

# **DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS IN NEPAL**

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fulfilment of the requirements for the Degree of Masters of Business Studies

**by**

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## CERTIFICATE OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “**DETERMINANTS OF PROFITABILITY OF COMMERCIAL BANKS IN NEPAL**” 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 purposes.

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

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## REPORT OF RESEARCH COMMITTEE

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## APPROVAL SHEET

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Rupak Shakya  
Researcher

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## ABBREVIATIONS

AD	:	Anno Domini
AIC	:	Akaike information criterion
ATM	:	Automated Tailor Machine
BS	:	Bikram Sambat
DER	:	Debt to Equity Ratio
e.g.	:	Example
F/Y	:	Fiscal Year
i.e.	:	That is
Ltd	:	Limited
MBS	:	Master of Business Studies
ROA	:	Return on Assets
ROE	:	Return on Equity
SC	:	Schwarz criterion
SD	:	Standard Deviation
SEM	:	Structural Equation Modelling

## ABSTRACTS

This study's primary goal is to determine how profitability drivers affect Nepalese commercial banks' profitability. Within the framework of financial performance research, the study investigates the correlations and predictive variables influencing Return on Equity (ROE) and Return on Assets (ROA). The correlation analysis reveals positive relationships between ROA and liquidity, operating expenses, GDP, and inflation. These relationships suggest that more effective asset utilization can be achieved through improved liquidity management, increased operating expenses, larger firm sizes, favorable macroeconomic conditions, and inflation. On the other hand, non-performing loans (NPL) significantly reduce return on assets (ROA), emphasizing the need of credit risk management. These correlations are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans and the cost-to-deposit ratio (CDR) and significant positive coefficients for liquidity, operational expenditures, GDP, and inflation. Remarkably, company size had a negative influence on ROA in the regression model, indicating that larger businesses can have trouble keeping their asset efficiency. Strong capital foundations are important because they have a beneficial impact on ROA, as demonstrated by the capital adequacy ratio (CAR). These conclusions are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans, the cost-to-deposit ratio, and business size, and significant positive coefficients for CAR, liquidity, GDP, and inflation. Higher equity returns may be attributed to improved capital adequacy and liquidity management, as indicated by the positive coefficients for both CAR and liquidity. Given that business size has a negative effect on ROE, larger organizations may find it more difficult to generate equity returns efficiently than smaller ones. Financial and economic elements are combined to impact both ROA and ROE. These performance parameters are positively impacted by efficient management of liquidity, operational costs, capital sufficiency, and good macroeconomic conditions. Conversely, increased non-performing loan levels and cost inefficiencies have a negative impact on ROE and ROA. It's interesting to note that although larger organizations tend to have higher equity returns and greater asset utilization, the regression analysis raises the possibility that larger firms may have difficulties being efficient.

Key words: *Return on Assets, Return on Equity, Liquidity, Operating Expenses, Firm Size, Inflation Rate, GDP*

# CHAPTER-I

## INTRODUCTION

### 1.1 Background of the Study

Financial institutions function as middlemen in the financial system, facilitating the flow of funds between its members. Governments, corporations, people, and financial intermediaries make up the majority of those involved in the financial system. Commercial banks play a significant role as financial intermediaries that provide indirect financing (Gittman & Jochnk, 2010). A significant contribution to a nation's economic growth is made by commercial banks. For example, they regularly distribute resources and cash from savers to investors. If they get the required income to meet their operating expenses, they act accordingly. In other words, banks must be profitable in order to continue serving as a means of intermediation. Beyond their role in intermediation, banks' performance has a significant impact on a nation's ability to prosper economically. Strong financial results provide stockholders a return on their investment. However, poor banking performance can result in crises and bank failure, which can have a detrimental effect on economic expansion (Grywinski, 2015).

Commercial banks play a crucial role in the distribution of economic resources in every healthy economy across the world, particularly when they act as a regular middleman, transferring funds from depositors to investors (Ongole & Kusa, 2013). Furthermore, by moving money from savings accounts to investment projects, the banking industry has the ability to coordinate the resources of an economy (Nshimiyimana & Zubeda, 2017). Because it fosters economic progress, the banking industry is essential (Lipunga, 2014). Commercial banks give access to the country's payment systems, as well as deposit and credit options, to both individual and corporate clients in an effort to boost economic activity (Handley Schachler et al., 2007). In the meanwhile, banks serve as channels for the central banks' effective monetary policy, helping the latter stabilize their respective economies (Siddiqui & Shoaib, 2011).

An economy's good and healthy position is largely dependent on the soundness of its banking sector (Sufian & Chong, 2008). Conversely, poor bank performance might lead to a financial crisis, which would be detrimental to a nation's ability to thrive

economically. Therefore, a financial catastrophe like to the one that struck the US in 2007 might follow the banking crisis (Marshall, 2009).

In general, both internal and external variables influence a bank's financial success. Internal determinants can be referred to as bank-specific profitability variables because they originate from commercial banks' financial statements, such as their income statement and balance sheet (Wahdan & Leithy, 2017). The economic and regulatory environment in which banks operate is made up of external elements, which have no direct bearing on bank management but typically have an indirect effect on banks as well (Tobias & Themba, 2011).

The primary concerns are how profitability is decided among internal and external sources and how profitability affects the overall operation of the banking system. The capacity of a business to consistently produce net income is known as profitability. Ratio is a benchmark used to assess a company's performance. Ratios are useful for summarizing vast amounts of financial data and for calculating the profitability of a business. Deciding whether to use debt or equity capital is one of the most significant financial decisions that businesses must make. (Glen & Pinot, 1994). Increasing the wealth of a company's owners or shareholders is one of its main goals. The current market value of the company's outstanding shares is a measure of the wealth of shareholders. The management of the company must make logical financing decisions on the best capital structure in order to meet this goal and reduce its cost of capital. Goyal (2013)

A company's ability to use its resources effectively and efficiently to produce revenue determines how profitable it is. Additionally regarded as a key performance measure, profitability also translates into a higher rate of return for investors. Conversely, low profitability denotes subpar performance, which will eat away at capital. If this pattern persists, the business will eventually fail. A crucial component of investing is anticipating a good rate of return (Hossain, 2013). Prospective lenders and investors always want to know if they will receive their initial investment back along with any profits. By monitoring performance and evaluating profitability-related metrics, investors may be sure of this. Certain variables have a favorable impact on profitability, whereas other

variables have a negative impact. A comparison of a company's annual profit to its prior year's profit can be used to gauge changes in its earnings (Scott, 2009).

Profitability is contingent upon several internal and external elements, as well as the product's profitability and the growth of the product market. Mixed results have been found in empirical research that have looked at the factors that affect manufacturing businesses' profitability. Numerous factors have been proposed as the means of determining profitability in various businesses. A number of researchers have examined microeconomic parameters as significant predictors of profitability, including business size, leverage, current assets, and sales growth. According to Bourgeois et al. (2014), an industry's businesses have different levels of profitability based on their size, growth rate, return on assets, and economies of scale. (Nusbantoro et al., 2018) discovered that the manufacturing businesses listed on the Indonesian stock market had a working capital ratio and a profitability ratio.

Any nation's banking industry must be profitable as banks are the backbone of that nation's financial system (Ali et al., 2011). Profitable banking sectors strengthen economies' resilience to adverse shocks and support the stability of the financial system (Athanasoglou et al., 2008). The GDP (gross domestic product) of a nation benefits from the prosperous banks. Because the social, legal, and macroeconomic environments are always changing, it is crucial to research the indicators that have any bearing on the profitability of banks (Owoputi et al., 2014). Banks' capacity and willingness to fund the larger economy is weakened by low profitability (Garcia & Trindade, 2019). Banks need to be successful in order to pay for their overhead, cover losses, and reward depositors and investors. Without profitability, they cannot operate. Consequently, it's critical to research the variables that affect banks' profitability (Riaz & Mehar, 2013).

According to Simegneu (2023), the capital structure of commercial banks in Ethiopia was shown to be significantly impacted by earning volatility, profitability, non-debt tax shield, tangibility, and liquidity; nevertheless, growth and firm size had a statistically negligible influence. Due consideration should thus be given to earnings volatility, profitability, non-debt tax shield, tangibility, and liquidity by Ethiopian commercial banks as they formulate the best possible capital composition, which may lower the weighted average cost of capital and increase shareholder value.

In return for interest payments, banks get cash deposits from their clients, which they then invest elsewhere. The difference between the interest a bank pays its depositors and the revenue it receives from investments is the bank's profit (Minovich, 2024).

A bank has to turn a profit in order to properly carry out its function as an intermediate organization since it needs to pay for its overhead. In general, profit is the excess that arises from the difference between an organization's revenue and costs over a given time frame. When a bank makes more money than it needs to in a specific amount of time, it is said to be profitable. Interest income and non-interest income are the two main categories of profitability in the banking industry. Of all of them, interest income is the main source of revenues for banks (Astari & Rejekiingsih, 2024). Generally speaking, banks' profitability is demonstrated by their earnings, which may be assessed using a variety of ratios. A particular statistic called return on assets (ROA) compares a bank's earnings to its total assets to assess how profitable the bank is.

Because profitability is one of the numerous variables that define a bank's overall success in a competitive environment, management has to be aware of how to maximize the profitability of the bank's core business operations and, therefore, the wealth of its shareholders. Therefore, the focus of this study is on the factors that influence Nepalese commercial banks' profitability.

## **1.2 Problem Statement**

The primary goal of every established firm, including banks, is profitability. Therefore, understanding the elements that determine a bank's profit gives management the chance to identify the variables that are impacting that profit and focus their attention on them while making decisions about how to modify the factors. Furthermore, bankruptcies can be linked to a systemic shortage. A well-established banking system in the economic sector can contribute to the stability of the financial system within national borders. The 2007–2009 financial crisis highlights the significance of bank profitability for both the domestic and global economies, underscoring the necessity of constant monitoring. Economic development and growth are negatively impacted by poor bank performance. Crises and failures in banks can result from poor performance. Financial crises may

follow banking crises 15, which may lead to an economic collapse similar to what occurred in the US in 2007. Because of this, governments use their central banks to regulate the banking industry in an effort to maintain a stable and sound banking system that safeguards both the economy and depositors by preventing financial crises. As a result, bank performance received careful consideration in order to prevent the crisis (Chopra, 2015).

They discovered connections between macroeconomic variables and bank-specific characteristics in Latvian commercial banks between 2006 and 2011 as a result of their research. The authors used descriptive statistics, data correlation, and regression analysis to examine the profitability indicators of commercial banks after conducting a study of scientific literature. Based on the findings, the authors have determined that while profitability has a negative impact on capital and credit risks, it has a favorable impact on operational efficiency, portfolio composition, and management (Saunders & Cornet, 2010). Both internal and external variables had an impact on the bank's financial performance. Indicators that emanate from the balance sheet and income statement of banks' financial statements are known as internal factors. These variables may be regarded as particular elements that affect banks' profitability. Conversely, elements that are unrelated to the bank's administration are known as external factors. Rather, they are a reflection of the regulatory and economic landscape, which has an indirect effect on the profitability and day-to-day operations of banks. Internal elements that have an impact on a bank's profitability include credit risk, non-performing loans, and bank efficiency. However, the focus of the investigation is on the variables that, in the instance of Nepal, genuinely influence the bank's profitability (Richard, 2015). It showed a 22% rise in the number of individuals who no longer utilize banks for loans, savings, deposits, or investments—possibly representing a lost revenue stream for banks. The poll identified the following as obstacles to financial access: a lack of savings, a poor knowledge of banking services and products, and the perception that loans are needless, difficult to get, or burdensome to return. Using both macroeconomic and bank-specific variables, this study assesses the profitability drivers for Tanzanian banks (Baxeley, 2007).

Commercial banks' ability to retain capital, absorb loan losses, promote asset development, and provide returns to investors is critical to their profitability. These financial institutions' main source of income is interest income, which is obtained from

lending activities less interest costs on debt and deposits. Bank of America has established a number of common metrics for measuring profitability, including return on equity (ROE), which is a key indicator of long-term, sustainable growth and business competitiveness. It is a crucial metric for demonstrating the equity's allure to investors. The other is Return on Assets (ROA), which is a useful indicator of organizational profitability and may be used to assess how well management has utilized the assets.

The most significant and diversified financial industry is banking. While Neupane 2020 shown that macroeconomic factors have a major impact on banking profitability, Ashmmari et al. (2024) found that an unstable banking system produces a tumultuous atmosphere that ultimately leads to a financial crisis, which has a negative impact on bank profitability.

The range of banking services is enormous, and new developments are added on a regular basis. The bank receives commission income primarily from the following services: cash register services for both legal and physical entities; plastic card operations; bank guarantee issuance; banking services for customers in currency contracts; brokerage services in the securities market; etc. Most banks in numerous foreign nations provide free settlement, cash, and other services to their clients. Banks were forced to stop this technique as a result of the decline in interest margin, which was caused by the discrepancy between the average values of attracting and putting resources. We may currently observe a rise in commission income relative to banks' overall revenue. (Minovich, 2024)

The profitability of Nepalese commercial banks has not been the subject of many empirical investigations. While some researchers claimed that internal variables had a favorable effect, others claimed that they had a negative one. Numerous research papers of this kind have also disregarded firm-specific characteristics. The profitability of the enterprises is also impacted by firm-specific factors. The main goal of this research study is to identify the factors that influence the profitability of Nepalese commercial banks. This research project is being conducted to reduce these kinds of gaps.

- i. What is the profitability position of selected commercial banks?
- ii. Is there any relationship between capital adequacy, liquidity, interest rate spread, non-performing loan, credit to deposit ratio, operating expenses,

bank's size, GDP per Capita growth, inflation and ROA and ROE of the commercial banks?

- iii. How does the capital adequacy, liquidity, interest rate spread, non-performing loan, credit to deposit ratio, operating expenses, bank's size, GDP per Capita growth, inflation impact the ROA and ROE of the commercial banks?

### **1.3 Objectives of the Study**

Examining the factors that influence Nepal's commercial banks' profitability is the study's main goal. The following are the precise goals:

- i. To assess the profitability position of selected commercial banks.
- ii. To examine the relationship between the capital adequacy, liquidity, interest rate spread, non-performing loan, credit to deposit ratio, operating expenses, bank size, GDP per capita growth, inflation and ROA and ROE of the commercial banks.
- iii. To analyze the impact of capital adequacy, liquidity, interest rate spread, non-performing loan, credit to deposit ratio, operating expenses, bank's size, GDP per capita growth, inflation on the ROA and ROE of the commercial banks.

### **1.4 Rational of the Study**

This study will help close the knowledge gap about the factors that influence the profitability of banks' main business activities in Nepal. Therefore, they should be used as a guide for financial managers to provide them with practical understanding of possible issues with financing choices and profitability, as well as how to calculate profitability to help businesses achieve their aim of maximizing wealth. It also provides policymakers with a foundation upon which to examine the proper level of capital requirements for banks. Additionally, it acts as a resource for other corporate finance academics. In order to reduce their risk, creditors may also profit from backing businesses in a certain industry. The management and investors of Nepalese commercial banks would find this study useful in making informed decisions on capital structure. In addition to the aforementioned, the never-ending debate over capital structure theories has inspired a great deal of writing. This research adds to the body of knowledge about the factors that influence Nepalese commercial banks' profitability. In particular, the following points might be used to describe the relevance of this study:

- i. This study would be useful for the investors, borrowers, shareholders, managers of the commercial banks in Nepal.
- ii. This study also would be useful for policy makers of these commercial banks, customers and general public, and other stakeholders of the companies.
- iii. The study may be of help to scholars and academicians who may wish to use its findings as a basis for further research.
- iv. This study raises public awareness about the determinants of profitability of Nepalese commercial banks.

### **1.5 Limitations of the Study**

The purpose of the study is to determine how capital structure affects the profitability of Nepal's commercial banks. Financial ratios are used in this study to quantify profitability.

The following are some of the limitations of this study: -

- i. The data only of eleven fiscal years has taken for the studies from 2012/13 to 2022/2023.
- ii. Only secondary data has analyzed to interpret the results emerging from decision, so the result depends on the reliability and accuracy of secondary data.
- iii. The study mainly focuses on determinants of profitability. It does not cover the other aspects of finance.
- iv. Besides there are 20 commercial banks only five banks are taken as a sample for the study.

## **CHAPTER-II**

### **LITERATURE REVIEW**

The review of pertinent literature was the main emphasis of this chapter. The theoretical reviews of the subject are covered in this first section.

#### **2.1 Theoretical Review**

The goal of such analysis is to ascertain the effectiveness and performance of the firm management, as reflected in the financial reports and records. Financial analysis is the process of identifying the significant operating and financial characteristics of a firm from accounting data and the financial statement. The analysis is attempting to measure the firm liquidity, profitability, and other indicators that describe the business is conducted in a rational and orderly way or not. A deeper comprehension of the idea and significance of the key profitability performance drivers in Nepalese commercial banks, as well as their influence on the profitability performance of commercial banks, is made possible by the theoretical review. This section's information is relevant and spectacular since it links concepts and meanings concerning these aspects from many sources.

#### **Economies of Scale Theory**

A key idea in microeconomics is the concept of economies of scale, which explains how higher production volume results in lower costs per unit. Within the banking sector, this refers to the possible cost advantages that larger banks may have over smaller ones because of these cost advantages and operational efficiency that boost profitability. In the United States banking sector, for example, study by Berger et al. (1997) discovered evidence of economies of scale, showing that larger banks had lower average expenses per dollar of assets compared to their smaller counterparts. The capacity of larger banks to use their resources more profitably and effectively may be the source of this cost advantage.

#### **Buffer Theory**

The buffer hypothesis, first out by Calem and Rob in 1996, addresses how banks handle their capital sufficiency and how it affects their bottom line. The capital adequacy ratio, which represents the ratio of capital (such as reserves and cash from shareholders) to risk-weighted assets, can be thought of as a straightforward indicator of a bank's financial health. According to the buffer hypothesis, banks should have more capital on hand than

is necessary to comply with regulations. By acting as a safety net, this extra cushion enables banks to withstand unforeseen losses without endangering their stability. The goal of banks holding excess capital on hand is to prevent financial hardship in hard times. The theory does concede, though, that having too much money can reduce profitability because it might have been put toward more profitable ventures or paid back to shareholders. In conclusion, the buffer theory highlights that banks must balance maximizing profitability with adhering to regulatory capital requirements. It pushes them to maintain a healthy cushion to absorb any losses without unduly limiting their ability to engage in profitable endeavors. This strategy guarantees a respectable return on investment while bolstering a bank's resilience in the face of uncertainty.

### **Pecking Order Theory**

The Pecking Order Theory, which was put out by Myers and Majluf in 1984, sheds light on how businesses select their funding sources. Essentially, this idea proposes that when it comes to supporting their operations, businesses have a preferred "pecking order". Businesses emphasize internal finance, including retained earnings, as the most desirable source, in accordance with the pecking order. Instead of issuing more equity if internal funds are inadequate, they then resort to debt financing. This preference's justification is the alleged knowledge imbalance between investors and managers. Businesses feel that issuing fresh shares, which might be seen as an indication that the company's stock is overpriced, is more likely to send negative signals to the market than utilizing debt or internal money. 10 Pecking order gives internal funds priority, which may cause institutions to keep more liquidity on hand to guarantee easily accessible resources.

### **Efficiency Theory**

The notion of efficiency in banking profitability posits that a bank's profitability is closely linked to its operational efficiency. This entails prudent resource use, efficient procedures, and cost control. In order to achieve maximum productivity, banks that adhere to this principle try to spend as little as possible while producing as much as they can. Banks that exhibit efficiency are better able to withstand fluctuations in the economy and effectively adjust to shifts in the financial landscape, hence contributing to their sustained profitability.

### **Agency Theory**

A framework for examining the interaction between principals (like shareholders) and agents (like management or directors) in businesses is provided by agency theory. Given that agents might not always work in the principals' best interests, it implies that conflicts of interest may develop between these parties. By guaranteeing that management's decisions are in line with shareholders' interests, independent directors play a critical role in reducing these conflicts. This is especially important for commercial banks since there might be conflicts there because shareholders entrust management with their cash. Since they are not directly involved in day-to-day operations, independent directors provide unbiased monitoring, which fortifies the governance framework. Their capacity to improve corporate governance, control risks, and participate in strategic choices all have an influence on bank profitability. Independent directors make sure that the long-term interests of the bank and its shareholders are put first by closely examining executive actions. The significance of independent directors in enhancing corporate governance procedures and impacting business performance is bolstered by a 2010 research by Adams et al. titled "The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey".

### **Corporate Governance Theory**

According to corporate governance theory, having an ideal board size is essential for making decisions that are well-informed. A board that grows too big can find it difficult to come to a conclusion quickly and in agreement. On the other hand, an undersized board could not include a variety of viewpoints. The importance of board independence in reducing conflicts of interest is highlighted by corporate governance. The presence of independent directors who can provide unbiased supervision and question management choices is made possible by a properly sized board. A research by Al Manaseer et al. (2012) found that corporate governance elements like board size had a detrimental impact on banks' profitability; a larger board results in less capacity for oversight and longer decision-making procedures. Similarly, bigger boards may detract from a company's success, according to Hermalin & Weisbach (2003).

### **2.2 Empirical Review**

Thota (2013) looked at the variables affecting 108 Indian commercial banks' profitability between 1999 and 2011, the year after the reform. They discovered that internal bank-specific characteristics as well as external macroeconomic factors have an impact on

profitability, as shown by return on equity (ROE) and return on asset (ROA). But the effect differs depending on the kind of bank. The size of the bank and the liquidity situation had no discernible effects on profitability metrics. The profitability of international and private banks was positively correlated with credit risk; on the other hand, overhead expenses had a favorable influence on ROE for foreign and private banks but a negative impact on public sector banks. Furthermore, across all banks and public banks, better capital strength corresponded with lower ROE but higher ROA, suggesting a complex connection between capital levels and profitability. Macroeconomic variables had varying effects on profitability depending on the form of ownership; for all banks and private banks, they had considerable influence on ROA but inconsistent effects on ROE. Overall, the study emphasizes the intricate relationship that exists between profitability, external macroeconomic variables, and internal bank characteristics. It also underscores the necessity of customized strategies that take into account market circumstances and bank ownership.

In the context of Sri Lankan commercial banks, Weersainghe and Perera (2013) investigated the link between bank size, regulatory capital ratio, liquidity, operational cost efficiency, interest rates, and profitability. They discovered that because of economies of scale, larger banks often produced more profits than smaller banks with higher required capital ratios. The results of their panel regression study showed that bank profitability, operational cost efficiency, and liquidity are all negatively correlated. Interestingly, they also found a negative correlation between interest rates and bank profitability, suggesting that settings with lower interest rates may promote more banking activity and thus more profitability. Overall, their research highlighted the intricate interactions between many elements affecting Sri Lanka's commercial banks' profitability.

Using both internal and external (market) profitability assessments, Lipunga (2014) identified the factors that affected the profitability of listed commercial banks in developing nations, with a special emphasis on Malawi between 2009 and 2012. Both multivariate regression analysis and correlation were employed in the investigation. The metrics of internal and external profitability are Return on Assets (ROA) and Earnings Yield (EY), respectively. The regression analysis's findings show that while capital

sufficiency has a negligible influence, bank size, liquidity, and management effectiveness all statistically positively affect ROA. However, the data also indicate that bank size, capital adequacy, and management effectiveness have a considerable impact on earnings yield, whereas liquidity has a negative impact on earnings yield.

Pandey (2015) studied issues related to the banking sector's profitability factors in Nepal. A sample of thirty commercial banks encompassing the years 2005 to 2015 was selected in order to study the factors that influence profitability. Specifically, the relationship between loan growth and deposit growth, investment growth, NRB (Nepal Rastra Bank) balance to deposit, and branch count was determined. The research used data from 2019 March to 2021 January in the quarterly unaudited data foundation for the CAMEL (Capital adequacy ratio, Asset quality, Managerial efficiency, and Liquidity) examination of seven commercial banks. The opinions of 100 bank workers from various commercial banks in Nepal are gathered for the study on the risk assessment method conducted by the bank. According to the study, the relationship between total deposit and NRB balance and deposit growth is positive, indicating a greater degree of effect from these factors. According to CAMEL research, asset quality and capital sufficiency have a significant impact on ROA. It implies that the ROA would be higher the more capital adequacy and asset quality there were. Additionally, ROA is negatively correlated with earnings, liquidity, and management effectiveness.

Sheefeni (2015) examined the macroeconomic factors that influence Namibian commercial banks' profitability. Using quarterly data from 2001 to 2014, the study used forecast error variance decomposition, co integration, impulse response functions, and unit root approaches. The data indicates that the profitability of commercial banks in Namibia is not greatly impacted by factors like the GDP, interest rate, or inflation rate. This implies that the profitability of the commercial banks is not much impacted by the macroeconomic situation.

Using panel data, Samad (2015) investigated the effects of macroeconomic factors and bank-specific attributes on the profitability of Bangladesh's banking sector. The financial reports of 42 commercial banks in Bangladesh were reviewed in order to determine how

macroeconomic factors like economic development and bank-specific characteristics like financial risk, operational effectiveness, and size affected bank profitability. The loan-deposit ratio, loan-loss provision to total assets, equity capital to total assets, and operational expenditures to total assets are among the major elements specific to banks, according to the results. Macroeconomic variables and bank sizes have little effect on earnings.

The profitability factors of Bangladesh's private commercial banks for the years 2014 and 2015 were disclosed by Islam et al. (2017). All 11 of Bangladesh's private commercial banks' yearly statistics for the years 2014 and 2015 were included in the study. Tests of the hypothesis and identification of the important drivers of profitability were conducted using multiple regression analysis. The study's empirical results demonstrated that neither asset size nor the Net Interest Margin ratio significantly impacted profitability. However, out of all the factors, the effect of nonperforming loans to total loans (NPL) on profitability was shown to be the most significant. Moreover, investment activities, particularly those involving private sector shares and debentures, also positively impact return on equity (ROE). The results also suggested that these banks were more lucrative because they engaged in a variety of banking operations, including investing activities. Although diversified banking operations are desirable, there may be an increase in risk if these operations involve a larger percentage of volatile trading activity as opposed to low-risk revenue sources like commissions and fees. In order to strengthen the stability and power of the banking industry, policy should be oriented in a way that would improve the financial institutions' efficiency and resilience.

Yüksel and colleagues (2018) determined the factors that influence bank profitability in thirteen post-Soviet nations. In this domain, the Generalized Method of Moments (GMM) and fixed effects panel regression are used to examine yearly data from 1996 to 2016. The quantity of the loan, non-interest revenue, and economic growth are shown to be important indicators of profitability. Furthermore, the worldwide mortgage crisis of 2008 had a direct impact on post-Soviet nation-state bank profitability. The preliminary findings indicate that non-interest income and economic growth with profitability are positively correlated. This finding showed that a rise in the banks' non-interest revenue,

such as commissions and credit card fees, had a beneficial impact on their financial performance and increased bank profitability. This study also shows that bank profitability is positively impacted by economic growth. This finding contributes to our understanding of the relationship between post-Soviet countries' increased GDP and better bank profitability. In the end, the loan-to-GDP ratio and bank profitability in post-Soviet nations have a negative correlation. This indicates that an increase in the ratio of total loans to GDP has a negative impact on the banks' financial performance. It is advised that banks in post-Soviet nations concentrate on methods to raise their non-interest revenue while implementing this outcome. Furthermore, it is crucial that these institutions exercise caution and risk aversion while making loans to their clients.

The profitability of commercial banks in Pakistan was examined by Sarwar et al. (2018), taking into account both external and internal factors. Data from 21 commercial banks listed between 2006 and 2015 on the Pakistan Stock Exchange (PSX, formerly known as the Karachi Stock Exchange) was gathered. To investigate the effects of both internal and external profitability variables, panel regression analysis is employed. Data analysis is accomplished through the use of E-views. In order to gauge profitability, ROA and ROE are used as stand-in variables. Bank size, capital sufficiency, asset quality, asset management, liquidity, quality of management, and financial risk are examples of internal factors; GDP, inflation, interest rates, and exchange rates are examples of external drivers. The findings show that, among internal variables, asset management, liquidity, capital adequacy ratio, and bank size are important predictors of banks' profitability. While interest rates are relevant at the 10% significance level, GDP and currency rates are important external drivers of profitability. For the banks to become more profitable, the quality of their assets must be improved. The nation's budgetary policy need to be in line with the requirements of the banking industry.

During a 16-year period spanning from 2000 to 2015, Serwadda (2018) investigated the potential influence of internal characteristics particular to banks on the profitability of commercial banks in Hungary. With 416 observations, a sample of 26 commercial banks was used in the study. The study modified bank-specific (internal) components as independent variables and utilized return on average assets (ROA) as a stand-in for bank

profitability. These include bank size, net interest margin, overhead expenses, capital adequacy ratio, liquidity risk, and asset quality (nonperforming loans). For the investigations, the study took into account panel regressions, descriptive statistics, and correlation analysis. The purpose of the panel regression models is to assess how internal, bank-specific variables affect the profitability of banks. To determine which panel regression model was most suitable for the investigation, the Hausman specification test was run on the models. The empirical analysis shows that while bank size had a large beneficial influence on profitability, nonperforming loans, overhead expenses, and liquidity had a considerable negative impact. On the other hand, bank profitability was unaffected by the capital adequacy ratio and net interest margin. According to the report, the two bank-specific criteria that have the most influence on the profitability of commercial banks in Hungary throughout the study period are bank size and asset quality. The research recommended that as overhead expenses have a negative impact on bank profitability, commercial banks should work to control and reduce them in order to increase earnings. More specifically, management of commercial banks should maintain operational cost optimization while pursuing policies of income source diversification and routinely inspecting and supervising credit and liquidity risk indicators.

After the global financial crisis, Jain et al. (2019) looked at the factors influencing the performance of 45 commercial banks in India. In order to ascertain the influence of macroeconomic and bank-specific factors on the profitability of 45 commercial banks in India (26 public sector banks and 19 private sector banks), the random effect model was used to balanced panel data covering the years 2010 to 2016. According to the findings, private sector banks outperformed public sector banks in terms of performance. The model's conclusions showed that, while the capital adequacy ratio remained negligible, bank-specific indicators such as non-performing assets (NPAs), profit per employee, operational profit to total assets, and investment to total assets explained a major portion of the profitability of commercial banks. The profitability of the Indian commercial banks was significantly explained by macroeconomic factors including GDP, IIP, and WPI. This study revealed fresh information that will help us understand the profitability of commercial banks in developing nations like India.

In the private banking industry of Iraq, Al-Delawi (2019) looked at the analysis of bank profitability drivers, or the most often utilized rate of return on assets (ROA) in this field. The five years from 2010 to 2014 have been chosen for the study because this is the period of time when the global economic crisis occurred, leading to the bankruptcy of many public and private banks worldwide as well as significant changes in the global commercial banking industry, such as bank mergers and reacquisitions. The commercial banking industry has been impacted by each of these factors. The analysis's primary focus is on three variables: the level of financial leverage, the income tax rate, and the capital sufficiency of 10 active commercial banks in Iraq's private sector. The rate of return on assets is the dependent variable, and the three elements' results have been examined as independent variables. Additionally, the effects of the factors have been examined to determine the significance of trends and modifications of numerous positive and negative swings in bank profitability as well as the function of these variables in allowing the government to assist the industry.

According to Neupane's (2020) analysis, the concentration ratio, GDP growth, inflation, exchange rate, and banking sector development have a significant negative impact on the bank profitability of Nepalese commercial banks as measured by ROA. In contrast, internal factors such as bank size, capital base, deposit, loan, off-balance sheet activities, and branch count have no significant impact. The only factors that significantly impact NIM, another measure of bank profitability, are capital adequacy, the total number of branches, and the rate of inflation. This study concludes that external variables have a major impact on the profitability of Nepalese commercial banks as assessed by return on assets. Industry-specific external factors have a significant influence on return on assets, whereas macroeconomic variables have a minor but significant impact on the profitability of Nepal's commercial banks as determined by return on assets. Furthermore, the only factors that significantly influence the profitability as assessed by net interest margin (NIM) are capital sufficiency, the total number of branches, and the yearly inflation rate.

Hossain (2020) concentrated on the critical factors that affect the manufacturing enterprises that are listed on the Dhaka Stock Exchange (DSE) in terms of profitability. Information was gathered between 2014 and 2019 from several manufacturing firms that were listed on the DSE. The relationship between profitability and various determinants of profitability, such as liquidity, leverage, sales growth, management effectiveness, capital intensity, firm size, working capital, annual inflation, and GDP growth, was

established using Pearson's correlation and ordinary least squares regression models. The outcome of the regression analysis showed that leverage and liquidity had a statistically significant detrimental effect on profitability. However, there is a statistically significant positive correlation between profitability and capital intensity, sales growth, and management effectiveness. The study also showed that the GDP growth, working capital, yearly inflation, and business size had no discernible effects on profitability. The study discovered that the key factors influencing the manufacturing enterprises' profitability include capital intensity, sales growth, liquidity, leverage, and management effectiveness.

According to Co et al. (2021), there is a positive correlation between the debt-to-asset ratio and the profitability of listed rubber businesses in Vietnam, as determined by return on equity (ROE). However, there is a negative correlation between the debt-to-asset ratio and the long-term debt-to-asset ratio. The findings also showed that, although liquidity and the ratio of tangible fixed assets to total assets had negligible effects, firm size and revenue growth have a beneficial impact on profitability.

The profitability of state-owned commercial banks was investigated in connection to external and internal variables by Koroleva et al. in 2021. From 2007 to 2019, we used models of pooled regression, fixed effects, and random effects to examine the top five state-owned commercial banks in China. The findings indicate that internal variables have a beneficial impact on banks' profitability when assessed by size, credit quality, and liquidity. State-owned banks are more profitable than other banks because they are larger, have better credit quality, and have more liquidity. However, the external component, as shown by the GDP's natural logarithm, has a negative impact on banks' earnings. China's state-owned commercial banks are becoming more profitable as a result of the country's economic crisis.

According to Farooq et al. (2021), return on asset is significantly impacted by the following internal factors: capital adequacy ratio, deposit ratio, leverage ratio, liquidity ratio, and bank size. In contrast, GDP, inflation rate, and exchange rate significantly affect return on asset when it comes to macroeconomic factors. Conversely, among macroeconomic variables, only the inflation rate had a substantial impact on return on equity; in contrast, deposit ratio, leverage ratio, and operational efficiency all significantly

impacted return on equity. Additionally, when it comes to net interest margin, the following internal factors significantly affect it: capital adequacy ratio, deposit ratio, bank size, and branch count. On the other hand, interest rate, inflation rate, and exchange rate significantly affect net interest margin among macroeconomic factors.

Yuan et al. (2022) looked at how the commercial banks in Asian nations were affected by the factors that determine profitability. India and Bangladesh, two Asian nations, were chosen as the study's subjects. Additionally, the current study looks at how certain variables and macroeconomic variables affect the profitability of the private commercial banking industries in Bangladesh and India. The information was taken from the private commercial banks' annual reports for Bangladesh and India for the year. The private commercial banks in the sample, which was selected at random, came from Bangladesh and India. The data was analyzed using an estimating approach based on the panel data research methodology. Additionally, data was examined using the ordinary least squares (OLS) regression model. The Lagrange Multiplier (LM) Test by Breusch and Pagan was used to determine if the models were suitable. Microeconomic and bank-specific variables varied nearly identically for private banks in Bangladesh and India. The econometric program Eviews was used to evaluate all of the models and tests. The results of the current study show that the debt to asset ratio (DAR), strength of the bank size (BS), and return on asset (ROA) from the banks' particular factors are all positive and significant. It is discovered that banks have negative and noteworthy Deposit to Asset Ratios (DTAR) and Loan to Deposit Ratios (LDR). There is no positive or negative influence on the Equity to Asset Ratio (EAR) or Debt to Equity Ratio (DER).

According to Smolin et al. (2023), ownership structure, risk considerations, operational and financial indicators, and macroenvironmental variables all have an impact on banks' economic profit margins. We were able to ascertain the extent and direction of the relevant indicators' effect on the spread of economic value added of Russian commercial banks by using the econometric technique in this study. As a result, the conclusion of the relative stability over time of the economic value indicator for banks was reached. This conclusion may be justified by the significant amount of money invested in initiatives meant to increase the economic profit margin of banks. Also concluded is the detrimental

effect of bankruptcy risk on Russian banks' profitability, which was not previously examined using data on Russian banks.

Using the System GMM Estimator approach, Paukmongkol (2023) calculated the factors influencing the profitability of banks that are registered in Thailand. Bank statistics for the years 2010–2020. Three measures are used to assess profitability: net interest margin (NIM), return on equity (ROE), and return on assets (ROA) (NIM). The factors that determine a bank's profitability are unique to that bank. Economic and industry-specific factors pertaining to banking. The findings demonstrated that while asset quality and operational expenses have a negative impact on profitability, banks see a decrease in profitability when their asset sizes increase. Conversely, the gross domestic product, inflation, and capital adequacy all contributed to the increase in bank profits.

Simegnew (2023) demonstrated that the capital structure of Ethiopian commercial banks was significantly impacted by earnings volatility, profitability, non-debt tax shields, tangibility, and liquidity. However, it was discovered that the capital structure is not statistically significantly affected by growth or business size. In order to lower the weighted average cost of capital and raise shareholder wealth, Ethiopian commercial banks should focus more on earnings volatility, profitability, non-debt tax shields, tangibility, and liquidity when determining their ideal capital mix.

In light of the acquisition of two external factors, namely GDP and inflation, Alshammari et al. (2024) concentrated on identifying the profitability drivers and their influence on banking sustainability. The increase of deposits and loans are two internal drivers of the gross domestic product. Using the statistical program EViews V9 and the Panel Data application, the research was conducted on a sample of commercial banks listed on the Iraq Stock Exchange. Specifically, eight banks were chosen for the study period, namely Baghdad, Iraqi Commercial, Middle East, Investment, Iraqi National, Credit, Sumer Commercial, and the Iraqi Gulf. The objective of the study was to evaluate and measure the independent variable (determinants) and the dependent variable (banking sustainability), which was represented by market value added and earnings per share. The three models—aggregative regression, fixed effects, and random effects—were used to

guide the analysis. This study revealed that, at a significance level of 5% and 10%, the factors have a substantial impact on banking sustainability metrics. The study concluded that in order to strengthen the Iraqi banking sector, it is important to focus on measures of banking sustainability. A weak and unstable banking system might lead to a financial crisis, which can have a detrimental impact on other economic sectors.

Elgi and Karnasi (2024) demonstrated how factors like geopolitical tensions and post-pandemic circumstances affect Indonesian banking performance and contribute to global uncertainty. 34 commercial banks listed on the Indonesia Exchange Stock provided samples for this study, which employed a quantitative methodology and covered the years 2017–2023. Panel data regression is employed as a method of analysis. The independent factors in this study were bank size, bank capital, liquidity, credit risk, and inflation rate. On the other hand, return on asset was used to gauge bank success. The study's final conclusions were that, although the other factors had no bearing on bank performance, bank size and inflation rate had a beneficial influence on return on asset.

Astari and Rejekiningsih (2024) looked at the variables that affected Indonesian conventional banks' profitability between 2010 and 2019. Return on Assets (ROA), a ratio, is used in this study to characterize the profitability of Indonesia's commercial banks. With a research sample of six pools of conventional banks—Persero Banks, Foreign Exchange Private Banks, Non-Foreign Exchange Private Banks, Regional Development Banks (BPD), Joint Venture, and Foreign Banks—the study's goal is conventional banking in Indonesia. In this study, panel data regression analysis using random effect model (REM) was the analytical technique employed. The findings of the study indicate that Return on Assets (ROA) is positively and significantly impacted by the spread interest rate, Bank Indonesia Certificate (SBI), and third party funds (DPK). This indicates that Return on Assets (ROA) is significantly impacted negatively by the interbank liability variable. Spread interest rates, SBI, third-party funds, and interbank obligations all have an impact on ROA concurrently.

Alshmmari et al. (2024) used GDP and inflation as two external drivers to identify the profitability factors and their effects on the sustainability of banks. The increase of

deposits and loans are two internal drivers of the gross domestic product. Using the statistical program EViews V9 and the Panel Data application, the research was applied to a sample of commercial banks listed on the Iraq Stock Exchange, which was represented by the selection of eight banks: Baghdad, Iraqi Commercial, Middle East, Investment, Iraqi National, Credit, Sumer Commercial, and the Iraqi Gulf. The research was conducted with the goal of evaluating and measuring the independent variable (determinants) and the dependent variable (banking sustainability), which was represented by market value added and earnings per share. The three models—aggregative regression, fixed effects, and random effects—were used to guide the analysis. This study revealed that, at a significance level of 5% and 10%, the factors have a substantial impact on banking sustainability metrics. Indicators of banking sustainability were highlighted in the study's conclusion, which underscored the necessity of supporting Iraq's banking industry. A feeble and unstable banking system fosters unrest and eventually results in a financial crisis that has a detrimental impact on all other economic sectors.

Minovich (2024) examined commercial banks' profitability and profitability metrics. The range of banking services is enormous, and new developments are added on a regular basis. The bank receives commission income primarily from the following services: cash register services for both legal and physical entities; plastic card operations; bank guarantee issuance; banking services for customers in currency contracts; brokerage services in the securities market; etc. Most banks in numerous foreign nations provide free settlement, cash, and other services to their clients. Banks were forced to stop this technique as a result of the decline in interest margin, which was caused by the discrepancy between the average values of attracting and putting resources. We may currently observe a rise in commission income relative to banks' overall revenue.

The impact of liquidity, asset quality, market sensitivity, and efficiency on profitability as determined by ROA was examined by Rohamana and Kristijadi (2024). The Loan Deposits Ratio (LDR) and Asset Liquid Ratio (ALR) are two metrics used to monitor liquidity. The ratio of non-performing assets (NPA) to non-performing loans (NPL) indicates the quality of an asset. Interest Risk Ratio (IRR) and Net Open Position (NOP)

are two metrics used to quantify market sensitivity. The Cost Income Ratio (CIR) and Fee-Based Income Ratio (FBIR) are two metrics used to analyze efficiency. A total of 120 pieces of data were analyzed for this study, which used 24 National Private Commercial Banks that were listed from 2018 to 2022 on the Indonesia Stock Exchange as its sample. Panel data regression analysis is the analytical method employed, and the type of inquiry is causality research. The Random Effect Model is the most effective model, as demonstrated by the Chow and Hausman tests used in the panel data regression model selection process. The study's result demonstrates that while CIR has a large detrimental impact, ALR, IRR, and FBIR have considerable favorable effects. While the NPL, NPA, and NOP ratios have a negligible negative impact on ROA, the LDR ratio has an insignificant beneficial effect.

Table 1

*Review Table*

S. N	Author(s)	Variables	Methodology	Major Findings
1	Thota (2013)	Dependent Variables ROA, ROE Independent variables Bank size Inflation rate Assets quality Overhead cost GDP growth rate	correlation models	The findings show that the profitability measure's return on equity (ROE) and return on asset (ROA) are unaffected by the size or liquidity situations of banks.
2	Weersainghe and Perera (2013)	Dependent variable Return on assets (ROA) Independent variables Capital adequacy Credit risk Bank size	Multiple panel regression model.	The study found that profitability was not significantly impacted by asset size. Although interest income is typically thought of as a

		Liquidity risk Operational cost GDP growth rate Interest rate		bank's primary source of revenue, our analysis revealed that the NIM/assets ratio had no discernible effect on profitability. But it was discovered that the loan amount was the main factor affecting profitability. T.
3	Lipunga(2014)	Independent variables Return on assets Independent variables Bank size Capital adequacy Liquidity Management efficiency Earning yield	correlation and multivariate regression analysis model	The outcome demonstrates that, thanks to economies of scale, big banks earn bigger profits than well-run institutions with higher statutory capital ratios.
4	Pandey (2015)	Dependent Variable Return on assets (ROA) Independent Variables CAR,NPL, BASERATE, Operating profit, loan to deposit ratio	Correlation and Multiple linear regression models	The findings show that the profitability measure's return on equity (ROE) and return on asset (ROA) are unaffected by the size or liquidity situations of banks.
5	Sheefeni (2015)	ROE = Return on Equity, ROA = Return on Assets, GDP Inflation	time series econometric techniques	The regression analysis's findings indicate that while capital sufficiency has a negligible influence on ROA, bank size, liquidity, and

		Interest rate		management effectiveness have statistically significant effects. However, the data also indicate that bank size, capital sufficiency, and management effectiveness have a considerable impact on earnings yield, whereas liquidity has a little impact.
6	Samad (2015)	Dependent variables : ROA Independent variables; Loan Dep LLPTA EQTA OPEXTA Deposit GDP	The panel regression model.	The findings show that Namibia's commercial banks' profitability is unaffected by the following factors: interest rates, inflation rates, and gross domestic product.
7	Islam et al (2017)	Dependent Variable Return on equity Independent Variable Assets size Capital adequacy Assets quality Deposits Investment activities	Regression analysis model.	According to the study, there is a substantial correlation between the increase of credit and deposits, and there is a considerable correlation between ROA and operational profit and net profit.

8	Yüksel et al (2018)	<p>Dependent variables</p> <p>Return on equity</p> <p>Independent variables</p> <p>Inflation Size Loan deposit ratio Capital adequacy ration Loan gdp ratio Interest rate</p> <p>Economic growth</p>	<p>Fixed effect panel regression and GMM models</p>	<p>The findings show that the profitability measure's return on equity (ROE) and return on asset (ROA) are unaffected by the size or liquidity situations of banks.</p>
9	Sarwar et al (2018)	<p>Independent variables;</p> <p>Bank Size, Capital Adequacy, Assets Quality, Liquidity, Assets Management, Management Quality, Financial Risk</p> <p>Dependent variables :</p> <p>Return on Assets</p> <p>Return on Equity</p>	<p>Panel Regression model.</p>	<p>The findings show that Namibia's commercial banks' profitability is unaffected by the following factors: interest rates, inflation rates, and gross domestic product.</p>
10	Serwadda (2018)	<p>Dependent variables</p> <p>ROA</p> <p>Independent variables</p> <p>NPL, OH, BS, NIM, LIQR,CAD</p>	<p>panel regressions, descriptive statistics and correlation analysis</p>	<p>According to the study, there is a substantial correlation between the increase of credit and deposits, and there is a considerable correlation between ROA and operational profit and net profit.</p>
11	Jain et al. (2018)	<p>Dependent Variables</p> <p>ROE</p> <p>Independent Variables</p> <p>Capital adequacy Assets quality Management</p>	<p>Random effect model</p>	<p>The loan-deposit ratio, loan-loss provision to total assets, equity capital to total assets, and operational expenditures to total</p>

		efficiency Earnings quality Liquidity Inflation GDP Industrial production		assets are among the major elements particular to banks, according to the results. Macroeconomic variables and bank sizes have little effect on earnings.
12	Al-Delwai (2019)	Independent variables: Financial leverage, Tax rate, Capital adequacy Dependent variable Return on assets (ROA)	Regression analysis model.	The findings of the analysis indicate that the concentration ratio, GDP growth, inflation, exchange rate, and banking sector development have a significant negative impact on the bank profitability, as measured by ROA, of Nepalese commercial banks.
13	Neupane (2020)	Dependent variable Return on assets Net interest margin Independent variables Size Capital adequacy ratio Deposit Loan Bank supervision department Inflation	Panel data regression model.	The study found that profitability was not significantly impacted by asset size. Although interest income is typically thought of as a bank's primary source of revenue, our analysis revealed that the NIM had no discernible effect on profitability. But it was discovered that the loan amount was the main factor affecting profitability.

14	Hossain (2020)	<p>Dependent Variables</p> <p>Return on assets</p> <p>Retrun on equity</p> <p>Independent Variables</p> <p>Liquidity Leverage</p> <p>Management efficiency</p> <p>Sales growth Capital intensity</p> <p>Working capital Firm size</p> <p>Annual inflation GDP annual growth</p>	<p>Pearson's correlation and ordinary least squares regression models</p>	<p>The findings show that the profitability measure's return on equity (ROE) and return on asset (ROA) are unaffected by the size or liquidity situations of banks.</p>
15	Co et al. (2021)	<p>Dependent Variables</p> <p>ROE</p> <p>Independent Variables</p> <p>DTA, STD, LTD, SIZ, TAN, LIQ</p>	<p>Regression analysis model.</p>	<p>This finding indicates that a rise in the banks' non-interest revenue, such as commissions and credit card fees, has a beneficial impact on their financial performance and enhances bank profitability.</p>
16	Farooq et al. (2021)	<p>Dependent variables:</p> <p>Return on equity</p> <p>Retrun on assets</p> <p>Net interest margin</p> <p>Independent variables: Capital adequacy Operational efficiency Deposits Liquidity Leverage Size Branches GDP Inflation Interest rate Exchange rate</p>	<p>Descriptive statistics and fixed effects regression model. .</p>	<p>The empirical results show that while bank size had a large beneficial influence on profitability, nonperforming loans, overhead expenses, and liquidity had a considerable negative impact.</p>

17	Yuan et al. (2022)	<p>Dependent variables</p> <p>Return on Assets</p> <p>Return on Equity</p> <p>Independent variables</p> <p>Bank Size, Debt to assets ratio, Deposit to assets ratio, Equity to assets ratio, Debt to equity ratio , and Loan to deposit ratio.</p> <p>GDP growth rate</p> <p>inflation</p>	<p>ordinary least squares (OLS) regression model</p>	<p>The study's conclusions demonstrate that a bank's size has a big impact on its profitability. Therefore, compared to small banks, the profitability of large banks may be superior.</p>
18	Smolina et al. (2023)	<p>Dependent variable</p> <p>Return on assets</p> <p>Independent variable</p> <p>Bank size</p> <p>Level of services</p> <p>Credit risk</p> <p>GDP growth rate</p> <p>Inflation</p>	GMM model	<p>The empirical results show that while bank size had a large beneficial influence on profitability, nonperforming loans, overhead expenses, and liquidity had a considerable negative impact.</p>
19	Paukmongkol (2023)	<p>Dependent variables</p> <p>Return on Assets ,Return on Equity</p> <p>Independent variables</p> <p>Net interest margin</p> <p>Asset quality      Capital adequacy      Asset size</p> <p>Operating costs      Gross domestic product      Inflation</p> <p>Policy interest</p>	<p>Multiple regression model.</p>	<p>The empirical results show that while bank size had a large beneficial influence on profitability, nonperforming loans, overhead expenses, and liquidity had a considerable negative impact.</p>

20	Simegnew (2023)	Dependent variable Leverage Independent variable Profitability Non-debt tax-shield Earnings volatility Firm's growth Firm's size Liquidity Tangibility	Multiple linear regressions model.	The empirical results show that while bank size had a large beneficial influence on profitability, nonperforming loans, overhead expenses, and liquidity had a considerable negative impact.
21	Elgi and Karnasi (2024)	Dependent variable Return on assets Independent variable Bank size Bank capita Liquidity Credit risk Inflation rate	Panel data regression analysis model.	According to the findings, public sector banks did not perform as well as private sector banks did. The model's conclusions showed that, while the capital adequacy ratio remained negligible, bank-specific indicators such as non-performing assets (NPAs), profit per employee, operational profit to total assets, and investment to total assets explained a sizable portion of the profitability of commercial banks.
22	Astari and Rejekiingsih (2024)	Dependent variable Return on assets Independent variable	Panel data regression analysis model.	The findings of the analysis indicate that the concentration ratio, GDP growth, inflation,

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Spread interest rate Certificate of bank Indonesia(SBI) Third party funds Interbank liabilities		exchange rate, and banking sector development have a significant negative impact on the bank profitability, as measured by ROA, of Nepalese commercial banks. Conversely, internal factors such as bank size, capital base, deposit, loan, off- balance sheet activities, and branch count do not significantly affect the bank profitability. Another measure of bank profitability, NIM is primarily impacted by the rate of inflation, the total number of branches, and capital adequacy.
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23 Alshmmari et al. (2024)	Dependent variable Return on assets Independent variable Loan, Growth, Inflation	Aggregative regression model fixed effects model, random effects model	The the impacts of the variables have been examined in order to determine the significance of trends of numerous positive and negative fluctuations that affect banks' profitability as well as the function of these factors in allowing to assist the industry.
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24	Minovich (2024)	Interest margin	Regression model.	The study's conclusions demonstrate that a bank's size has a big impact on its profitability. Therefore, compared to small banks, the profitability of large banks may be superior. Given that the majority of internal factors have a major effect on profitability, bank management quality is crucial to profitability. Only the GDP and interest rate are external factors that affect earnings.
25	Rohamana and Kristijadi (2024)	Dependent variables Retrun on assets Independent variable Loan deposit ratio Assets liquid ratio Non-performing loan Non-performing assets Internal rate of return net open position cost income position fee-based income ratio	Panel date regression analysis model.	The findings of the analysis indicate that the concentration ratio, GDP growth, inflation, exchange rate, and banking sector development have a significant negative impact on the bank pofitability, as measured by ROA, of Nepalese commercial banks.

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### **2.3 Research Gap**

Research gap is the main motives that encourage conducting in particular field and topic. It is the untouched points that previous studies unable to covered. This research study is related with the relation between profitability and capital structure of Nepalese commercial banks. On the basis of previous articles on this topic this research is difference in following manner. In this study purposive sample, selection was used whereas previous studies random sample selection were used. In this study only commercial banks are focused which is based on the data of published by NRB. The study is based on situational approach which covers the recent scenarios and circumstances of banking sectors.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

In this study research methodology, describe the methods and processes applied in the entire aspect of the study. This chapter describes research design, population and sample, sources of data and method of data analysis.

#### **3.1 Research Design**

With regarding the objective and the problem, statement with the philosophy of the different research descriptive and causal comparative research approach has found appropriate for this study.

The descriptive research design is used to describe consequences and its different characteristics. It is concerned with gaining a deeper knowledge of what the phenomenon is rather than why or how it takes place. It therefore, describes the subject of the research without addressing why it happens.

On the other hand causal comparative research design is used to identify the cause-effect relationship between the dependent and independent variables. This helps to know the consequences or causes difference already existing among or different groups.

#### **3.2 Populations and Sample and Sampling Design**

According the report published by Nepal Rastra Bank there are 20 commercial banks in Nepal. Out of 20 commercial banks, this research has conduct by taking sample of top five commercial bank with highest paid up capital in fiscal year 2079/80. For the sample selection convenience sampling technique was used. Therefore the adequate secondary data are collected either from the report published by the commercial banks on their website.

1. Global IME Bank Limited
2. Nepal Investment Mega Bank Limited
3. Nabil Bank Limited
4. Kumari Bank Limited
5. Prabhu Bank Limited

Table 2

*Paid Up Capital of Top Five Commercial Banks in F.Y 2079/80*

Bank Name	Paid up capital (in Arba)
1. Global IME Bank Limited	36.12
2. Nepal Investment Mega Bank Limited	34.12
3. Nabil Bank Limited	27.05
4. Kumari Bank Limited	26.22
5. Prabhu Bank Limited	23.54

Source: NRB (2024)

**3.3 Nature and Source of Data**

Secondary data for this study is gathered from linked banks' annual reports and websites. Secondary data refers to information that has previously been gathered and utilized by another researcher, and is made available to other researchers in the form of published statistics. Therefore, the primary sources and data kinds are these published sources, including books, journals, articles, NRB reports, annual reports of the chosen banks, and other theses pertaining to this subject.

**3.4 Method of Analysis**

Eleven years' worth of data, from 2012–2013 to 2022–2023, were obtained from the annual reports of sample banks in order to meet the study's objectives. Owing to data collected over an 11-year period, the outcome will have more precision and efficiency as well as a degree of flexibility. Because of the time-series information, it also captures the dynamic change in the nature of the data.

The study makes use of a wide range of graphical tools, including line, bar, and pie charts, in addition to other descriptive statistical tools, such mean, median, and standard deviation. Additionally, inferential statistical methods like regression and correlation are used in the study to characterize the nature of the relationship between dependent and independent components. Multivariate Regression Analysis is used in the research to examine how independent factors affect the dependent variable. A statistical method for

examining the relationship between several independent factors and how they affect the dependent variable is multivariate regression analysis.

### **3.4.1 Descriptive Statistics**

During the years 2012–13 to 2022–23, descriptive statistics help simplify large data sets in a meaningful way (e.g., mean, standard deviations, minimum and maximum values of variables used to explain the characteristics of sample banks). They do this by presenting numerical data in a more readable and visually appealing format.

### **3.4.2 Correlation Analysis**

A statistical method used to assess the degree of relationship between two or more variables is correlation. The variables are said to be co-related if changes in one have an impact on changes in the other. It is referred to as simple correlation when it is used to quantify the relationship between two variables. The degree of link between two sets of figures is measured by the coefficient of correlation. Correlation analysis is used in this study to look at the relationship between the independent variables (capital adequacy ratio, liquidity, interest rate spread, nonperforming loan, credit to deposit ratio, operating expenses, bank size, GDP growth rate, and inflation) and the dependent variables (return on assets and return on equity).

### **3.4.3 Regression Analysis**

A group of statistical methods known as regression analysis are utilized to determine the relationships between one or more independent variables and a dependent variable. Its use also includes forecasting future relationships between these variables and assessing the correlations between them. It is possible to quantify the average association between several variables by using this analytical method. Additionally, it describes various statistical significance tests for model validation, including the F-test, t-test, and linear regression analysis. All models are tested using t-tests with the Statistical Package for the Social Sciences (SPSS 25) in order to evaluate individual effects.

### **3.4.4 Model Specification**

The study use econometric models to examine the effects of many internal and external factors on the profitability of commercial banks in Nepal.

The influence of both external and internal variables on the profitability of Nepal's commercial banks will be investigated using the regression model below, which will aid in our understanding of the nature of the connection between dependent and independent factors:

$$Y_{it} = \alpha_{it} + \beta_{it} X_{it} + \epsilon_{it} \dots\dots\dots(1)$$

Where,

$Y_{it}$  is the sum of Bank I's ROA and ROE performance at time t.

i = Particular Bank

t= Temporal

$\alpha_{it}$  = Constant

Independent Variables =  $X_{it}$

$\beta_{it}$  = Indicates how much the dependent and independent variables are related.

$\epsilon_{it}$  = Error term

The baseline model will be created by expanding equation (1) to include the variables mentioned above, as follows:

Model 1

$$ROA = \alpha + \beta_1 CAR + \beta_2 LIQ + \beta_3 YTD + \beta_4 NPL + \beta_5 CDR + \beta_6 OPEX + \beta_7 SIZE + \beta_8 GDP + \beta_9 INF + \epsilon_t$$

Model 2

$$ROE = \alpha + \beta_1 CAR + \beta_2 LIQ + \beta_3 YTD + \beta_4 NPL + \beta_5 CDR + \beta_6 OPEX + \beta_7 SIZE + \beta_8 GDP + \beta_9 INF + \epsilon_t$$

Where,

CAR = Capital Adequacy

LIQ = Liquidity

YTD = Interest Rate Spread

NPL = Non-performing Loan

CDR = Credit to Deposit Ratio

OPEX	= Operating Expenses
SIZE	= Bank's size
GDP	= GDP Per Capita Growth
INF	= Inflation
$\alpha$	= Constant
et	= Error term

The parameters of the independent variables are  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ ,  $\beta_8$ , and  $\beta_9$ .

### 3.5 Research Framework and Definition of Variables

A conceptual framework is a basic structure made up of abstract elements that represent the experiential, analytical, and observational aspects of a process or system that is being thought about. Anticipated outcomes are based on the combination of these elements. The framework is used in research to outline possible directions or to express a preferred method of approaching a topic. It shows the relationships between dependent and independent variables by presenting a graphical depiction of the study's variables. Return on equity (ROE) and return on assets (ROA) were the dependent variables utilized in this study to assess a bank's performance.

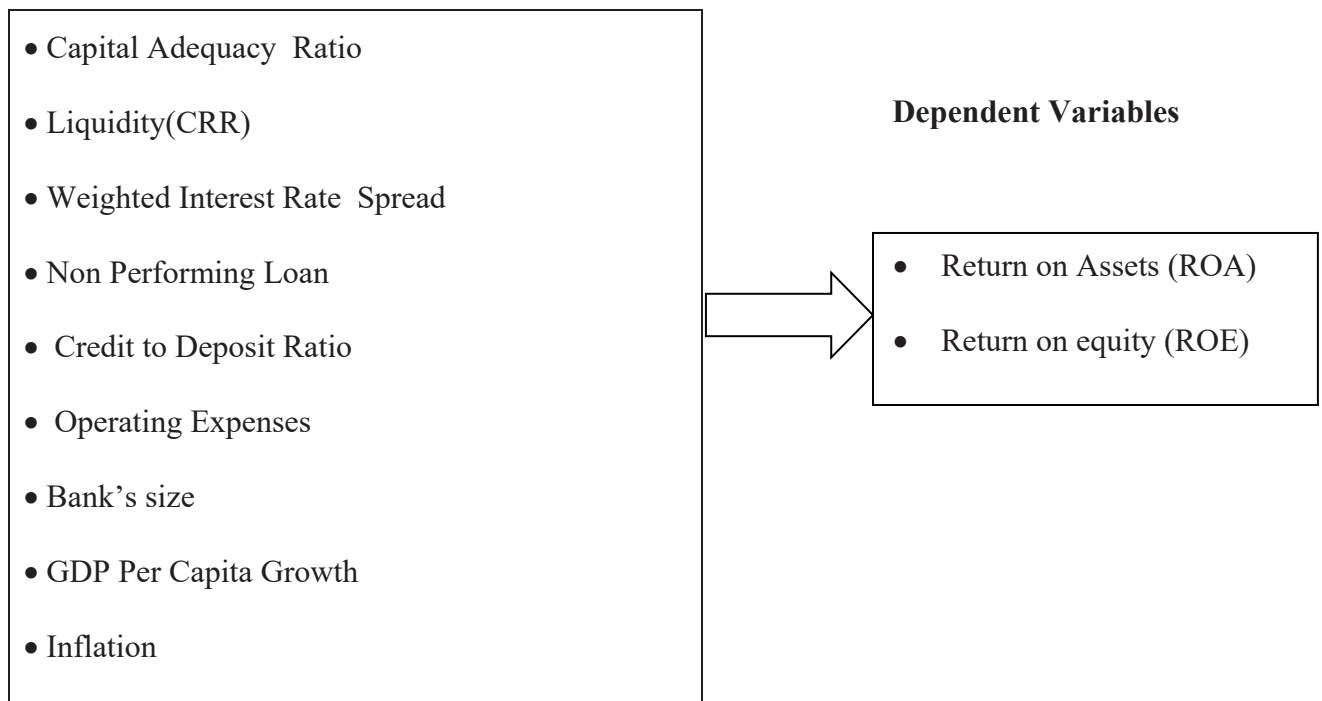
Table 3

#### *Explanation of Variables*

Variables	Measures	Notation
Return on assets	Net Income/ Total Assets	ROA
Return on Equity	Net Income/ Equity	ROE
Capital Adequacy	Total Capital/ Total Risk Weightage Assets	CAR
Liquidity	Total Loans/ Total Deposits	LIQ
Interest Rate Spread	Lending Rate - Deposit Rate	IRS
Non-performing Loan	NPL/Total Loans	NPL
Credit to Deposit Ratio	Total Credit/ Deposit	CDR

Operating Expenses Ratio	Total operating expenses/Total assets	OPEX
Bank's size	Natural Log of Total Assets of the Bank	SIZE
GDP Per Capita	Annual percentage growth rate of GDP per capita	GDP
Inflation	Annual Inflation Rate (CPI)	INF

### Independent Variables



Source: Sarwar (2018); Smolina et al. (2023)

Figure 1 Research Framework

### Dependent Variables

#### i. Return on Assets (ROA)

This ratio shows the profitability of a business relative to its total assets. For a manager, investor, or analyst, it offers insight into how successfully a company's management uses its assets to create earnings. Usually, one divides total assets by net income to calculate it. The amount of money withdrawn from the company's income statement is known as net income, or profit after taxes. In a similar manner, assets are taken off of the balance sheet, which includes cash and cash-equivalent items such as inventory, land, depreciated capital equipment, receivables, and the value of intellectual property. Here is how this ratio is computed:

$$\text{Return on Assets} = \frac{\text{Net Income}}{\text{Total Assets}}$$

## ii. Return on Equity (ROE)

A business's profitability in proportion to its equity is measured by its return on equity. Return on equity, which is calculated by subtracting total liabilities from total assets, indicates how successfully a business leverages its investments to increase earnings. Stated differently, this ratio displays the amount of profit generated by each rupee of equity held by common stockholders. For prospective investors, who want to know how well a business will use their funds to create net income, this is a crucial metric. Here is how this ratio is computed:

$$\text{Return on Equity} = \frac{\text{Net Income}}{\text{Equity}}$$

## Independent Variables

### i. Capital Adequacy

The capital adequacy ratio of the bank evaluates its capacity to take on additional risks, such as credit risk and operational risk, among others, and to fulfill its commitments on schedule. In its most basic form, capital protects depositors and other lenders by serving as a safety net against any losses. According to Shrestha (2015), it is stated as a proportion of a bank's risk-weighted credit exposures.

As a proportion of a bank's risk-weighted credit exposures, it represents the available capital of the bank. is employed to safeguard depositors and advance the global financial systems' efficiency and stability.

It is computed as follows:

$$\text{Capital Adequacy} = \frac{\text{Total Capital}}{\text{Total Risk Weightage Assets}}$$

### ii. Liquidity(CRR)

The capacity of a bank to guarantee the availability of money to satisfy maturing debts or financial commitments at a fair price at all times is referred to as bank liquidity. Bank liquidity is the ability of a bank to hold money where it is needed, especially to meet

client withdrawal requests (Wasiuzzaman & Tarmizi, 2010). The loan to deposit ratio is typically used to gauge a bank's liquidity. Banks grant loans using the deposits they receive from clients. The bank will have a high liquidity ratio if it uses a sizable quantity of deposits to issue loans (Shrestha, 2019).

Liquidity is measured as:

$$\text{Liquidity (CRR)} = \frac{\text{Total Loan}}{\text{Total Deposit}}$$

### iii. Weighted Interest Rate Spread

The term "interest rate spread" refers to the differential in interest rates between deposits and loans. Interest rate spreads have a direct effect on financial institutions' profitability. It goes without saying that profitability rises with an interest spread rate and vice versa.

It is calculated as follows:

$$\text{Weighted Interest Rate Spread} = \text{Lending Rate} - \text{Deposit Rate}$$

### iv. Non-performing Loan

A non-performing loan (NPL) is the total amount of borrowed funds that the debtor has not been able to make regular payments on for a predetermined amount of time, usually 90 or 180 days. For the past few decades, financial institutions' non-performing loans (NPL) have been seen as a major problem in Nepal. Bank collapse is the direct result of a high level of non-performing loans in the banking sector.

It is calculated as follows:

$$\text{Non performing loan} = \frac{\text{Non performin Loan}}{\text{Total loan}}$$

### vi. Credit to Deposit Ratio

In banking jargon, the credit to deposit ratio is referred to as the CD ratio. It provides information on the percentage of bank deposit money that has been used for lending. The Nepal Rastra Bank sets the minimum CD-Ratio requirement for commercial banks based on deposit volume.

It is computed in the way that follows:

$$\text{Credit to deposit ratio} = \frac{\text{Total credit}}{\text{Total deposit}}$$

### **v. Operating Expenses Ratio**

Operating expenditures are the costs incurred by a firm while it carries out its operations. It varies depending on the organization and the type of business the enterprise engages in. Certain businesses are able to boost their revenue and obtain a competitive edge by effectively cutting their operational costs.

It is calculated as follows:

$$\text{Operating Expenses Ratio} = \frac{\text{Total operating Expenses}}{\text{Total assets}}$$

### **vi. Bank's Size**

A bank's ability, variety and quantity of manufacturing capabilities, and quantity and variety of services or companies it can offer to its clients at the same time are all measures of its scale. To put it simply, the best measures of a company's size are the size of its management team or the quantity of assets compared to other businesses in the same sector (Sritharan, 2015).

Size is sometimes determined by looking at gross sales or gross asset value, the number of employees, the logarithm of total assets, and sales turnover. In order to achieve better financial health and success, a company's growth in size may manifest itself as an increase in revenues, earnings, assets, or workforce (Tharu & Shrestha, 2019).

The Bank's size has been determined by looking at all of its assets.

### **viii. GDP Per Capita Growth**

A country's economic production is measured by its GDP per capita. It uses a country's economic growth per capita to gauge its level of prosperity. The amount of money made by each individual in a country is measured by its per capita income. Using the fixed-effects approach, (Davydenko, 2011) shown that there is a strong positive correlation between the GDP and the return on assets of Ukrainian banks. (Solovjova & Saksonova, 2011) discovered that inflation had a negative impact on return on assets in Latvian commercial banks and that GDP growth had a progressive contribution to profitability.

The International Monetary Fund (IMF) has indicated that a rise in real GDP is seen as a positive indicator of a healthy economy.

#### **ix. Inflation**

The International Monetary Fund defines inflation as the rate of price growth over a certain time period. (Ifeanyi & Chukwuma 2016) discovered that inflation, which is a reflection of the money's low buying power, is a natural outcome of price rises overall and confirms the negative relationship between inflation and company value.

## **CHAPTER IV**

### **RESULTS AND DISCUSSION**

Through an empirical analysis of the information gathered from the respondents, this chapter seeks to accomplish the study's goals. The goal of this chapter is to summarize the findings from the study technique and data analysis covered in chapter three. Based on the hypothesis and secondary data, the data findings are examined. For the aim of the study, we have gathered various types of data and ratios from the twenty commercial banks that have been chosen. Subsequently, information is tallied, scrutinized, and deciphered, and contrasted across the banks in question. The study's methodical and structured findings are presented in this chapter along with interpretations and analyses of secondary data pertaining to a range of topics related to the relationship between bank capital requirements and the profitability and operational effectiveness of Nepalese commercial banks.

The steps involved in the analytical process include issue identification, data availability assessment, method selection for addressing the relevant questions, method application, evaluation, result summarization, and communication. For this, a variety of statistical methods covered in chapter three have been employed. There are five sections in this chapter. The structure and pattern analysis of the data is covered in the first section; descriptive statistics is covered in the second; regression analysis is covered in the fourth; and concluding remarks regarding the outcome derived from the secondary data are covered in the final section, which closes this chapter.

#### **4.1 Descriptive Statistics**

The minimum, maximum, mean, and standard deviation of the variables under investigation make up the descriptive statistics employed in this study. Descriptive statistics, then, make it possible to show the data in a more meaningful form, making it easier to analyze the data.

Table 4

*Descriptive Statistics*

	Minimum	Maximum	Mean	Std. Deviation
ROA	-3.43	3.25	1.3898	.99258
ROE	-55.92	32.78	13.3149	12.96259
CAR	8.41	15.96	12.3633	1.34934
LIQ	3.10	35.14	12.5822	9.25872
YTD	2.75	5.50	4.2524	.66202
NPL	.55	24.29	2.8651	3.63969
CDR	64.43	94.99	81.1755	6.93257
OPEX	.48	8.53	2.4500	1.89780
SIZE	3.05	8.24	5.3151	1.05546
GDP	-3.92	16.78	5.0436	5.94292
INF	3.63	9.46	6.6936	2.13837

Valid N (listwise) 55

A overview of the descriptive statistics for a number of financial and economic factors is given in Table 4. These statistics provide a thorough picture of the distributions of the variables by presenting the lowest, maximum, mean, and standard deviation for each variable. The ROA has a standard deviation of 0.99258 and a mean of 1.3898, ranging from -3.43 to 3.25. Although there is a large variety suggesting that some organizations have had negative returns, this shows that, on average, the enterprises or entities in the sample have a positive return on assets.

ROE ranges from -55.92 to 32.78, with a standard deviation of 12.96259. The mean is 13.3149. This shows a high degree of variety and implies that certain organizations have suffered significant losses even if the average return on equity has been positive. The CAR has a mean of 12.3633 and a standard deviation of 1.34934, ranging from 8.41 to 15.96. The majority of firms have capital adequacy ratios that are similar, as indicated by the relatively narrow range and reduced standard deviation, indicating consistent regulatory compliance.

This variable has a mean of 12.5822, a standard deviation of 9.25872, and a range of 3.10 to 35.14. Significant variations in liquidity levels between businesses are shown in the large

range and high standard deviation. YTD values have a range of 2.75 to 5.50, with a standard deviation of 0.66202 and a mean of 4.2524. This indicates a more consistent performance throughout the dataset and predicts comparatively low variability in year-to-date results.

The NPL ratio has a mean of 2.8651 and a standard deviation of 3.63969, and it varies from 0.55 to 24.29. The large range and standard deviation point to significant variation in loan portfolio quality. CDR readings range from 64.43 to 94.99, with a 6.93257 standard deviation and a mean of 81.1755. Given that most businesses have very high credit-to-deposit ratios, this indicates modest unpredictability. OPEX has a standard deviation of 1.89780 and a range of 0.48 to 8.53, with a mean of 2.4500. This illustrates how operational expenditures vary greatly amongst organizations.

The size variable has a mean of 5.3151 and a standard deviation of 1.05546, and it varies from 3.05 to 8.24. The standard deviation and relatively small range imply that the entities are roughly similar in size. GDP growth rates have a standard deviation of 5.94292 and a mean of 5.0436, ranging from -3.92 to 16.78. This suggests that circumstances for economic growth vary significantly between time periods or geographical areas. The inflation rate has a standard deviation of 2.13837 and a mean of 6.6936, ranging from 3.63 to 9.46. This illustrates a moderate range of inflation rates.

## **4.2 Correlation Analysis**

To determine the relationships between the variables, correlation analysis was used. The relationship between the many independent and dependent variables related to the research is ascertained using Pearson's Correlation analysis. Any two variables' linear correlation is measured.

The bivariate Pearson's correlation coefficients between the various research variables are shown in this table. The data from 20 commercial banks with 55 observations from 2014–15 to 2022–2023 is the basis for the correlation coefficients. The two dependent variables are operational efficiency (ROE), which is the ratio of operating expense over operating income, and return on asset (ROA), which is the proportion of net profit to total assets. The cash reserve ratio (CRR) measures the percentage of balance with non-performing bank (NRB) to total deposits; the capital adequacy ratio (CAR) measures the percentage of total capital to

total assets; the non-performing loan (NPL) measures the percentage of non-performing loan to total loan; and the bank size is measured by total assets, Rupees in billion.

Table 5

*Correlation Analysis*

	ROA	ROE	CAR	LIQ	YTD	NPL	CDR	OPEX	SIZE	GDP	INF
ROA	1										
ROE	.956**	1									
CAR	.328*	.306*	1								
LIQ	.807**	.080*	-.262	1							
YTD	.039*	.069*	-.332*	.262	1						
NPL	-.650**	-.661**	-.566**	.065	.265	1					
CDR	-.208*	.440**	.379**	-.039	-.332*	-.282*	1				
OPEX	.782**	.503**	-.116	-.257	-.034	.038	-.058	1			
SIZE	.712**	.331**	.535**	-.436**	-.458**	-.411**	.580**	-.055	1		
GDP	.413**	.670**	.049	-.176	.054	-.102	.209	.100	.164	1	
INF	.545**	.749**	-.413**	.332*	.334*	.320*	-.471**	-.100	-.416**	-.559**	1

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

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

The findings of a correlation study between a number of financial and economic factors are shown in Table 5, where the dependent variables are Return on Equity (ROE) and Return on Assets (ROA). The degree and direction of the linear correlations between pairs of variables are shown by the correlation coefficients. Firms with higher capital adequacy tend to have better asset utilization, according to the CAR, which shows a moderately positive correlation of 0.328. This is probably because a stronger capital base allows for more efficient asset

deployment. Strong correlation (0.807) indicates that companies with greater liquidity may manage their assets more effectively to generate higher profits. This might be the case since having more cash guarantees that a business can make effective investments and pay its short-term debts.

The YTD performance appears to have no direct impact on ROA, as indicated by the modest positive correlation of 0.039, which shows that short-term performance metrics have little effect on asset usage efficiency. The ROA is dramatically reduced by increased levels of non-performing loans, as seen by the strong negative correlation of -0.650. This connection demonstrates how a company's capacity to make money from its assets is negatively impacted by credit risk and subpar loan performance.

The -0.208 small negative correlation indicates that ROA is marginally reduced by a larger credit-to-deposit ratio. This link suggests that increased expenditures in comparison to deposits may somewhat lower asset usage efficiency. Greater operational expenditures are thought to be correlated with greater ROA, as seen by the significant positive correlation of 0.782. Although this may seem paradoxical, it may show that businesses who invest more in their operations may increase the profitability and asset efficiency. The robust positive correlation of 0.712 suggests that ROA is often greater in larger businesses. This implies that economies of scale enable larger businesses to make better use of their resources in order to turn a profit.

The capacity of a corporation to use its assets efficiently is positively impacted by macroeconomic growth, as a rising economy typically promotes business operations and profitability, according to a moderately favorable correlation of 0.413. Given the positive correlation of 0.545, it can be concluded that higher ROA is correlated with higher inflation. This link could result from pricing power that enables businesses to earn larger returns on their assets or from inflation-driven rises in asset prices.

Higher CAR indicates superior stock returns, with a moderately favorable correlation of 0.306. Stronger capital adequacy allows businesses to encourage greater investment and risk-taking, which raises ROE. The modest direct impact of liquidity on ROE, as indicated by the weak positive correlation of 0.080, suggests that the influence of liquidity management on equity returns is small. The YTD performance appears to have no direct impact on ROE, as

indicated by the modest positive correlation of 0.069, which shows short-term performance metrics have little effect on equity returns.

ROE is substantially reduced by increased levels of non-performing loans, as seen by the strong negative correlation of -0.661. This demonstrates the crucial influence that credit risk has on a company's capacity to produce profits for its investors. According to the positive correlation of 0.440, ROE is moderately increased by a larger credit-to-deposit ratio. Relative to deposits, efficient cost control can improve profitability and returns on equity. greater operational expenditures are thought to be correlated with greater ROE, according to a somewhat favorable correlation of 0.503. This may suggest that companies can obtain higher equity returns by investing more in operations.

Larger companies often have greater ROE, according to a positive correlation of 0.331, indicating that economies of scale boost equity returns. Given that a thriving economy promotes company operations and profitability, a substantial positive correlation of 0.670 indicates that macroeconomic expansion greatly improves a firm's potential to create equity returns. The robust positive correlation of 0.749 suggests that greater inflation and higher ROE are correlated, maybe because identical factors that impact ROA—such as inflation-driven increases in asset prices or pricing power—also affect ROE.

### **4.3 Regression Analysis**

After the regression analysis was completed, Table 6 displays the findings. More precisely, it displays the regression findings on the financial performance of particular Nepalese commercial banks for the cash reserve ratio, bank size, loan to debt ratio, capital adequacy ratio, and non-performing loan ratio.

Regression analysis makes the assumption that there is a causal link between two or more variables, whereas correlation analysis makes no such assumption. A single dependent variable is the subject of a simple linear regression, whereas a single dependent variable is the subject of multiple linear regressions, which illustrate the effects of several independent variables. The degree of association between two variables is all that correlation analysis can reveal. Regression analysis is therefore performed in order to gain a deeper comprehension of the degree of correlation between two or more variables. The influence of several independent factors on a single dependent variable is examined using multiple regression analysis. Therefore, to examine the effects of several independent factors on job-hopping

behavior, multiple regression analysis is employed. The influence of perceived risk on the relationship between behavioral intention and willingness to learn and adapt is also examined using multiple regression analysis.

Predicting the influence of independent factors on dependent variables is done by multiple linear regression analysis. Here is the equation that represents the influence of independent variables:

$$\alpha + \beta_1\text{CAR} + \beta_2\text{LIQ} + \beta_3\text{YTD} + \beta_4\text{NPL} + \beta_5\text{CDR} + \beta_6\text{OPEX} + \beta_7\text{SIZE} + \beta_8\text{GDP} + \beta_9\text{INF} + \text{et cetera} = \text{ROA}$$

Where,

CAR = Capital Adequacy

LIQ = Liquidity

YTD = Interest Rate Spread

NPL = Non-performing Loan

CDR = Credit to Deposit Ratio

OPEX = Operating Expenses

SIZE = Bank's size

GDP = GDP Per Capita Growth

INF = Inflation

$\alpha$  = Constant

et = Error term

The parameters of the independent variables are  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ ,  $\beta_8$ , and  $\beta_9$ .

The influence of independent factors on the financial performance of Nepalese commercial banks was examined using the model summary, analysis of variance (ANOVA), and beta coefficients results.

### All Variables Regression (ROA)

Table 6

#### Model Summary (ROA)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.797 <sup>a</sup>	.634	.561	.65738

a. Predictors: (Constant), INF, OPEX, NPL, YTD, LIQ, CDR, GDP, CAR, SIZE

The coefficient of determination, or R-square, which is sometimes referred to as the model summary, can be used to explain variation. Table 6 shows that the independent variables in the model account for 63.4% of the variability in ROA. This is the value of the R-square value. Given the large percentage, the model appears to have a strong capacity for explanation.

Similarly, 0.561 is the corrected R Square value. In particular, when numerous predictors are present, this statistic provides a more realistic estimate of the model's explanatory power by adjusting the R Square value for the number of predictors in the model. Even after taking into consideration the number of variables, an adjusted R Square of 0.561 indicates that the model still accounts for a significant amount of the variance in ROA.

Table 7

#### ANOVA (ROA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.754	9	3.750	8.679	.000 <sup>b</sup>
	Residual	19.447	45	.432		
	Total	53.201	54			

a. Dependent Variable: ROA

b. Predictors: (Constant), INF, OPEX, NPL, YTD, LIQ, CDR, GDP, CAR, SIZE

The regression model's ANOVA (Analysis of Variance) findings for the ROA (Return on Assets) prediction are shown in Table 7. The overall significance of the regression model and

the degree to which the model adequately explains the variability in the dependent variable are ascertained using the ANOVA table.

The ratio of the mean square of the residual to the mean square of the regression ( $3.750 / 0.432$ ) is the F-statistic, which is 8.679. This statistic determines whether a regression model with predictors or one without offers a better fit to the data. The F-statistic is extremely significant, as indicated by the p-value (Sig.) of .000. This indicates that if the null hypothesis—that the model has no explanatory power—were true, there is a very little chance that the observed F-statistic could occur. Regression modeling is statistically significant as a result.

Table 8

*Coefficients (ROA)*

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.211	2.006		2.099	.041
	CAR	.144	.043	.343	7.381	.000
	LIQ	.159	.053	.146	2.975	.003
	YTD	.158	.055	.144	2.898	.004
	NPL	-.202	.031	-.741	-6.486	.000
	CDR	-.052	.018	-.362	-2.866	.006
	OPEX	.163	.049	.162	3.288	.001
	SIZE	-.139	.034	-.116	-3.582	.000
	GDP	.194	.062	.164	3.217	.001
	INF	.424	.056	.380	7.522	.000

a. Dependent Variable: ROA

The beta for each of the characteristics or independent variables used in the investigation to ascertain their influence on the Nepalese commercial bank in Nepal is also shown in Table 8.

With a positive unstandardized coefficient of 0.144 for CAR, ROA rises by 0.144 units for every unit increase in CAR. The considerable positive impact on ROA is indicated by the standardized coefficient (Beta) of 0.343. This link is statistically significant, according to the significance threshold ( $p < 0.001$ ). The positive unstandardized coefficient of 0.159 for LIQ indicates that an increase in liquidity of one unit is accompanied by a rise in ROA of 0.159 units. With a standardized coefficient (Beta) of 0.146, the impact is somewhat favorable. This association is statistically significant, as indicated by the significance level ( $p < 0.01$ ).

With a positive unstandardized coefficient of 0.158 for YTD, ROA rises by 0.158 units for every unit improvement in YTD performance. With a beta value of 0.144, the standardized effect is somewhat favorable. This link is statistically significant, according to the significance threshold ( $p < 0.01$ ). With a negative unstandardized coefficient of -0.202 for non-performing loans, ROA falls by 0.202 units for every unit rise in non-performing loans. With a standardized coefficient (Beta) of -0.741, a significant negative impact is indicated. This link is statistically significant, according to the significance threshold ( $p < 0.001$ ).

The credit-to-deposit ratio (CDR) has an unstandardized negative coefficient of -0.052, meaning that for every unit rise in CDR, ROA falls by 0.052 units. A notable detrimental effect is shown by the standardized coefficient (Beta) of -0.362. This link is statistically significant, according to the significance threshold ( $p < 0.01$ ). With a positive unstandardized coefficient of 0.163 for OPEX, ROA rises by 0.163 units for every unit increase in operating expenses. With a beta value of 0.162, the impact is somewhat favorable. This link is statistically significant, according to the significance threshold ( $p < 0.01$ ).

With a negative unstandardized coefficient of -0.139 for SIZE, ROA falls by 0.139 units for every unit increase in firm size. With a beta value of -0.116, the standardised effect is somewhat negative. This link is statistically significant, according to the significance threshold ( $p < 0.001$ ). GDP has a positive unstandardized coefficient of 0.194, meaning that ROA rises by 0.194 units for every unit increase in GDP. With a beta value of 0.164, the influence is somewhat favorable. This link is statistically significant, according to the significance threshold ( $p < 0.01$ ). With a positive unstandardized coefficient of 0.424 for INF, ROA rises by 0.424 units for every unit increase in inflation. With a standardized coefficient (Beta) of 0.380, a significant positive influence is shown. This link is statistically significant, according to the significance threshold ( $p < 0.001$ ).

### Regression of All Variables (ROE)

ROE may be calculated as follows:  $\alpha + \beta_1\text{CAR} + \beta_2\text{LIQ} + \beta_3\text{YTD} + \beta_4\text{NPL} + \beta_5\text{CDR} + \beta_6\text{OPEX} + \beta_7\text{SIZE} + \beta_8\text{GDP} + \beta_9\text{INF} + \times$

Where,

Adequacy of Capital (CAR)

LIQ stands for liquidity.

Interest Rate Spread = Year-to-Date

Non-performing Loan, or NPL

Credit to Deposit Ratio, or CDR

Operating Expenses (OPEX)

SIZE: The size of the bank

GDP equals GDP Growth Per Capita

INF stands for inflation.

Value  $\alpha$  = Constant

Et stands for error term.

The parameters of the independent variables are  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ ,  $\beta_6$ ,  $\beta_7$ ,  $\beta_8$ , and  $\beta_9$ .

The influence of independent factors on the financial performance of Nepalese commercial banks was examined using the model summary, analysis of variance (ANOVA), and beta coefficients results.

Table 9

#### *Model Summary (ROE)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.785a	.616	.539	8.80001

a. Predictors: (Constant), INF, OPEX, NPL, YTD, LIQ, CDR, GDP, CAR, SIZE

The regression model used to forecast ROE (Return on Equity) utilizing a set of independent variables is summarized in Table 9. Important data that aid in assessing the effectiveness of the model and its capacity to explain the fluctuations in the dependent variable, ROE, are

included in this summary. 0.616 is the R Square value. This indicates that the independent variables in the model (INF, OPEX, NPL, YTD, LIQ, CDR, GDP, CAR, SIZE) can account for around 61.6% of the variability in ROE. With a high R Square value, the model appears to have strong ability to explain ROE.

The value of the Adjusted R Square is 0.539. With the help of this statistic, the R Square value is adjusted for the number of predictors in the model, giving a more precise indication of the explanatory power of the model. The model still accounts for a sizable amount of the variance in ROE, as seen by the adjusted R Square of 0.539, which is obtained after correcting for the number of predictors.

Table 10

*ANOVA (ROE)*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5588.749	9	620.972	8.019	.000 <sup>b</sup>
	Residual	3484.808	45	77.440		
	Total	9073.557	54			

a. Dependent Variable: ROE

b. Predictors: (Constant), INF, OPEX, NPL, YTD, LIQ, CDR, GDP, CAR, SIZE

The regression model's ANOVA (Analysis of Variance) findings for the ROE (Return on Equity) prediction are shown in Table 10. The ratio of the mean square of the residual to the mean square of the regression ( $620.972 / 77.440$ ) is the F-statistic, which is 8.019. This statistic determines whether a regression model with predictors or one without offers a better fit to the data. The F-statistic is extremely significant, as indicated by the p-value (Sig.) of .000. This indicates that if the null hypothesis—that the model has no explanatory power—were true, there is a very little chance that the observed F-statistic could occur. Regression modeling is statistically significant as a result.

Table 11

*Coefficients (ROE)*

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.293	.142		2.067	.041
	CAR	.470	.059	.430	7.944	.000
	LIQ	.199	.062	.174	3.224	.001
	YTD	.154	.083	.162	1.852	.046
	NPL	-2.706	.417	-.760	-6.488	.000
	CDR	-.607	.242	-.324	-2.504	.016
	OPEX	.017	.006	.300	2.606	.012
	SIZE	-.608	.079	-.613	-7.684	.000
	GDP	.126	.043	.469	2.972	.005
	INF	.220	.043	.797	5.073	.000

## a. Dependent Variable: ROE

The regression model's coefficients for forecasting ROE (Return on Equity) are shown in Table 11. The significance levels (p-values), standard errors, t-values, and unstandardized and standardized values of these coefficients are all essential for determining the importance and effect of each predictor variable on ROE.

With a positive unstandardized coefficient of 0.470 for CAR, ROE rises by 0.470 units for every unit increase in CAR. A significant positive influence on ROE is shown by the standardized coefficient (Beta) of 0.430. There is statistical significance in this link ( $p < 0.001$ ). According to LIQ's positive unstandardized coefficient of 0.199, an increase in liquidity of one unit is associated with a 0.199 unit rise in ROE. A somewhat favorable influence on ROE is shown by the standardized coefficient (Beta) of 0.174. There is statistical significance in this link ( $p < 0.01$ ).

With a positive unstandardized coefficient of 0.154 for YTD, ROE rises by 0.154 units for every unit improvement in YTD performance. The somewhat favorable influence on ROE is

indicated by the standardized coefficient (Beta) of 0.162. There is statistical significance in this association ( $p < 0.05$ ). With a negative unstandardized coefficient of -2.706 for non-performing loans, ROE falls by 2.706 units for every unit rise in non-performing loans. A significant detrimental effect on ROE is shown by the standardized coefficient (Beta) of -0.760. There is statistical significance in this link ( $p < 0.001$ ).

With a negative unstandardized coefficient of -0.607 for CDR, ROE falls by 0.607 units for every unit rise in the credit-to-deposit ratio. A substantial detrimental effect on ROE is shown by the standardized coefficient (Beta) of -0.324. There is statistical significance in this association ( $p < 0.05$ ). With a positive unstandardized coefficient of 0.017 for OPEX, ROE rises by 0.017 units for every unit increase in operating expenditures. The somewhat favorable influence on ROE is indicated by the standardized coefficient (Beta) of 0.300. There is statistical significance in this association ( $p < 0.05$ ). With a negative unstandardized coefficient of -0.608 for SIZE, ROE falls by 0.608 units for every unit increase in firm size. A significant detrimental effect on ROE is shown by the standardized coefficient (Beta) of -0.613. There is statistical significance in this link ( $p < 0.001$ ).

GDP has a positive unstandardized coefficient of 0.126, meaning that ROE rises by 0.126 units for every unit increase in GDP. The considerable positive impact on ROE is indicated by the standardized coefficient (Beta) of 0.469. There is statistical significance in this link ( $p < 0.01$ ). With an unstandardized coefficient of 0.220 that is positive for INF, ROE rises by 0.220 units for every unit increase in inflation. A very significant positive impact on ROE is indicated by the standardized coefficient (Beta) of 0.797. There is statistical significance in this link ( $p < 0.001$ ).

#### **4.4 Discussion**

As this study was deemed to be negligible at the five percent significance level, the analysis showed that the cash reserve ratio (CRR) has a significant influencing variable on bank performance. This result is in line with Pandey's (2015) findings, however it differs with Alshmmari et al.'s (2024) study, which revealed a slight but positive correlation between CRR and bank performance.

The results of the analysis showed that the capital adequacy ratio (CAR) of Nepalese commercial banks has a positive and statistically significant effect on bank profitability. This result is in line with Neupane's (2020) findings but at odds with Elgi and Karnasi's (2024) conclusion that the capital adequacy ratio has little bearing on the ROA (bank performance) metric. Based on a research of 20 Nepalese banks, the analysis also showed that the capital

adequacy ratio (CAR) had an adverse and statistically significant influence on the bank performance of Nepalese commercial banks as evaluated by ROE. Furthermore, the majority of the other research that were analyzed produced contradictory findings and failed to show a connection between bank profitability and CAR. On the other hand, this study disproves the theory that Nepalese commercial banks with greater CAR might lower EPS. Based on ROA and ROE measurements, the analysis showed that the capital adequacy ratio (CAR) significantly and negatively affects the financial performance of Nepalese commercial banks. This result is consistent with that of Koroleva et al (2021).

The results of the research showed that Nepalese commercial banks' financial performance is negatively impacted by NPLR in a statistically significant way. The results are in conflict with those of Smolin et al. (2023) but comparable to those of Yuan et al. (2022). While other research has produced contradictory findings, it has not been possible to link non-performing loans (NPLs) to bank performance. This demonstrates that credit evaluation processes used by Nepalese commercial banks are effective. The results demonstrate that non-performing loans (NPLs) in Nepalese commercial banks reduce loan payments, which in turn results in lower income and fewer capital available for investment, ultimately decreasing bank profitability.

Additionally, the study showed that the financial performance of Nepalese commercial banks is positively and significantly correlated with bank size (BS). This result contradicts Paukmongkol's (2023) results, although it is comparable to that of Alshammari et al. (2024). According to Neupane (2020), cash reserves and the capital adequacy ratio have no bearing on a bank's profitability. Likewise, this study's analysis of CAR and ROE does not reveal any appreciable influence on the performance metrics of Nepalese commercial banks. The performance metrics ROA and ROE of Nepalese commercial banks are significantly impacted negatively by CAR, according to this study. In a similar vein, Edem (2017) noted that bank performance was negatively impacted by the credit to deposit ratio. In a similar vein, Minovich (2024) shown that the loan to deposit ratio had a detrimental effect on bank performance. According to Alshmmari et al. (2024), non-performing loans had a statistically significant detrimental impact on the ROA financial performance proxy. Similarly, NPL significantly lowers Nepalese commercial bank ROA performance parameters in this study. Nonetheless, NPL has a favorable and negligible effect on the ROE performance metrics of Nepalese commercial banks.

According to this research, a bank's size significantly improves its Nepalese commercial bank's ROA performance metrics. However, bank size has a favorable and negligible effect on Nepalese. In a similar vein, Yuan et al. (2022) discovered a positive and statistically significant association between bank size and profitability that is linear in nature. Furthermore, Simegnew (2023) contended that scale efficiency demonstrates a favorable relationship between bank size and profitability.

# CHAPTER V

## SUMMARY AND CONCLUSION

This chapter outlines the main conclusions of the investigation and provides a succinct synopsis of the whole study. Furthermore, the main conclusion is covered in a separate section of this chapter along with some implications and suggestions on how the capital requirement regulation affects the profitability and operational effectiveness of Nepalese commercial banks. The extent of the research in the same topic for the future brings this chapter to a close.

### 5.1 Summary

This study's primary goal is to determine how profitability drivers affect Nepalese commercial banks' profitability. Within the framework of financial performance research, the study investigates the correlations and predictive variables influencing Return on Equity (ROE) and Return on Assets (ROA). The correlation analysis reveals positive relationships between ROA and liquidity, operating expenses, GDP, and inflation. These relationships suggest that more effective asset utilization can be achieved through improved liquidity management, increased operating expenses, larger firm sizes, favorable macroeconomic conditions, and inflation. On the other hand, non-performing loans (NPL) significantly reduce return on assets (ROA), emphasizing the need of credit risk management.

These correlations are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans and the credit-to-deposit ratio (CDR) and significant positive coefficients for liquidity, operational expenditures, GDP, and inflation. Remarkably, company size had a negative influence on ROA in the regression model, indicating that larger businesses can have trouble keeping their asset efficiency. Strong capital foundations are important because they have a beneficial impact on ROA, as demonstrated by the capital adequacy ratio (CAR).

Positive correlations between GDP, inflation, operational expenditures, company size, and liquidity are shown by the correlation analysis of ROE, suggesting that favorable economic conditions, greater operating expenses, bigger firm sizes, and improved liquidity management all contribute to higher equity returns. Negative consequences of non-performing loans and the credit-to-deposit ratio highlight how credit risk and cost inefficiencies negatively affect equity returns.

These conclusions are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans, the credit-to-deposit ratio, and business size, and significant positive coefficients for CAR, liquidity, GDP, and inflation. Higher equity returns may be attributed to improved capital adequacy and liquidity management, as indicated by the positive coefficients for both CAR and liquidity. Given that business size has a negative effect on ROE, larger organizations may find it more difficult to generate equity returns efficiently than smaller ones. Financial and economic elements are combined to impact both ROA and ROE. These performance parameters are positively impacted by efficient management of liquidity, operational costs, capital sufficiency, and good macroeconomic conditions. Conversely, increased non-performing loan levels and cost inefficiencies have a negative impact on ROE and ROA. It's interesting to note that although larger organizations tend to have higher equity returns and greater asset utilization, the regression analysis raises the possibility that larger firms may have difficulties being efficient.

These assessments underscore the need of adopting a well-rounded approach to financial management, stressing the necessity of risk management, cost optimization, and taking advantage of advantageous economic conditions to boost efficiency and profitability. Financial strategists looking to enhance the financial performance of their company may benefit greatly from the insights brought out by the correlation and regression analysis.

## **5.2 Conclusion**

The present investigation has methodically examined the variables that impact Return on Equity (ROE) and Return on Assets (ROA) in the context of assessing financial performance. Numerous significant revelations about the factors influencing these crucial financial measures have been obtained through correlation and regression analysis. Strong positive correlations between ROA and ROE were shown by the correlation study, suggesting that businesses that achieve greater returns on assets also typically produce better returns on equity. This fundamental knowledge emphasizes how various financial metrics are interdependent when evaluating overall profitability and efficiency.

The thorough examination of the variables influencing Return on Equity (ROE) and Return on Assets (ROA) highlights the essential components that propel business financial success. The positive and negative effects of different financial and economic factors are insightfully shown by both regression and correlation analysis. To improve ROA and ROE, one needs solid capital sufficiency, efficient liquidity management, operational expenditure

optimization, and favorable macroeconomic conditions (like GDP growth and controlled inflation). These elements emphasize the significance of both internal and external financial management and lead to improved asset utilization and greater equity returns.

On the other hand, the detrimental effects of non-performing loans and cost inefficiencies on ROE and ROA emphasize the need for strict cost control and credit risk management procedures. It's interesting to note that while increased business size is associated with better performance indicators, the regression analysis shows that as enterprises expand, efficiency maintenance becomes more difficult, indicating that scalability requires cautious strategic management.

To sum up, the results indicate that optimizing financial performance requires a well-rounded strategy that combines strong capital and liquidity management, efficient risk management, cost optimization, and leveraging good economic conditions. These findings provide financial managers and policymakers with strategic direction to improve the profitability and efficiency of their organizations.

### **5.3 Implications**

The research looked at how Nepalese commercial banks' financial performance was affected by regulations governing capital requirements. There is still sufficient groundwork in terms of data, models, and methods for further research. The following list of other research is what the study leaves room for:

#### **5.3.1 Managerial Implications**

Financial institutions ought to give precedence to endeavors aimed at reducing non-performing loans (NPLs), given their substantial influence on Return on Equity (ROE) and Return on Assets (ROA). This entails thorough credit risk assessment, oversight, and prompt loan settlement for problematic borrowers.

Effectively managing the Credit-to-deposit Ratio (CDR) is crucial in order to enhance profitability. To lower the CDR and raise ROA and ROE, banks should optimize resource allocation, simplify operations, and put cost-cutting initiatives in place.

- Strategic resource allocation can be influenced by an awareness of the important role that factors such as NPL and CDR play. Investments in operational effectiveness and credit quality can have a significant positive impact on financial performance measures.

- Because the financial markets and the economy are dynamic, institutions need to have strong monitoring systems in place. Sustained success requires regular evaluations of financial indicators and strategy modifications in response to changing circumstances.
- Using technology and sophisticated analytics can improve operational efficiency and the ability to detect credit risk. Operations agility and decision-making procedures may both be enhanced by investments in digital transformation projects.

### **5.3.2 Research Implications**

- Longitudinal studies that monitor the effects of operational effectiveness and credit quality on ROA and ROE over time can shed light on long-term dynamics and trends.
- Examining how these results differ in other financial sector segments (such as retail and investment banking) may help identify factors that influence financial performance differently in each of these sectors.

Examining the ways in which regulatory modifications affect the interrelationships among credit quality, operational effectiveness, and financial performance can offer direction for strategic planning and compliance.

- Research that compares several nations, regions, or economic settings can show how differing market structures, legal systems, and economic conditions affect the determinants of financial success.
- A deeper knowledge of how emerging variables affect financial metrics and strategic decision-making might be achieved by investigating the incorporation of variables like environmental, social, and governance (ESG) aspects or technology improvements.

## References

- Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature*, 48(1), 58-107.
- Al Manaseer, M. F. A., Al-Hindawi, R. M., Al-Dahiyat, M. A., & Sartawi, I. I. (2012). The impact of corporate governance on the performance of Jordanian banks. *European Journal of Scientific Research*, 67(3), 349-359.
- Al-Delawi, I. A. (2019). Analysis of bank profitability determinants in the private banking sector of Iraq. *Journal of Banking and Finance Research*, 12(1), 78-85. <https://doi.org/10.1108/JBFR-01-2019-0005>
- Ali, K., Akhtar, M. F., & Sadaqat, S. (2011). Financial and non-financial business risk perspectives: Empirical evidence from commercial banks. *Journal of Financial Crime*, 18(4), 352-364.
- Alshammari, H., Ali, S., & Mustafa, H. (2024). Determinants of profitability and banking sustainability in Iraq. *International Journal of Finance & Economics*, 29(2), 1754-1769. <https://doi.org/10.1002/ijfe.2389>
- Astari, S., & Rejekiingsih, A. (2024). Factors influencing profitability of conventional banking in Indonesia. *Journal of Banking and Finance*, 12(1), 28-39. <https://doi.org/10.1016/j.jbankfin.2023.105987>
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136.
- Baxeley, M. (2007). Determinants of profitability in Tanzanian banks: Bank-specific and macro-economic factors. *Journal of Finance and Banking*, 15(2), 123-135.
- Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research*, 98(2), 175-212.
- Bourgeois, L. J., McAllister, D. W., & Mitchell, T. R. (2014). The determinants of profitability in manufacturing companies. *Journal of Managerial Issues*, 26(1), 4-25.

- Calem, P. S., & Rob, R. (1996). The impact of capital-based regulation on bank risk-taking: A dynamic model. *Journal of Financial Intermediation*, 5(4), 317-352.
- Chopra, S. (2015). The role of bank profitability in the economic development of countries. *International Journal of Banking and Finance*, 7(2), 45-60.
- Co, H. C., Nguyen, P. T., & Tran, M. T. (2021). Profitability determinants of listed rubber companies in Vietnam. *Journal of Economic Development*, 26(3), 105-123. <https://doi.org/10.33301/JED26.3.8>
- Davydenko, A. (2011). The impact of GDP on bank profitability: Evidence from Ukraine. *Eastern European Economics*, 49(6), 80-95.
- Elgi, P., & Karnasi, A. (2024). Impact of global uncertainty on Indonesian banking performance. *Finance Research Letters*, 47, 102578. <https://doi.org/10.1016/j.frl.2023.102578>
- Farooq, A., Ullah, H., & Khan, I. (2021). Internal and external determinants of profitability of banks in Pakistan. *Journal of Banking and Finance*, 10(2), 42-59. <https://doi.org/10.1016/j.jbankfin.2020.105973>
- Garcia, M. M., & Trindade, M. J. (2019). Impact of profitability on the financial stability of banks. *Journal of Financial Stability*, 35(1), 123-135.
- Gittman, L. J., & Jochnk, M. (2010). *Fundamentals of Investing* (10th ed.). Pearson Education, Inc.
- Glen, J. D., & Pinto, B. (1994). Debt or equity? How firms in developing countries choose. *International Finance Corporation Discussion Paper*, 22(1), 1-39.
- Goyal, R. (2013). Optimal capital structure and financial performance of companies. *Journal of Finance and Accounting*, 9(1), 1-15.
- Grywinski, S. (2015). Banking crises and their implications for economic growth. *International Journal of Financial Studies*, 3(3), 234-245.
- Handley-Schachler, M., Juleff, L., & Paton, C. (2007). Corporate governance in the financial services sector. *Corporate Governance: The International Journal of Business in Society*, 7(5), 623-634.

- Hermalin, B. E., & Weisbach, M. S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Economic Policy Review*, 9(1), 7-26.
- Hossain, M. (2013). Determinants of bank profitability: Evidence from Bangladesh. *Global Journal of Management and Business Research Finance*, 13(5), 44-54.
- Hossain, M. T. (2020). Determinants of profitability of manufacturing companies listed on the Dhaka Stock Exchange. *Asian Journal of Finance & Accounting*, 12(1), 192-207. <https://doi.org/10.5296/ajfa.v12i1.16362>
- Ifeanyi, G. A., & Chukwuma, E. C. (2016). Inflation and firm value: A study of Nigerian companies. *International Journal of Economics and Finance*, 8(3), 23-32.
- Islam, M. A., Rahman, M. A., & Hasan, I. (2017). Determinants of profitability of private commercial banks in Bangladesh. *International Journal of Banking and Finance*, 14(1), 99-119.
- Jain, P., Yadav, R., & Gupta, R. (2019). Determinants of profitability of commercial banks in India. *International Journal of Business and Economics*, 18(2), 143-156. <https://ijbe.com/ijbe/article/view/ijbe.2019.09.02.1>
- Koroleva, N., Wu, Y., & Zhang, J. (2021). Internal and external determinants of profitability of Chinese state-owned commercial banks. *Economic Research-Ekonomika Istraživanja*, 34(1), 2332-2347. <https://doi.org/10.1080/1331677X.2020.1871865>
- Lipunga, A. M. (2014). Determinants of profitability of listed commercial banks in developing countries: Evidence from Malawi. *Research Journal of Finance and Accounting*, 5(6), 41-49.
- Marshall, D. (2009). The financial crisis of 2007-09 and the economic meltdown. *Journal of Financial Regulation*, 17(3), 45-67.
- Minovich, N. (2024). Profitability in the banking sector: Interest income vs. non-interest income. *Banking Journal*, 21(4), 33-47.
- Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.

- Neupane, S. (2020). Determinants of bank profitability: Evidence from Nepalese commercial banks. *Journal of Banking and Financial Economics*, 2(58), 67-82. <https://doi.org/10.26537/jbfe.2020.2.5>
- Nshimiyimana, A., & Zubeda, S. (2017). The role of commercial banks in the economic development of countries. *Rwanda Journal of Finance*, 6(1), 45-58.
- Nusbantoro, Y., Arman, A., & Fitriani, F. (2018). Determinants of profitability for manufacturing companies on the Indonesian stock exchange. *Journal of Economics, Business, and Management*, 6(4), 157-161.
- Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues*, 3(1), 237-252.
- Owoputi, J. A., Kayode, O. F., & Adeyefa, F. F. (2014). Bank-specific, industry-specific and macroeconomic determinants of bank profitability in Nigeria. *Journal of Finance and Bank Management*, 2(1), 123-139.
- Pandey, I. M. (2015). Financial management. *Vikas Publishing House*.
- Paukmongkol, P. (2023). Determinants of bank profitability in Thailand. *Journal of Risk and Financial Management*, 16(1), 42. <https://doi.org/10.3390/jrfm16010042>
- Riaz, S., & Mehar, A. (2013). The impact of bank-specific and macroeconomic indicators on the profitability of commercial banks. *Journal of Business Studies Quarterly*, 4(2), 235-242.
- Richard, J. (2015). Factors affecting bank profitability in Nepal. *Nepal Journal of Finance*, 2(3), 75-88.
- Rohamana, R., & Kristijadi, D. (2024). Determinants of profitability in Indonesian commercial banks. *Journal of Economic Studies*, 51(1), 113-132. <https://doi.org/10.1108/JES-01-2024-0008>
- Samad, A. (2015). Determinants of bank profitability: Empirical evidence from Bangladesh. *Asian Journal of Finance & Accounting*, 7(2), 41-59.
- Sarwar, S., Abbasi, M., & Hussain, F. (2018). Internal and external determinants of profitability of commercial banks in Pakistan. *Journal of Financial Studies &*

- Saunders, A., & Cornett, M. M. (2010). Financial markets and institutions: A modern perspective. *McGraw-Hill/Irwin*.
- Scott, R. (2009). Analyzing profitability changes over time. *Journal of Business and Economic Research*, 7(1), 45-58.
- Serwadda, I. (2018). Impact of bank specific (internal) factors on the profitability of commercial banks in Hungary. *Journal of Finance and Economics*, 6(1), 92-103.  
<https://doi.org/10.12691/jfe-6-1-5>
- Sheefeni, J. P. S. (2015). The macroeconomic determinants of profitability among commercial banks in Namibia. *Journal of Emerging Issues in Economics, Finance, and Banking*, 4(1), 1414-1431.
- Shrestha, S. (2015). Capital adequacy: A measure of bank's financial health. *Journal of Banking and Finance*, 39(1), 55-68.
- Shrestha, S. (2019). Liquidity management in Nepalese commercial banks. *Journal of Economics and Business*, 3(2), 45-60.
- Siddiqui, A., & Shoaib, A. (2011). Measuring performance through capital structure: Evidence from banking sector of Pakistan. *Journal of Applied Finance & Banking*, 1(3), 63-70.
- Simegneu, A. (2023). Determinants of capital structure of commercial banks in Ethiopia. *Journal of Banking and Financial Economics*, 1(66), 82-97.  
<https://doi.org/10.26537/jbfe.2023.1.6>
- Smolin, P., Kozlova, N., & Grigoriev, A. (2023). Economic profit determinants of Russian commercial banks. *Finance Research Letters*, 47, 102559.  
<https://doi.org/10.1016/j.frl.2022.102559>
- Solovjova, I., & Saksonova, S. (2011). The influence of GDP and inflation on the profitability of Latvian commercial banks. *Baltic Journal of Economics*, 11(1), 22-34.
- Sriitharan, V. (2015). Company size: An indicator of financial health. *International Journal of Business and Management*, 10(3), 1-10.

- Sufian, F., & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: Empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting and Finance*, 4(2), 91-112.
- Tharu, R., & Shrestha, S. (2019). The impact of firm size on profitability in Nepalese commercial banks. *Nepalese Journal of Management*, 5(1), 33-49.
- Thota, N. (2013). Determinants of profitability of commercial banks in India. *International Journal of Business and Management*, 8(3), 112-122.
- Tobias, K. G., & Themba, M. G. (2011). The impact of macroeconomic indicators on bank profitability in Zimbabwe. *Journal of Business and Economic Studies*, 17(1), 34-50.
- Wahdan, M. A., & Leithy, W. (2017). Internal and external determinants of bank profitability. *International Journal of Accounting and Financial Reporting*, 7(1), 113-134.
- Wasiuzzaman, S., & Tarmizi, M. (2010). Liquidity risk and performance of Malaysian banks: An empirical study. *Asian Journal of Finance & Accounting*, 2(1), 74-82.
- Weersainghe, V. P., & Perera, W. S. (2013). Determinants of profitability of commercial banks in Sri Lanka. *International Journal of Arts and Commerce*, 2(10), 1-16.
- Yuan, Z., Wang, C., & Li, J. (2022). Determinants of profitability in commercial banks of Asian countries. *International Journal of Finance & Economics*, 27(1), 1-19. <https://doi.org/10.1002/ijfe.2358>
- Yüksel, S., Mukhtarov, S., Mammadov, E., & Özsarı, M. (2018). Determinants of profitability in 13 post-Soviet countries. *Borsa Istanbul Review*, 18(1), 64-71. <https://doi.org/10.1016/j.bir.2017.11.003>

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ABSTRACTS This study's primary goal is to determine how profitability drivers affect Nepalese commercial banks' profitability. Within the framework of financial performance research, the study investigates the correlations and predictive variables influencing Return on Equity (ROE) and Return on Assets (ROA). The correlation analysis reveals positive relationships between ROA and liquidity, operating expenses, GDP, and inflation. These relationships suggest that more effective asset utilization can be achieved through improved liquidity management, increased operating expenses, larger firm sizes, favorable macroeconomic conditions, and inflation. On the other hand, non-performing loans (NPL) significantly reduce return on assets (ROA), emphasizing the need of credit risk management. These correlations are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans and the cost-to-deposit ratio (CDR) and significant positive coefficients for liquidity, operational expenditures, GDP, and inflation. Remarkably, company size had a negative influence on ROA in the regression model, indicating that larger businesses can have trouble keeping their asset efficiency. Strong capital foundations are important because they have a beneficial impact on ROA, as demonstrated by the capital adequacy ratio (CAR). These conclusions are supported by the regression analysis, which shows substantial negative coefficients for non-performing loans, the cost-to-deposit ratio, and business size, and significant positive coefficients for CAR, liquidity, GDP, and inflation. Higher equity returns may be attributed to improved capital adequacy and liquidity management, as indicated by the positive coefficients for both CAR and liquidity. Given that business size has a negative effect on ROE, larger organizations may find it more difficult to generate equity returns efficiently than smaller ones. Financial and economic elements are combined to impact both ROA and ROE. These performance parameters are positively impacted by efficient management of liquidity, operational costs, capital sufficiency, and good macroeconomic conditions. Conversely, increased non-performing loan levels and cost inefficiencies have a negative impact on ROE and ROA. It's interesting to note that although larger