, analysis, and interpretation aligned with its research objectives.

3.2 Population, Sample and Sampling Procedure

The allocation of a sample size of five banks out of the total 20 commercial banks in Nepal was determined to ensure the study's feasibility while maintaining a representative cross-section of the sector. Stratified sampling was employed to capture the diversity in ownership structures, thus reflecting the broader spectrum of the banking industry. By selecting Agricultural Development Bank Limited (ADBL), Sanima Bank Limited (SBL), NIC Asia Bank Limited (NIC), Nepal SBI Bank Limited (NSBI), and Nabil Bank Limited (NABIL), the study incorporates perspectives from government-owned, privately-owned, and joint-venture banks. This stratification ensures that the sample is comprehensive

enough to provide meaningful insights into the factors influencing financial performance while remaining manageable in terms of data collection and analysis.

The sampling process began by categorizing the 20 commercial banks into strata based on their ownership structures: joint venture, private ownership, and government ownership. Within each stratum, banks were selected to ensure proportional representation. This stratified sampling method enhances the validity and reliability of the study findings by ensuring that the sample accurately reflects the diversity within the population of Nepalese commercial banks. Consequently, a sample of five banks was chosen to provide a balanced and comprehensive analysis, facilitating a thorough examination of the financial performance across different types of banks in Nepal.

3.3 Sources of Data

This study exclusively utilizes secondary sources of data to explore the financial performance of Nepalese commercial banks. Secondary data encompasses information that has been previously collected and analyzed by other researchers or organizations, making it readily available for further investigation. For this research, primary sources of secondary data include the annual reports, Balance Sheets, Profit and Loss Accounts, and other financial statements obtained from the selected banks. Additionally, data are sourced from publications by the stock exchange board and Nepal Rastra Bank. These sources offer comprehensive and reliable datasets crucial for analyzing the factors influencing the financial performance of commercial banks in Nepal.

3.4 Data Collection Procedures

The collection of secondary data for this study involves gathering information from various financial documents and official publications. Annual reports of the commercial banks are obtained directly from their respective head offices and official websites. These reports provide detailed insights into the banks' financial health, including their asset-liability management, profitability ratios, and operational efficiency. Balance Sheets and Profit and Loss Accounts are scrutinized to assess the banks' financial position over the study period, which spans from the fiscal year 2013/14 to 2022/23. Additionally, publications from the stock exchange board and Nepal Rastra Bank contribute essential data on market dynamics

and regulatory insights. By employing these robust data sources, this study ensures a thorough analysis of the factors influencing the financial performance of Nepalese commercial banks, aligning closely with its research objectives.

3.5 Methods of Analysis

For the analysis of the data, the financial and statistical tools relevant to the topic are used.

1) Statistical Tools

3.5.1 Descriptive Statistical Tools

Finding the trend in the sample banks' financial situation is made easier with the use of descriptive statistical methods. Additionally, it examines the connections between variables and supports banks in making wise choices that advance the objectives of the firm. In this study, descriptive analytical methods including variance, standard deviation, and mean (arithmetic) have been used.

A) Average/ Mean

A collection of observations' arithmetic mean is calculated by dividing their sum by the total number of observations (Elhance & Agarwal, 2000). Generally speaking, if N observations are presented as X₁, X₂,... X_n, then their arithmetic mean, shown by, is provided by,

$$\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{N} = \frac{\sum X}{N}$$

Where,

$\sum X$ = Sum of the observations, and

N = Number of Years

B) Standard Deviation

The square root of the total squares of the departures from the mean, measured in deviations, is the standard deviation. As a result, in order to compute the standard deviation, the arithmetic average must first be determined, and then the deviations of each item from the average must be squared. After adding up all of the squared deviations, divide the total

by the total number of elements. The standard deviation of the series may be found by taking the square root of the resultant value (Elhance & Agarwal, 2000). The standard deviation is often represented by the Greek symbol sigma. The standard deviation of a collection of N observations, denoted by X_1, X_2, \dots, X_n , may be found using

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

$\sum (X - \bar{X})^2$ = Sum of the squares of the deviations measured from mean
 N = Number of Observations.

C) Coefficient of Variation (C.V.)

To compare the variability of two distributions, the coefficient of variation is calculated. A distribution with a lower coefficient of variation (C.V.) is considered more homogenous, uniform, or less variable than the other, whereas a higher C.V. series is considered more heterogeneous or variable than the other. It is calculated as follows.

$$C.V. = \frac{\sigma}{X} \times 100\%$$

3.5.2 Inferential Statistical Tools

Inferential analysis focuses on estimating or hypothesis testing by utilizing the sample alone to draw conclusions about the population, as contrast to data description, which focuses on characterizing the sample data. Formally speaking, this procedure is called inferential statistics. Parametric tests including multiple regression analysis and correlation analysis have been included in this study.

A) Coefficient of Correlation

A statistical tool for examining the link between two variables is correlation analysis, which includes a number of methodologies and approaches for determining the strength of the association between the two variables. Understanding the strength and direction of the link between the two variables under investigation is made possible by correlation analysis.

It does not, however, consider the cause-and-effect connection between the variables. The following formula is used to calculate the correlation coefficient, or r:

$$r = \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}}$$

B) Regression Analysis

The method of examining the relationship between variations in one series and variations in another is called regression analysis. It ascertains the kind and intensity of the correlation between two variables. The estimate of unknown values or the prediction of one variable from the known values of other variables is, thus, known as regression.

The Regression Model 1,

$$ROA_{it} = \alpha_0 + \alpha_1 TI_{it} + \alpha_2 CAR_{it} + \alpha_3 NPLR_{it} + \alpha_4 CDR_{it} + \alpha_5 CRR_{it} + \varepsilon_{it}$$

$$ROE_{it} = \alpha_0 + \alpha_1 TI_{it} + \alpha_2 CAR_{it} + \alpha_3 NPLR_{it} + \alpha_4 CDR_{it} + \alpha_5 CRR_{it} + \varepsilon_{it}$$

Where,

α_0	=	Constant Value
$\alpha_1, \alpha_2, \alpha_3, \alpha_4, \alpha_5$	=	Coefficient of Independent Variables
ROA_{it}	=	Return on Assets during the period t,
ROE_{it}	=	Return on Equity during the period t,
TI_{it}	=	Total Investment during the period t,
CAR_{it}	=	Capital Adequacy Ratio during the period t,
$NPLR_{it}$	=	Non-performing Loan Ratio during the period t,
CDR_{it}	=	Credit Deposit Ratio during the period t,
CRR_{it}	=	Cash Reserve Ratio during the period t,
ε_{it}	=	Error Terms during the period t

2) Financial Tool

Ratio analysis is the process of comparing line items inside an organization. Ratio analysis methods have been used to assess several aspects of an organization, including operations. Since financial statements are an outsider's main source of knowledge about a company, this kind of analysis is very helpful to them. Corporate insiders have greater access to more

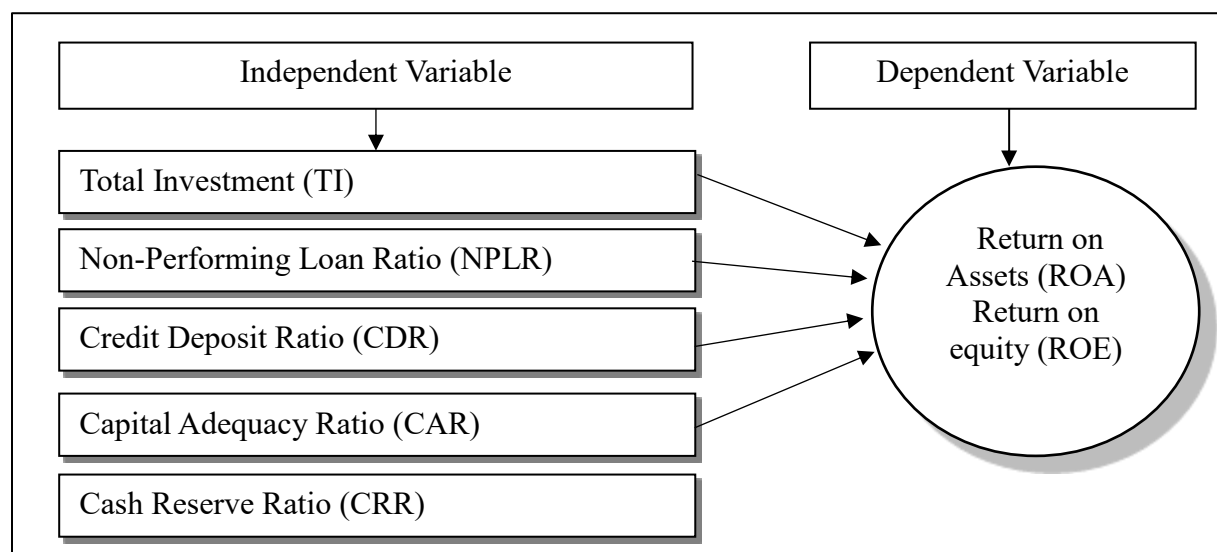
in-depth operational knowledge about the company, making ratio analysis less helpful to them.

Table 2

Measurements of Variables

Variables	Notion	Measure
Dependent Variable		
Return on Assets	ROA	Net income/ Total Assets
Return on Equity	ROE	Net income/ Shareholders' equity
Independent Variable		
Total Investment	TI	The total amount invested by banks in different sectors
Cash Reserve Ratio	CRR	Cash Reserve Ratio=25% of Total Reserve Requirements/Bank Deposit*100
Credit Deposit Ratio	CD	Total Credit / Total Deposit
Non-performing loan/Loan Ratio	NPA	Non-performing loan/Total amount of outstanding loans in banks
Capital Adequacy Ratio	CAR	Total Capital Fund Percentage

3.6 Research Framework and Definition of Variables



Source: Singh (2022) and Kitpur (2023)

Figure 1: *Research Framework*

Return on Assets (ROA)

Return on Assets (ROA), which is computed as net income divided by total assets, is a crucial financial number that assesses how well a business generates profit from its whole asset base (Choudhry, 2011). In addition to raising provisions for loan losses and decreasing net income, the existence of non-performing loans (NPLs), or loans that are past due by 90 days or more, negatively impacts ROA by inflating the asset base without producing revenue (Fabozzi & Kothari, 2007). High NPL levels are a sign of poor asset quality, which lowers profitability and efficiency and lowers return on assets acquired (ROA) (Choudhry, 2011).

Return on Equity=Net income/ Total assets*100

Return on Equity (ROE)

A company's profitability indicates how successfully it is creating value for its shareholders. It may be assessed using a variety of financial metrics, such as return on equity (ROE) or any well recognized market value ratio (Pandey, 2010). It speaks about the relationship between assets and net profit. The increase in the ratio indicates how well the business is using its assets (Robinson et al., 2015).

Return on Equity=Net income/ Total Equity*100

Total Investment (TI)

When it comes to commercial banks, total investment refers to the allocation of capital into a range of financial instruments, including loans, advances, and securities, with the goal of producing returns over a certain time frame (Barney, 1991; Kumar & Manik, 2012). By generating revenue in the form of interest, dividends, and capital gains, this allocation directly affects a bank's profitability (Fama, 1970; Malla, 2016). Because it affects income streams, asset quality, and overall financial stability, effective management of these investments is essential (Jana & Lace, 2018; Misra & Aspal, 2013). In order to improve their competitive stance and long-term profitability, banks must make strategic investment choices that are informed by thorough research and risk management techniques. (Shrestha, 2021; Singh & Singh, 2021).

Total Investment=Total amount invested in different sectors by banks

Non-performing Loan/Assets Ratio (NPLR)

The ratio of non-performing loans to assets (NPLR) indicates how creditworthy the bank is. It is seen as a sign of effective credit risk management. Because it specifies the ratio of loan losses to total loans, NPLR in particular shows how banks manage their credit risk (Hosna et al, 2009).

Non-performing loan/Loan Ratio = $\frac{\text{NPA}}{\text{Total amount of outstanding loans in banks}}$

Liquidity (Cash Reserve Ratio)

One of the control variables used to examine how credit risk affects banks' performance is the cash reserve ratio. The cash reserve ratio (CRR) has historically been one of the central bank's monetary instruments. The minimum percentage of all client deposits that commercial banks are required to retain as reserves with the central bank is known as the cash reserve ratio, or CRR. The central bank may regulate the quantity of liquidity by altering the CRR. Raising the reserve requirement will mean that banks have less money to lend out, which would decrease the money supply since it will effectively diminish the quantity of capital in the economy. It would limit the amount of money available for expenditure and investment, which would impede economic growth.

Cash Reserve Ratio: $\frac{\text{Reserve Requirements}}{\text{Bank Deposit}} \times 100$

Capital Adequacy Ratio

Capital adequacy was defined by Bonfim and Kim (2012) as the Tier 1 capital ratio, which is calculated by dividing core capital by total deposits. According to Ayele (2012), a bank's capital adequacy is a gauge of its financial health based on its capacity to provide liquidity and bear operating expenses. Adequate capital also signifies the bank's capacity to take on new business. Banks and other financial institutions have financial flexibility based on their capital size. According to Ongore and Kasu (2013), the capital adequacy ratio demonstrates the bank's internal resilience to losses during a crisis.

In examining the relationship between capital and bank performance in times of financial crisis, Berger and Bouwman (2013) discovered a strong correlation and influence of capital on bank profitability. Gropp and Heider (2010) assert that there is a direct correlation between the profitability of the local banks and the amount of core capital kept. Berlin and Mester (1999) came to the conclusion that historically, the bank funding costs have been protected against economic shocks by core deposits like demand and savings deposits, which are mostly inelastic. Ratnovski and Huang (2009) discovered that Canadian banks fared better during the 2008 financial crisis than other major commercial banks in OECD nations because they depended more on depository financing than the other banks, which relied more on wholesale funding. A parallel research carried out in Kenya by Ochung (1999) found a very substantial relationship between commercial banks' and financial institutions' deposits and individual performance. At least 11% of the bank's total assets should be held by the institution, which may include stated reserves.

Capital Adequacy Ratio=Total Capital Fund Percentage (Tier 1 + Tier 2 capital)

Credit Deposit Ratio

It is the proportion of loans made by a bank to the amount of deposits it has raised. It shows the percentage of a bank's core funds allocated to lending, which is the primary function of a bank. More dependence on deposits for lending is indicated by a larger ratio, and vice versa.

Credit Deposit Ratio=Total Credit / Total Deposit*100

CHAPTER-IV

RESULTS AND DISCUSSION

4.1 Results

Examining and interpreting the data acquired for the research is the aim of this chapter. The research has used a range of statistical approaches, as outlined in chapter three, to accomplish its objectives. The fourth chapter provides, evaluates, and analyzes secondary data in a methodical way to address a number of concerns pertaining to the effect of credit risk on the profitability of Nepalese Commercial Banks.

4.1.1 Descriptive Analysis

The descriptive statistical analyzes sample banks including ADBL, NSBI, NABIL, SBL, and NIC using descriptive statistical methods like mean, standard deviation, and coefficient of variation.

Table 3

Status of Capital Adequacy Ratio

Year/CAR	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	15.09	13.28	14.05	12.54	11.18
2014/15	13.99	14.03	12.49	11.08	11.57
2015/16	17.18	13.49	12.44	12.36	11.73
2016/17	20.41	15.71	13.83	15.57	12.90
2017/18	20.33	15.15	12.24	12.41	13.00
2018/19	20.37	14.12	13.32	13.19	12.50
2019/20	19.33	15.55	13.50	13.00	13.07
2020/21	16.94	13.86	12.47	13.57	10.67
2021/22	15.59	13.25	13.38	13.66	10.77
2022/23	14.24	12.58	13.36	14.42	12.54
Mean	17.35	14.10	13.11	13.18	11.99
SD	2.60	1.05	0.64	1.24	0.93
CV (%)	14.96	7.45	4.91	9.38	7.72

Source: Annual Reports

Table 3 shows the current CAR status for the following five banks: Nabil Bank Limited (NABIL), NIC Asia Bank (NIC), Sanima Bank (SANIMA), Agricultural Development Bank Limited (ADBL), and Nepal SBI Bank Limited (NSBI). Included in the table are each bank's mean coefficient of variation (CV), standard deviation (SD), and CAR. The average capital adequacy ratio (MCAP) of these banks is 17.35%, with ADBL having the highest, followed by NSBI (14.10%), NIC (13.11%), SANIMA (13.18%), and NABIL (11.9%). The coefficient of variation (CV) and standard deviation (SD) provide light on the CARs' relative volatility and variability. While NIC has the lowest SD at 0.64, showing higher stability, ADBL displays the greatest SD at 2.60, indicating greater variation in its CAR throughout the studied time. According to the CV, which normalizes variability in relation to the mean, NIC has the lowest relative volatility (4.91%), followed by ADBL (14.96%), SANIMA (9.38%), NSBI (7.45%), and NABIL (7.72%).

Table 4

Status of Credit Deposit Ratio

Year/CDR	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	94.80	65.54	82.93	82.90	74.55
2014/15	93.77	78.39	81.03	83.97	64.43
2015/16	95.46	72.90	85.62	88.10	70.49
2016/17	92.90	78.07	83.70	89.03	65.38
2017/18	95.64	89.60	86.30	87.45	82.66
2018/19	93.62	90.52	84.55	90.42	81.96
2019/20	85.84	85.50	85.75	85.10	79.72
2020/21	92.93	95.58	87.58	94.10	89.84
2021/22	107.01	92.37	89.85	89.18	92.49
2022/23	91.56	81.42	86.17	83.8	84.19
Mean	94.35	82.99	85.35	87.41	78.57
SD	5.26	9.47	2.47	3.51	9.65
CV (%)	5.57	11.41	2.89	4.01	12.28

Source: Annual Reports

Tables 4 the CDR status for the following five banks: Nabil Bank Limited (NABIL), NIC Asia Bank (NIC), Sanima Bank (SANIMA), Agricultural Development Bank Limited

(ADBL), and Nepal SBI Bank Limited (NSBI). The mean CDR values show how often these banks lend money using the deposits they have on hand. With a mean CDR of 94.35%, ADBL has the greatest percentage of deposits devoted to loans, suggesting either a strong demand for credit among its clientele or an aggressive lending strategy. Following with mean CDRs of 87.41% and 85.35%, respectively, SANIMA and NIC exhibit comparable strong lending activity. The mean CDRs for NSBI and NABIL are lower, at 82.99% and 78.57%, respectively. This might be a sign of more cautious lending policies or larger liquidity buffers. The coefficient of variation (CV) and standard deviation (SD) provide further information on the consistency and stability of the CDRs. With the largest standard deviations (SDs) of 9.65 and 9.47, respectively, NABIL and NSBI had the most variation in their credit to deposit ratios over the research period. On the other hand, NIC has the lowest SD (2.47), indicating a lending pattern that is more steady. When these variances are normalized to their respective means using the CV values, it becomes clear that NIC has the lowest relative variability (2.89%), followed by SANIMA (4.01%), ADBL (5.57%), NSBI (11.41%), and NABIL (12.28%).

Table 5

Status of Cash Reserve Ratio

Year/CRR	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	30.43	9.32	28.68	26.68	11.32
2014/15	28.77	10.92	28.91	22.32	14.15
2015/16	23.33	8.33	23.79	24.24	6.77
2016/17	31.18	10.04	25.80	26.08	10.02
2017/18	29.15	7.18	24.45	24.72	10.05
2018/19	27.20	6.65	26.05	22.87	4.78
2019/20	33.98	8.89	27.09	24.01	11.20
2020/21	36.21	3.22	20.65	22.15	11.46
2021/22	25.96	3.05	20.30	27.07	4.13
2022/23	30.1	4.06	22.23	30.01	6.89
Mean	29.63	7.17	24.80	25.02	9.08
SD	3.73	2.86	3.07	2.47	3.26
CV (%)	12.60	39.95	12.39	9.87	35.95

Source: Annual Reports

Table 5 shows the current CRR status for the following five banks: Nabil Bank Limited (NABIL), NIC Asia Bank (NIC), Sanima Bank (SANIMA), Agricultural Development

Bank Limited (ADBL), and Nepal SBI Bank Limited (NSBI). The average proportion of total deposits that these banks hold as cash reserves is shown by the mean CRR figures. The company with the highest mean CRR, ADBL, is 29.63%. This indicates a significant liquidity buffer and may indicate a cautious approach to risk management or regulatory compliance. Following with mean CRRs of 25.02% and 24.80%, respectively, NIC and SANIMA indicate substantial reserve holdings. On the other hand, the mean CRRs for NSBI and NABIL are lower at 7.17% and 9.08%, respectively. This might suggest a more aggressive deployment of funds towards income-generating activities or a reduced necessity for liquidity.

The coefficient of variation (CV) and standard deviation (SD) provide light on the stability and variability of the CRRs. Even though ADBL has the greatest mean CRR, its comparatively high SD of 3.73 indicates significant variations in its cash reserve levels. With SDs of 2.47 and 3.07, respectively, NIC and SANIMA had lower values, indicating more steady resource management. The CV values, which indicate relative variability, show that reserve procedures are generally constant in SANIMA (9.87%), NIC (12.39%), and ADBL (12.60%). On the other hand, the CVs of NSBI and NABIL are much higher at 39.95% and 35.95%, respectively, indicating notable variations in their cash reserves.

Table 6

Non-performing Loan Ratio Status

Year/NPLR	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	5.46	0.26	2.33	0.02	2.13
2014/15	5.35	0.19	2.07	0.07	2.23
2015/16	4.36	0.14	0.76	0.02	1.82
2016/17	4.60	0.10	0.36	0.01	1.14
2017/18	3.50	0.20	0.06	0.30	0.55
2018/19	3.29	0.20	0.46	0.08	0.74
2019/20	2.84	0.23	0.75	0.45	0.98
2020/21	1.88	0.23	0.50	0.12	0.84
2021/22	2.09	0.15	0.53	0.33	1.63
2022/23	2.78	2.43	0.88	1.31	3.39
Mean	3.62	0.41	0.87	0.27	1.55
SD	1.28	0.71	0.74	0.40	0.88
CV (%)	35.34	171.99	85.11	146.36	56.74

Source: Annual Reports

Tables 6 provides the NPLR status for the following five banks: Nabil Bank Limited (NABIL), NIC Asia Bank (NIC), Sanima Bank (SANIMA), Agricultural Development Bank Limited (ADBL), and Nepal SBI Bank Limited (NSBI). The average percentage of non-performing loans to total loans, or mean NPLR values, provide a sense of each bank's credit quality and risk control.

With a mean NPLR of 3.62%, ADBL has the highest overall, indicating a comparatively greater degree of credit risk and possible difficulties with loan recovery. With a mean NPLR of 1.55%, NABIL comes in second, suggesting a minor amount of non-performing loans. With NSBI at 0.41%, NIC at 0.87%, and SANIMA at 0.27%, the other banks exhibit lower mean NPLRs, which is indicative of improved credit quality and more successful risk management techniques.

Understanding the stability and variability of the NPLRs is possible with the use of the standard deviation (SD) and coefficient of variation (CV). Even though ADBL's mean NPLR is the highest, its SD is 1.28, showing significant variations in its non-performing loans.

With SDs of 0.71 and 0.74, respectively, NSBI and NIC also show notable variability. With a 0.40 SD, SANIMA has the lowest overall, indicating more consistent loan performance. The standardization of variability with respect to the mean, or CV values, reveals notable variations in stability across the banks.

Despite a low mean NPLR, SANIMA has a high CV of 146.36%, suggesting significant relative volatility. With a CV of 171.99%, NSBI has the most variability in relation to its low mean NPLR. With Vs of 85.11% and 56.74%, respectively, NIC and NABIL exhibit considerable relative variability.

Despite having a high mean NPLR, ADBL's CV of 35.34% indicates that, in comparison to the other banks, its relative variations are more mild. These figures demonstrate that although certain banks continue to have low percentages of non-performing loans, their loan performance may fluctuate significantly, which may have an impact on the stability of the financial system as a whole.

Table 7*Total Investment Status*

Year/TI	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	63601346801.35	64337396008.40	719438094382.02	21943942446.04	2678270769230.77
2014/15	64461681818.18	61130243717.88	1311231308187.13	29284471232.88	2219239452054.79
2015/16	86947061064.43	59190440544.44	1355505555041.32	40260885677.42	3309361165048.54
2016/17	89597372413.79	83756788505.66	2417979265827.81	55962008089.89	2641602586206.90
2017/18	104139447069.77	135013359700.64	1815979199695.12	97568145451.61	2004179553903.35
2018/19	115840414228.78	102771643323.86	2616322651546.39	91776561939.46	1471779310344.83
2019/20	139561690801.44	118158848487.11	2537009267692.31	109079916612.56	2077923696682.46
2020/21	161586391943.55	131893523494.02	4113001011212.12	125965864241.14	2103230379746.83
2021/22	201343808222.64	137656879550.00	10545524190458.70	160955255037.50	1621921348314.61
2022/23	211153185197.78	153081281473.83	6707123132000.00	192045809636.70	1230240000000.00
Mean	123823239956.17	104699040480.59	3413911367604.30	92484286036.52	2135774826153.31
SD	53169146348.32	35445345296.90	3037958537297.14	56818292347.25	621922358734.37
CV (%)	42.94	33.85	88.99	61.44	29.12

Source: Annual Reports

Table 7 presents the total investment status of five banks (ADBL, NSBI, NIC, SANIMA, and NABIL) from the fiscal year 2013/14 to 2022/23. Each row corresponds to a fiscal year, listing the investment amounts in Nepali Rupees for each bank. The last three rows provide the mean, standard deviation (SD), and coefficient of variation (CV) for each bank over the given period. The data shows that NIC consistently had the highest investments, with a significant increase in 2021/22, reaching over 10 trillion. ADBL and NSBI's investments increased steadily, though at a much slower rate compared to NIC. SANIMA and NABIL displayed moderate growth, with NABIL showing a notable peak in 2015/16. The mean investments over the period were highest for NIC, followed by NABIL, while ADBL, NSBI, and SANIMA had lower averages. The coefficients of variation indicate that NIC had the highest variability in its investments, suggesting more significant fluctuations over the years, whereas NABIL had the lowest, indicating more stable investment trends.

The time series analysis of the data reveals distinct patterns and trends for each bank over the ten-year period. ADBL, NSBI, and SANIMA showed a relatively consistent upward trend in their total investments, although SANIMA's growth was more gradual. NIC, on

the other hand, experienced substantial increases, particularly after 2015/16, culminating in a dramatic surge in 2021/22, highlighting a potential strategic shift or substantial investment gain during this period. NABIL demonstrated variability with significant investment spikes in 2015/16 and 2019/20 but exhibited a decreasing trend post-2021.

Table 8

Return on Assets Status

Year/ROA	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	1.76	1.51	1.71	1.46	3.65
2014/15	3.57	1.80	1.21	1.55	2.06
2015/16	2.32	1.59	1.51	1.78	2.32
2016/17	2.15	1.57	1.64	1.86	2.69
2017/18	2.71	1.97	0.97	1.85	2.61
2018/19	2.77	1.94	1.56	2.07	2.11
2019/20	1.86	1.17	1.32	1.41	1.58
2020/21	1.59	0.70	1.09	1.44	1.78
2021/22	0.90	1.07	1.20	1.09	1.20
2022/23	0.5	1.09	1.31	1.21	1.42
Mean	2.01	1.44	1.35	1.57	2.14
SD	0.91	0.42	0.24	0.31	0.72
CV (%)	45.02	29.12	18.12	19.80	33.70

Source: Annual Reports

NIC Asia Bank (NIC), Sanima Bank (SANIMA), Agricultural Development Bank Limited (ADBL), Nepal SBI Bank Limited (NSBI), and Nabil Bank Limited (NABIL) are the five banks whose ROA status is shown in Table 8 and Figure 7. As a percentage of their total assets, these banks' mean ROA figures show how profitable they are generally. With a mean ROA of 2.14%, NABIL has the greatest ROA of any company, indicating robust asset use and profitability. With a mean ROA of 2.01%, ADBL comes in second, showing strong returns on its assets. With typical ROAs of 1.57%, 1.44%, and 1.35%, respectively, SANIMA, NSBI, and NIC exhibit comparatively lower nevertheless positive returns on their asset bases. These numbers show how profitable the banks are generally when it comes to making money off of their assets, with NABIL and ADBL doing best.

The coefficient of variation (CV) and standard deviation (SD) provide light on the stability and variability of the ROAs. With a standard deviation of 0.91, ADBL has the most

volatility in its return on assets throughout the studied duration. Moreover, NABIL has significant variability, with an SD of 0.72. NIC, on the other hand, has the lowest SD (0.24), indicating more steady and reliable profitability. The relative variability, or CV, data reveal that NIC has the lowest relative variability (18.12%), meaning that its ROA is the most stable when compared to its mean. Following with somewhat stable CVs of 19.80% and 29.12%, respectively, are SANIMA and NSBI. The CVs of ADBL (45.02%) and NABIL (33.70%) show more relative variability, indicating that while these banks generate higher average returns on assets, their profitability is more erratic.

Table 9

Return on Equity Status

Year/ROE	ADBL	NSBI	NIC	SANIMA	NABIL
2013/14	9.39	22.85	15.93	15.09	27.91
2014/15	16.65	21.51	13.05	18.19	22.73
2015/16	13.96	17.46	16.50	22.69	25.61
2016/17	11.69	14.85	16.84	14.39	22.41
2017/18	13.87	15.81	12.09	18.67	20.94
2018/19	14.74	16.20	22.73	23.20	17.76
2019/20	11.71	10.44	19.26	16.09	13.61
2020/21	10.16	6.26	17.09	18.57	15.19
2021/22	5.70	9.57	18.43	14.13	9.78
2022/23	7.79	10.77	16.39	15.54	11.66
Mean	11.57	14.57	16.83	17.66	18.76
SD	3.37	5.32	3.00	3.25	6.11
CV (%)	29.16	36.52	17.85	18.39	32.56

Source: Annual Reports

Tables 9 provides the ROE status for the following five banks: Nabil Bank Limited (NABIL), Sanima Bank (SANIMA), NIC Asia Bank (NIC), Agricultural Development Bank Limited (ADBL), and Nepal SBI Bank Limited (NSBI). The average profitability of these banks in relation to shareholders' equity is shown by the mean ROE values. With a mean ROE of 18.76%, NABIL has the highest ROE of any company, showing exceptional profitability and efficient use of equity capital. With typical ROEs of 17.66% and 16.83%, respectively, SANIMA and NIC come next, indicating strong returns on equity. While ADBL has the lowest mean ROE at 11.57%, NSBI has a mean ROE of 14.57%, suggesting somewhat lower but still significant returns. These numbers show how profitable and

efficient the banks are overall in producing returns for their owners, with NIC, SANIMA, and NABIL performing best overall.

The coefficient of variation (CV) and standard deviation (SD) provide light on the stability and variability of the ROEs. With an SD of 6.11, NABIL had the most variability in its return on equity over the study period. With an SD of 5.32, NSBI also exhibits a high degree of variability. NIC, on the other hand, has the lowest SD at 3.00, indicating more steady and reliable profitability. The relative variability, or CV, data show that NIC has the lowest relative variability (17.85%), meaning that its ROE is the most stable when compared to its mean. Following with a CV of 18.39%, SANIMA has a modest level of steadiness. With CVs of 29.16%, 36.52%, and 32.56% for ADBL, NSBI, and NABIL, respectively, these three variables exhibit larger relative variability. These figures indicate that NABIL's profitability is more variable than NIC and SANIMA's, which are more stable but have lower average returns on equity. However, NABIL does have the greatest average returns on equity. This suggests that although NABIL and NSBI have higher average returns, they also have more volatile profitability. In contrast, NIC and SANIMA provide stockholders more steady returns.

Table 10

Overall Descriptive Analysis

Variables	Minimum	Maximum	Mean	Std. Deviation
CAR	10.67	20.41	13.95	2.32
CRR	3.05	36.21	19.14	9.74
NPLR	0.01	5.46	1.34	1.48
CDR	64.43	107.01	85.73	8.35
TI	21943942446.04	10545524190458.70	1174138552046.1750	1917647777511.73830
ROA	0.50	3.65	1.70	0.64
ROE	5.70	27.91	15.88	4.94

Table 10 presents a comprehensive descriptive analysis of the major financial ratios for fifty observations. The total investment (TI) of the banks ranged from a minimum of NPR 21,943,942,446.04 to a maximum of NPR 10,545,524,190,458.70, with an average of NPR 1,174,138,552,046.18 and a standard deviation of NPR 1,917,647,777,511.74, indicating

substantial variability in investment levels across the observed period. The analysis includes both dependent and independent variables, including the ROE, CRR, NPLR, CDR, CAR, and CDR. CAR has a range of values from 10.67% to 20.41% at the lowest and maximum, with a mean of 13.95% and a standard deviation of 2.32.

This shows that the observed banks' capital adequacy varies at a modest degree, which reflects their capacity to withstand possible losses. With a mean of 19.14% and a high standard deviation of 9.74, CRR values exhibit a larger range from 3.05% to 36.21%, indicating substantial diversity in the liquidity reserves kept by these institutions. This variability is likely due to different approaches to liquidity management and regulatory compliance.

The NPLR varies between 0.01% and 5.46%, with a mean of 1.34% and a standard deviation of 1.48. These figures show that there are variations in credit risk management throughout the banks, although overall the levels of non-performing loans are low.

The CDR values, which demonstrate a significant variation in how banks use their deposits for lending operations, range from 64.43% to 107.01%, with a mean of 85.73% and a standard deviation of 8.35. This might be a sign of different risk appetites and lending strategies.

With a mean of 1.70% and a standard deviation of 0.64 for performance indicators, ROA varies from 0.50% to 3.65%, indicating modest profitability in comparison to assets with substantial variability. With a mean of 15.88%, a standard deviation of 4.94, and a range of 5.70% to 27.91%, ROE shows significant variations in the efficiency with which banks produce returns on shareholders' equity. This thorough examination highlights the various operating approaches and states of financial health across the institutions under observation.

4.1.2 Correlation Analysis

The overall descriptive analysis for the dependent variable, ROA and ROE, and the independent variables, TI, NPLR, CDR, CRR, and CAR, core capital ratio (CR), supplementary capital ratio (SC), is present in Tables 11 and 12. The descriptive analysis is based on fifty observations in total.

Table 11*Correlation Analysis with ROA*

Variables	Ln_TI	CAR	CRR	NPLR	CDR	ROA
Ln_TI	1					
CAR	-.400** 0.004	1				
CRR	-0.172 0.233	.438** 0.001	1			
NPLR	-0.069 0.636	.463** 0.001	.338* 0.016	1		
CDR	-0.275 0.054	.412** 0.003	.384** 0.006	0.250 0.081	1	
ROA	-0.017 0.909	0.199 0.167	0.004 0.980	.390** 0.005	-0.195 0.175	1

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

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

Table 11 presents the correlation analysis between Return on Assets (ROA) and several key financial variables for Nepalese commercial banks. The correlation coefficient between ROA and the natural logarithm of Total Investment (Ln_TI) is -0.017, indicating a negligible and statistically insignificant relationship ($p = 0.909$). This suggests that changes in Total Investment have minimal impact on the ROA of Nepalese commercial banks.

The correlation between ROA and the Capital Adequacy Ratio (CAR) is 0.199, which, while positive, is not statistically significant ($p = 0.167$). This implies that higher capital adequacy does not necessarily lead to improved asset returns in this context.

A similar lack of significant correlation is observed between ROA and the Cash Reserve Ratio (CRR), with a coefficient of 0.004 ($p = 0.980$). This negligible correlation suggests that the liquidity reserve maintained by banks has little direct effect on their asset returns.

In contrast, a strong positive and statistically significant correlation exists between ROA and the Non-performing Loan Ratio (NPLR), with a coefficient of 0.390 ($p = 0.005$). This indicates that as the proportion of non-performing loans increases, so does the ROA, which might suggest that banks with higher non-performing loans could be engaging in riskier lending practices that yield higher returns.

Lastly, the Credit Deposit Ratio (CDR) shows a negative correlation with ROA at -0.195, although this relationship is not statistically significant ($p = 0.175$). This suggests that higher credit utilization relative to deposits may not significantly influence asset returns for these banks.

Overall, the analysis highlights that among the examined variables, only the Non-performing Loan Ratio (NPLR) shows a significant relationship with ROA, suggesting that credit risk management is crucial for the profitability of Nepalese commercial banks. The findings imply that these banks may need to focus more on managing non-performing loans to sustain and enhance their returns on assets.

Table 12

Correlation Analysis with ROE

Variables	Ln_TI	CAR	CRR	NPLR	CDR	ROE
Ln_TI	1					
CAR	-.400** 0.004	1				
CRR	-0.172 0.233	.438** 0.001	1			
NPLR	-0.069 0.636	.463** 0.001	.338* 0.016	1		
CDR	-0.275 0.054	.412** 0.003	.384** 0.006	0.250 0.081	1	
ROE	0.251 0.078	-.371** 0.008	-0.136 0.345	-.287* 0.044	-.629** 0.000	1

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

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

Table 12 presents the correlation analysis between Return on Equity (ROE) and several financial variables for Nepalese commercial banks. The correlation coefficient between ROE and the natural logarithm of Total Investment (Ln_TI) is 0.251, indicating a positive but statistically insignificant relationship ($p = 0.078$). This suggests that variations in Total Investment have a limited direct impact on the ROE of these banks.

A statistically significant negative correlation is observed between ROE and the Capital Adequacy Ratio (CAR), with a coefficient of -0.371 ($p = 0.008$). This indicates that higher capital adequacy is associated with lower returns on equity. This relationship implies that

while maintaining a high CAR may enhance the stability and solvency of banks, it might also constrain their ability to generate higher returns for shareholders.

The correlation between ROE and the Cash Reserve Ratio (CRR) is -0.136, which is negative but not statistically significant ($p = 0.345$). This suggests that the liquidity reserves held by banks have a minimal impact on their equity returns.

A significant negative correlation is found between ROE and the Non-performing Loan Ratio (NPLR), with a coefficient of -0.287 ($p = 0.044$). This indicates that higher levels of non-performing loans are associated with lower returns on equity, highlighting the detrimental effect of poor credit quality on profitability.

The most pronounced relationship is between ROE and the Credit Deposit Ratio (CDR), with a strong negative correlation of -0.629 ($p = 0.000$). This significant finding suggests that higher credit utilization relative to deposits is strongly linked to lower returns on equity, potentially due to the increased risk and cost associated with higher leverage.

Overall, the analysis indicates that for Nepalese commercial banks, maintaining high capital adequacy and managing non-performing loans are critical for sustaining and enhancing equity returns. The significant negative impact of high credit utilization on ROE underscores the importance of prudent lending practices and effective credit risk management.

4.1.3 Regression Analysis

The process of determining how changes in one series correspond to variations in another is known as regression analysis. It ascertains the kind and intensity of the correlation between two variables. The estimate of unknown values or the prediction of one variable from the known values of other variables is, thus, known as regression. The regression analysis examines variables, Non-performing Loan Ratio (NPLR) and Credit Deposit Ratio (CDR) are significant predictors of ROA for Nepalese commercial banks. These findings underscore the importance of managing credit risk and maintaining prudent lending practices to enhance profitability. The moderate explanatory power of the model suggests that other factors not included in the analysis may also influence ROA, indicating the need for further research to identify additional determinants of asset returns in this context.

Table 13*Model summary with ROA*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517	.267	.184	.57798

Predictors: (Constant), CDR, NPLR, Ln_TI, CRR, CAR

Table 13 presents the model summary for the regression analysis with Return on Assets (ROA) as the dependent variable. The model demonstrates an R value of 0.517, indicating a moderate correlation between the predictors (CDR, NPLR, Ln_TI, CRR, CAR) and ROA. The R Square value of 0.267 suggests that approximately 26.7% of the variability in ROA can be explained by the model. The Adjusted R Square value is 0.184, accounting for the number of predictors in the model and indicating a slightly lower explanatory power. The standard error of the estimate is 0.57798, which provides a measure of the average distance that the observed values fall from the regression line.

Table 14*Analysis of Variance with ROA*

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	5.354	5	1.071	3.206	.015
Residual	14.699	44	.334		
Total	20.053	49			

Dependent Variable: ROA

Predictors: (Constant), CDR, NPLR, Ln_TI, CRR, CAR

Table 14 provides the Analysis of Variance (ANOVA) results for the regression model. The regression sum of squares is 5.354 with 5 degrees of freedom (df), and the residual sum of squares is 14.699 with 44 df, leading to a total sum of squares of 20.053 with 49 df. The mean square for the regression is 1.071, and for the residual, it is 0.334. The F-value of 3.206 and the significance level (Sig.) of 0.015 indicate that the regression model is statistically significant at the 5% level. This means that the combination of predictors significantly explains the variability in ROA.

Table 15*Coefficient Analysis with ROA*

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
1 (Constant)	3.472	2.035	1.706	.095
Ln_TI	-.011	.055	-.201	.842
CAR	.047	.047	1.001	.322
CRR	-.006	.010	-.578	.566
NPLR	.184	.065	2.835	.007
CDR	-.027	.011	-2.341	.024

Dependent Variable: ROA

Table 15 details the coefficient analysis for the regression model. The constant (intercept) has an unstandardized coefficient (B) of 3.472 with a standard error of 2.035, yielding a t-value of 1.706 and a significance level of 0.095. While the constant is not statistically significant, it provides the baseline level of ROA when all predictors are zero.

Among the predictors, the Non-performing Loan Ratio (NPLR) has a positive unstandardized coefficient of 0.184 with a standard error of 0.065, resulting in a t-value of 2.835 and a significance level of 0.007. This indicates that NPLR is a significant predictor of ROA, suggesting that higher levels of non-performing loans are associated with increased returns on assets. This finding may indicate that Nepalese commercial banks with higher non-performing loans might be engaging in riskier lending practices that yield higher returns.

The Credit Deposit Ratio (CDR) has a negative unstandardized coefficient of -0.027 with a standard error of 0.011, a t-value of -2.341, and a significance level of 0.024. This suggests that higher credit utilization relative to deposits is significantly associated with lower ROA, indicating the potential adverse effects of higher leverage on asset returns.

The other predictors—Ln_TI, CAR, and CRR—do not show statistically significant relationships with ROA, with p-values of 0.842, 0.322, and 0.566, respectively. This implies that Total Investment, Capital Adequacy Ratio, and Cash Reserve Ratio have limited direct impact on the return on assets for Nepalese commercial banks in this model.

Table 16*Model summary with ROE*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.674	.454	.392	3.85062

Predictors: (Constant), CDR, NPLR, Ln_TI, CRR, CAR

Table 16 provides the model summary for the regression analysis with Return on Equity (ROE) as the dependent variable. The model exhibits an R value of 0.674, indicating a substantial correlation between the predictors (CDR, NPLR, Ln_TI, CRR and CAR) and ROE. The R Square value of 0.454 suggests that approximately 45.4% of the variability in ROE can be explained by the model. The Adjusted R Square value, accounting for the number of predictors, is 0.392, indicating a slightly lower but still substantial explanatory power. The standard error of the estimate is 3.85062, which indicates the average distance that the observed values fall from the regression line.

Table 17*Analysis of Variance with ROE*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	543.471	5	108.694	7.331	.000
	Residual	652.399	44	14.827		
	Total	1195.870	49			

Dependent Variable: ROE

Predictors: (Constant), CDR, NPLR, Ln_TI, CRR, CAR

Table 17 presents the Analysis of Variance (ANOVA) results for the regression model. The regression sum of squares is 543.471 with 5 degrees of freedom (df), and the residual sum of squares is 652.399 with 44 df, leading to a total sum of squares of 1195.870 with 49 df. The mean square for the regression is 108.694, and for the residual, it is 14.827. The F-value of 7.331 and the significance level (Sig.) of 0.000 indicate that the regression model is statistically significant at the 1% level. This confirms that the combination of predictors significantly explains the variability in ROE.

Table 18*Coefficient Analysis with ROE*

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
1 (Constant)	43.834	13.557	3.233	.002
Ln_TI	.186	.366	.508	.614
CAR	-.255	.315	-.810	.422
CRR	.106	.066	1.617	.113
NPLR	-.490	.432	-1.136	.262
CDR	-.358	.075	-4.749	.000

Dependent Variable: ROE

Table 18 details the coefficient analysis for the regression model. The constant (intercept) has an unstandardized coefficient (B) of 43.834 with a standard error of 13.557, resulting in a t-value of 3.233 and a significance level of 0.002. This indicates that the constant is statistically significant, providing the baseline level of ROE when all predictors are zero.

Among the predictors, the Credit Deposit Ratio (CDR) has a significant negative unstandardized coefficient of -0.358 with a standard error of 0.075, a t-value of -4.749, and a significance level of 0.000. This suggests that higher credit utilization relative to deposits is strongly associated with lower ROE, emphasizing the negative impact of higher leverage on equity returns for Nepalese commercial banks.

The other predictors—Ln_TI, CAR, CRR, and NPLR—do not show statistically significant relationships with ROE, with p-values of 0.614, 0.422, 0.113, and 0.262, respectively. Although the Cash Reserve Ratio (CRR) approaches significance with a p-value of 0.113, it is not conclusive. This implies that Total Investment, Capital Adequacy Ratio, Cash Reserve Ratio, and Non-performing Loan Ratio have limited direct impact on the return on equity for these banks in this model.

The regression analysis indicates that the Credit Deposit Ratio (CDR) is a significant predictor of ROE for Nepalese commercial banks, with higher credit utilization relative to deposits negatively impacting equity returns. This underscores the importance of managing leverage and maintaining prudent lending practices to ensure sustainable profitability. The

moderate explanatory power of the model suggests that other factors not included in the analysis may also influence ROE, highlighting the need for further research to identify additional determinants of equity returns in this context.

Table 19

Summary of Hypotheses

Research Hypotheses	P-value	Remarks
H1: There is significant impact of total investment on return on assets.	.842	Do not Accept
H2: There is significant impact of non-performing loan on return on assets.	.007	Accept
H3: There is significant impact of cash reserve ratio on return on assets.	.556	Do not Accept
H4: There is significant impact of credit deposit ratio on return on assets.	.024	Accept
H5: There is significant impact of capital adequacy ratio on return on assets.	.322	Do not Accept
H6: There is significant impact of total investment on return on equity.	.614	Do not Accept
H7: There is significant impact of non-performing loan on return on equity.	.262	Do not Accept
H8: There is significant impact of cash reserve ratio on return on equity.	113	Do not Accept
H9: There is significant impact of credit deposit ratio on return on equity.	.000	Accept
H10: There is significant impact of capital adequacy ratio on return on equity.	.422	Do not Accept

4.2 Discussion

Comparing empirical research on the financial performance of banks in different countries reveals a wide variety of results that either support or contradict one another. According to Kitpur (2023), investment structure has a detrimental influence on the financial

performance of banks in the COMESA area, although income diversification has a beneficial impact. The results of Pallavi and Saluja (2017), who stressed the significance of profitability assessment for financial soundness in Indian scheduled commercial banks, are in line with this. Both findings point to the need of strategic revenue and investment management in preserving bank performance.

Singh (2022) and Singh & Sing (2021) looked at how outside variables affected financial results. According to Singh (2022), the COVID-19 pandemic had a substantial impact on the Indian financial sector, which changed investor behavior in favor of diversified portfolios and long-term returns. Similar findings were made by Singh & Sing (2021), who discovered that big farm owners gave irrigation and other fixed asset investments priority. According to both research, resource management techniques and external shocks have a major influence on financial performance, which is consistent with Kitpur's (2023) conclusions about the detrimental effects of investment structure.

Neupane (2020) and Shrestha (2019) investigated the factors that influence the profitability of commercial banks in Nepal. According to Neupane (2020), internal variables have less of an effect on profitability than external ones, such as GDP growth and inflation. According to Shrestha's (2019) research, bank-specific variables including OE, AQ, and ME significantly improve financial performance whereas CR has the opposite effect. Though they stress the significance of both internal and external variables in influencing financial success, their results are somewhat comparable with Kitpur (2023), albeit having a different emphasis.

Kishore (2018) and Shawnm & Aziz (2018) investigated how credit and regulatory issues affected the performance of banks. According to Kishore (2018), Indian banks balance their domestic and foreign investments by investing in designated securities in order to comply with regulatory criteria. On the other hand, Shawnm & Aziz (2018) discovered that government budgetary allocations drove the favorable impact of commercial bank loans on agricultural growth in Kurdistan. Both studies emphasize how credit policies and regulatory frameworks influence bank performance, which is in line with Kitpur's (2023) larger issue of strategic investment management.

Saif (2014) and Jana & Lace (2018) looked at how macroeconomic conditions affected bank profitability. In line with Saif's (2014) findings that AQ has a negative effect on ROE in Saudi banks while other variables have a favorable impact on NIM, Jana & Lace (2018) observed that GDP favorably affects profitability in Latvian banks. Both studies emphasize how crucial macroeconomic stability is to bank profitability, which is consistent with Neupane's (2020) focus on external variables as inflation and GDP growth.

The financial performance of the State Bank Group in India and the banks in Bangladesh were discussed by Mohiuddin (2014) and Misra & Aspal (2013), respectively. While Misra & Aspal (2013) discovered variation in performance measures including capital adequacy and asset quality across the State Bank Group, Mohiuddin (2014) emphasized sustainable expansion in branches, deposits, and profitability. Both research show that growth plans and internal management techniques are important for financial success, which is consistent with Shrestha's (2019) results about the importance of bank-specific characteristics.

Finally, an analysis of the investment practices and stability of banks in India and the GCC was conducted by Kumar & Manik (2012) and Kumar & Sayani (2015). While Kumar & Sayani (2015) found declining asset quality and profitability in GCC Islamic banks, Kumar & Manik (2012) noted growing investments in India, but not proportionate to deposits. In contrast to Kitpur (2023), our results emphasize the difficulties in preserving asset quality and investment returns, highlighting the need of sound investment methods in order to attain financial stability.

In conclusion, the analyzed empirical studies show how intricately internal and external variables interact to affect bank performance. There are consistent results about the importance of macroeconomic stability, regulatory compliance, and income diversity; however, there are also significant differences about the effects of internal management practices and investment structures. These differences highlight how crucial context-specific tactics are for improving financial success in various banking settings.

CHAPTER-V

SUMMARY AND CONCLUSION

5.1 Summary

This study's main goal was to examine the financial performance of commercial banks in Nepal. It did this by concentrating on important metrics such total investment, the ratio of non-performing loans to total loans, the capital adequacy ratio, the ratio of cash reserves to credit deposits, and profitability (ROA and ROE). The research also sought to determine how these factors related to one another and how they affected the banks' profitability. The study used a mixed research design that included both comparative and descriptive methods in order to accomplish these goals. As of January 2024, there were twenty commercial banks functioning in Nepal; a representative sample of five institutions was chosen via the use of stratified sampling. We utilized secondary data from Nepal Rastra Bank and the stock market board publications, as well as balance statements, profit and loss accounts, and annual reports. For data analysis, inferential statistical techniques like correlation and multiple regression analysis were used in conjunction with descriptive statistical tools like mean and standard deviation.

The results provided important new information about the selected institutions' financial performance. The total investment, cash reserve ratio, capital adequacy ratio, non-performing loan ratio, and credit-deposit ratio varied significantly between the banks. The research showed that although effective management of total investments favorably impacted both ROA and ROE, larger levels of non-performing loans had a negative impact on profitability. It was also discovered that keeping the cash reserve and capital adequacy ratios high was essential to preserving financial stability and profitability.

The research concluded that although non-performing loans have a negative influence on profitability, financial performance is improved by prudent investment management, keeping sufficient capital, and liquidity levels. The correlations found between these factors highlight how crucial good financial management techniques are to the banking industry. These results support the importance of these financial criteria in assessing bank performance and are in line with previous research.

This research has a wide range of consequences. From a practical standpoint, it emphasizes that in order to increase profitability, banks must strengthen their strategies for investments and credit risk management. In theory, it adds to the corpus of information already available on bank performance, especially when it comes to Nepalese banks. Regulators should take these results into account when developing policy recommendations to guarantee the banking industry's expansion and financial stability. For a more thorough examination, future research might broaden the scope to include more banks and factors.

5.2 Conclusion

There is significant variation in the financial standing of Nepalese commercial banks based on a number of important parameters. Banks' total investments vary significantly from one another, suggesting a range of investment capabilities. The percentage of non-performing loans is typically low, indicating efficient management of credit risk; nonetheless, some institutions have elevated levels of non-performing loans. Strong capital buffers are reflected in the robust capital adequacy ratios. The broad variations in the cash reserve ratio indicate the various approaches used by banks to maintain their liquidity. The ratio of deposits to credit shows that a significant amount of deposits are used for lending. The majority of banks seem to be successful based on the moderate to high levels of profitability shown by return on equity and return on assets.

Notable correlations are found when financial indicators and profitability are analyzed together. Return on assets indicates that greater non-performing loan levels are linked to better profitability, but larger credit-deposit ratios often have a negative effect on return on assets. Higher capital adequacy, non-performing loans, and credit-deposit ratios are associated with worse profitability in terms of return on equity. The lack of a strong direct correlation between total investment and profitability metrics suggests that other variables have a greater impact on profitability.

According to the impact study, there is a positive correlation between the non-performing loan ratio and return on assets, indicating that a larger percentage of non-performing loans may lead to increased profitability. On the other hand, the credit-deposit ratio shows that more lending in relation to deposits lowers profitability by having a negative impact on both return on equity and return on assets. A number of other variables, including cash

reserve ratio, total investment, and capital sufficiency, do not significantly affect profitability metrics. These results emphasize how crucial it is for Nepalese commercial banks to manage lending practices and credit risk in order to increase profitability.

5.3 Implications

Based on its results and conclusion, the research makes the following recommendations.

Practical Implications

The results indicate that in order to improve profitability, Nepalese commercial banks should give priority to managing their non-performing loans effectively and keeping a healthy credit-deposit ratio. Strong credit risk assessment processes should be put in place by banks to reduce the amount of non-performing loans, as greater non-performing loan ratios are linked to higher profitability. Furthermore, it is essential to keep the credit-deposit ratio at its ideal level in order to avoid overland, which may have a detrimental effect on profitability. Banks may improve their financial performance and long-term profitability by concentrating on these areas.

Theoretical Implications

By emphasizing the important connections between non-performing loans, credit-deposit ratios, and profitability in the context of Nepalese commercial banks, the research adds to the body of knowledge already available on banking performance. It casts doubt on the conventional wisdom that greater non-performing loan ratios are always bad for banks' bottom lines by arguing that profitable operations may sometimes coexist with larger non-performing loan rates. This discovery opens up new possibilities for theoretical investigation and improvement while complicating our knowledge of credit risk management and its relationship to bank performance.

Policy Implications

Regulations should be updated by policymakers to guarantee that banks handle their non-performing loans well and maintain an ideal credit-deposit ratio. To lower the frequency of non-performing loans, regulatory organizations should impose stronger standards on credit risk assessment and monitoring. Policies that encourage banks to have a healthy credit-deposit ratio may also contribute to increased financial stability and profitability in

the banking industry. Policymakers can establish a more robust banking environment that promotes profitability and sustainable development by tackling these issues.

Future Research

Prospective investigations may delve into the fundamental elements that foster the favourable correlation between non-performing loans and profitability. Examining the precise circumstances in which elevated non-performing loan percentages result in enhanced profitability may provide more profound understanding of credit risk management strategies. Furthermore, it would be beneficial to do long-term research looking at how credit-deposit ratios affect profitability over time. Scholars may also investigate the impact of other factors, such competitive markets and technology developments, on the financial outcomes of banks. Researchers may get a deeper grasp of the factors influencing bank profitability by broadening their study scope.

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APPENDIX

Year	Banks	TI	CAR	CRR	NPLR	CDR	ROA	ROE
2013/14	ABDL	63601346801.35	15.09	30.43	5.46	94.80	1.76	9.39
2014/15		64461681818.18	13.99	28.77	5.35	93.77	3.57	16.65
2015/16		86947061064.43	17.18	23.33	4.36	95.46	2.32	13.96
2016/17		89597372413.79	20.41	31.18	4.60	92.90	2.15	11.69
2017/18		104139447069.77	20.33	29.15	3.50	95.64	2.71	13.87
2018/19		115840414228.78	20.37	27.20	3.29	93.62	2.77	14.74
2019/20		139561690801.44	19.33	33.98	2.84	85.84	1.86	11.71
2020/21		161586391943.55	16.94	36.21	1.88	92.93	1.59	10.16
2021/22		201343808222.64	15.59	25.96	2.09	107.01	0.90	5.70
2022/23		211153185197.78	14.24	30.1	2.78	91.56	0.5	7.79
2013/14		NSBI	64337396008.40	13.28	9.32	0.26	65.54	1.51
2014/15	61130243717.88		14.03	10.92	0.19	78.39	1.80	21.51
2015/16	59190440544.44		13.49	8.33	0.14	72.90	1.59	17.46
2016/17	83756788505.66		15.71	10.04	0.10	78.07	1.57	14.85
2017/18	135013359700.64		15.15	7.18	0.20	89.60	1.97	15.81
2018/19	102771643323.86		14.12	6.65	0.20	90.52	1.94	16.20
2019/20	118158848487.11		15.55	8.89	0.23	85.50	1.17	10.44
2020/21	131893523494.02		13.86	3.22	0.23	95.58	0.70	6.26
2021/22	137656879550.00		13.25	3.05	0.15	92.37	1.07	9.57
2022/23	153081281473.83		12.58	4.06	2.43	81.42	1.09	10.77
2013/14	NIC		719438094382.02	14.05	28.68	2.33	82.93	1.71
2014/15		1311231308187.13	12.49	28.91	2.07	81.03	1.21	13.05
2015/16		1355505555041.32	12.44	23.79	0.76	85.62	1.51	16.50
2016/17		2417979265827.81	13.83	25.80	0.36	83.70	1.64	16.84
2017/18		1815979199695.12	12.24	24.45	0.06	86.30	0.97	12.09
2018/19		2616322651546.39	13.32	26.05	0.46	84.55	1.56	22.73
2019/20		2537009267692.31	13.50	27.09	0.75	85.75	1.32	19.26
2020/21		4113001011212.12	12.47	20.65	0.50	87.58	1.09	17.09
2021/22		10545524190458.70	13.38	20.30	0.53	89.85	1.20	18.43
2022/23		6707123132000.00	13.36	22.23	0.88	86.17	1.31	16.39
2013/14		SANIMA	21943942446.04	12.54	26.68	0.02	82.90	1.46
2014/15	29284471232.88		11.08	22.32	0.07	83.97	1.55	18.19
2015/16	40260885677.42		12.36	24.24	0.02	88.10	1.78	22.69
2016/17	55962008089.89		15.57	26.08	0.01	89.03	1.86	14.39
2017/18	97568145451.61		12.41	24.72	0.30	87.45	1.85	18.67
2018/19	91776561939.46		13.19	22.87	0.08	90.42	2.07	23.20
2019/20	109079916612.56		13.00	24.01	0.45	85.10	1.41	16.09
2020/21	125965864241.14		13.57	22.15	0.12	94.10	1.44	18.57
2021/22	160955255037.50		13.66	27.07	0.33	89.18	1.09	14.13
2022/23	192045809636.70		14.42	30.01	1.31	83.8	1.21	15.54
2013/14	NABIL		2678270769230.77	11.18	11.32	2.13	74.55	3.65

2014/15	2219239452054.79	11.57	14.15	2.23	64.43	2.06	22.73
2015/16	3309361165048.54	11.73	6.77	1.82	70.49	2.32	25.61
2016/17	2641602586206.90	12.90	10.02	1.14	65.38	2.69	22.41
2017/18	2004179553903.35	13.00	10.05	0.55	82.66	2.61	20.94
2018/19	1471779310344.83	12.50	4.78	0.74	81.96	2.11	17.76
2019/20	2077923696682.46	13.07	11.20	0.98	79.72	1.58	13.61
2020/21	2103230379746.83	10.67	11.46	0.84	89.84	1.78	15.19
2021/22	1621921348314.61	10.77	4.13	1.63	92.49	1.20	9.78
2022/23	1230240000000.00	12.54	6.89	3.39	84.19	1.42	11.66

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ABSTRACT Through the examination of important metrics such total investment,

non-performing loan ratio , capital adequacy **ratio, cash reserve ratio** , credit-deposit ratio, **and profitability (ROA and ROE**

), this research sought

to assess the financial performance of Nepalese commercial banks. The

research also aimed to investigate the connections between these factors and how they affect profitability. Descriptive and causal comparative methods were both used in a mixed study design. As of January 2024, there were twenty commercial banks in Nepal; a representative sample of five institutions was chosen using stratified sampling. We used secondary data from Nepal Rastra Bank and the stock market board publications, as well as balance statements, profit and loss accounts, and annual reports. Data analysis included the use of inferential methods like multiple regression analysis and correlation as well as descriptive statistics like mean and standard deviation. The results showed that there were notable differences in the financial performance metrics amongst the banks in the sample. Increases in non-performing loan levels were shown to have a negative impact on profitability, whereas effective overall investment management had a favorable impact on ROE and ROA. To guarantee financial stability and profitability, the cash reserve ratio and the capital adequacy ratio were also essential. According to the study's findings, profitable operations are adversely affected by non-performing loans, while financial performance is improved by prudent investment management and sufficient levels of capital and liquidity. These results highlight the significance of good financial management techniques in the banking industry and are consistent with previous research. The ramifications of the research are complex. From a practical standpoint, this highlights the need of better credit risk management and investment methods in order to increase profitability. In theory, it adds to the corpus of information already available on bank performance, especially when it comes to Nepalese banks. Keywords: Financial Performance, Nepalese Commercial Banks, Non-Performing Loans, Capital Adequacy Ratio and Profitability (ROA and ROE) i CHAPTER-I INTRODUCTION 1.1 Background of the Study The financial performance of commercial banks plays a crucial role in the overall stability and growth of a country's economy. In Nepal, commercial banks constitute a significant part of the financial system, providing essential services such as lending, deposit mobilization, and financial intermediation. Over the years, the banking sector in Nepal has experienced substantial growth, with a notable increase in the number of commercial banks and the volume of financial transactions (Nepal Rastra Bank, 2022). The study of investment patterns and financial metrics such as non-performing loan ratios,