

**IMPACT OF NON-PERFORMING ASSETS ON THE FINANCIAL
PERFORMANCE OF THE NEPALESE COMMERCIAL BANKS**

A Dissertation Submitted to the Office of the Dean, Faculty of Management in Partial
Fulfillment of the Requirements for the Master of Business Studies (M.B.S.)

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I hereby corroborate that I have not researched and submitted the final draft of dissertation entitled **IMPACT OF NON-PERFORMING ASSETS ON THE FINANCIAL PERFORMANCE OF THE NEPALESE COMMERCIAL BANKS**

Work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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ACKNOWLEDGEMENTS

First of all, I would like to thank Tribhuvan University for giving chance to prepare the thesis for a partial requirement to the fulfillment of Master Degree of Business Studies program held under Tribhuvan University. After many months of hard work and sincere effort from my side, this research has been conducted. I would like to acknowledge the following notable personalities who have contributed their valuable efforts in different ways in creation of this research. I would express my profound gratitude to my thesis supervisor Dr. Pitri Raj Adhikari of Shanker Dev Campus for his valuable guidance and kind support to me all the way through this thesis his co-operation in the revision of this thesis has precisely helped me to groom and bring it in this form. I also owe deep gratitude to all reputed authors whose writings have provided me the necessary guidance and invaluable materials for the enrichment of my research papers in all possible ways. My special appreciation goes to my colleague and to all my family members, teachers and friends for their continuous encouragement and help to complete this work directly or indirectly. Perfection is anything can hardly be thought of knowing the universal fact "Human is Error", I Have taken utmost care to avoid errors, but I know they are inescapable, so I shall be obliged if they are forgiven.

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ABBREVIATIONS

ADBL	:	Agriculture Development Bank Limited
BL	:	Bad Loan
BOK	:	Bank of Kathmandu
C.V.	:	Coefficient of Variance
DL	:	Doubtful Loan
EBIT	:	Earnings before Interest and Taxes
IRS	:	Internal Revenue System
Ltd	:	Limited
MVPS	:	Market Value Per Share
KBL	:	Kumari Bank Limited
NABIL	:	Nabil Bank Limited
NGBL	:	Nepal Grindlays Bank Limited
NIC	:	Nepal Industrial & Commercial Bank
NP	:	Net Profit
NPLR	:	Non Performing Loan Ratio
NRB	:	Nepal Rastra Bank
PA	:	Performing Assets
RBB	:	Everest Bank Limited
RBB	:	Rastriya Banijya Bank
ROA	:	Return on Assets
ROC	:	Return on Capital
ROE	:	Return on Equity
S.E	:	Standard Error
SBI/N	:	State Bank of India/Nepal
SCBNL	:	Standard Chartered Bank Nepal Limited
SE	:	Standard Error
SEBON	:	Securities Board of Nepal
SL	:	Sub-standard Loan
TA	:	Total Assets

ABSTRACT

This study aims to evaluate the profitability position of commercial banks in Nepal and analyze the relationship between profitability and non-performing assets (NPAs). Three commercial banks, NABIL SCBNL and RBB Nepal Limited, were selected as samples from a population of 20 commercial banks in Nepal. Correlation and regression analyses were conducted using Return on Assets (ROA) and Return on Equity (ROE) as dependent variables and Non-Performing Loan Ratio (NPLR), Interest Rate Spread (IRS), Loan and Advance Ratio (LAR), and Cash Reserve Ratio (CRR) as independent variables. The findings revealed a negative correlation between ROA and ROE, attributed to heavy accumulated profit and optimal capital among sample banks. Additionally, CRR exhibited a positive correlation with ROA, indicating effective asset management. However, there was a negative correlation between CRR and ROA. Regression analysis confirmed these relationships, with an increase in ROE leading to a decrease in the average influence on ROA. Conversely, an increase in CRR resulted in a higher average influence on ROA, with statistically significant findings. ANOVA further supported the negative correlation between ROA and ROE, and model summary results indicated no multicollinearity among independent variables. The study concludes by highlighting the importance of understanding these relationships for assessing bank performance in Nepal.

Keywords: Return on Assets (ROA), Return on Equity (ROE), Non-Performing Loan Ratio (NPLR), Interest Rate Spread (IRS), Loan and Advance Ratio (LAR), and Cash Reserve Ratio (CRR).

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Non Performing Assets affect not only the finance institution but also the total financial system. Thus, a selective study has been done on selected commercial banks in Nepal to evaluate the effect of Non Performing Assets on the profitability of banks. Banks today are not judged only based on number of branches and volume of deposits but also based on standard of assets. NPAs negatively affect on the profitability, liquidity and solvency of the banks. To start with, performance in terms of profitability is a benchmark for any business enterprise including the banking industry. However, increasing NPAs have a direct impact on profitability of banks as legally banks are not allowed to book income on such accounts and at the same time, banks are forced to make provision on such assets.

Non-performing assets (NPAs) are crucial in evaluating a bank's financial performance. Understanding the term "assets" is essential in defining NPAs. Assets refer to the possessions of an individual or a company, representing what they own acquired through various means. NPAs specifically denote loans provided by commercial banks that customers have failed to repay within the stipulated timeframe. When loans are overdue and not returned promptly by clients, they are categorized as NPAs for banks (Suvitha & Gayathri, 2018).

The NPA ratio stands out as a pivotal metric within the banking sector, serving as a key indicator of asset quality. It plays a crucial role in assessing how effectively a bank manages credit risk. Banks strive to minimize the incidence of fresh NPAs to enhance the overall quality of their asset portfolios. Furthermore, NPAs are not only a reflection of asset quality but also underscore a bank's proficiency in allocating resources and managing credit risk.

The consensus in literature emphasizes that asset quality significantly influences the sound functioning of the banking system. NPAs impact operational efficiency, thereby affecting key financial metrics such as profitability, liquidity, and solvency. The consequences of NPAs include reduced interest income, heightened provisioning levels,

pressure on profitability, and a potential decline in the ability to meet rising costs. This situation may lead to increased strain on net interest margins (NIM), reducing competitiveness and eroding capital resources over time. Managing NPAs effectively is crucial for banks to maintain financial health and sustain growth in capital resources.

Non-performing assets (NPAs) significantly impact the financial health of banks, affecting their profitability, liquidity, and solvency. A sustained increase in NPAs can undermine a bank's viability over time. As NPAs accumulate, they diminish the interest spread for banks. These assets erode the average earnings derived from loan assets and overall assets on the bank's balance sheet. The reduced income stemming from NPAs not only lowers a bank's total earnings but also impedes its ability to offer competitive Prime Lending Rates (PLR).

As such, this study investigates the influence of NPAs on the financial performance of commercial banks in Nepal.

1.2 Problem Statement

The commercial banking industry in Nepal is still in a developmental phase and operates under the regulatory framework established by the Rastra Bank of Nepal, the country's central bank. Core banking activities primarily involve mobilizing deposits and channeling them into lending for various industries. While lending is encouraged for fostering economic growth by directing funds towards productive purposes, it also carries inherent credit risk. This risk arises from borrowers failing to meet their contractual obligations, a challenge well-recognized within Nepal's banking sector where non-performing assets (NPAs) have become increasingly problematic and difficult to manage.

The issue of swelling NPAs has particularly affected Nepalese banks, with many institutions grappling with significant levels of non-performing loans. The allocation of bank investments often leans towards less productive sectors due to inadequate supervision and unhealthy competition. This has led to concerns over whether loans are being utilized effectively and the absence of long-term policy frameworks coupled with insufficient commitment to their implementation exacerbates these challenges. The rules and regulations laid down by the central bank serve as critical tools for supervising and monitoring financial institutions.

Loans and advances constitute a major portion of assets for banks, and mismanagement in administering these assets has been identified as a leading cause of liquidity crises and, in some cases, bank failures. This trend is observable in major government-owned banks like Nepal Bank Limited (NBL) and Rastriya Banijya Bank (RBB), which have prominently featured in media reports for their high NPA levels. Recently, private sector banks have also faced increasing scrutiny and challenges related to NPAs, prompting debate within the banking sector about the underlying causes of these issues.

In summary, the Nepalese commercial banking sector continues to grapple with the impact of NPAs, highlighting the importance of effective risk management practices and robust regulatory oversight in ensuring financial stability and sustainability.

The Nepalese banking sector is currently grappling with significant challenges related to non-performing assets (NPAs). This study aims to address several key issues:

- i. Assessing the current profitability status of commercial banks in Nepal.
- ii. Examining the correlation between profitability and non-performing assets within these banks.
- iii. Analyzing the impact of non-performing assets on the profitability of commercial banks operating in Nepal.

1.3 Objectives of the Study

The primary aim of this study is to explore how non-performing assets (NPAs) influence the profitability of commercial banks in Nepal. Specific objectives include:

1. To assess the current profitability status of commercial banks operating in Nepal.
2. To examine the direct impact of non-performing assets on the profitability levels of these banks.
3. To analyze the correlation between profitability and non-performing assets within the context of Nepalese commercial banks.

1.4 Rationale of the Study

The success and prosperity of a bank hinges on its effective utilization of collected resources, which in turn stimulates the economy. Sound lending practices by banks positively contribute to economic development, while increasing non-performing loans

present a significant challenge for commercial banks today. Mobilizing and deploying domestic savings effectively is crucial for sustainable economic growth, with commercial banks playing a pivotal role in aggregating small savings from Nepalese individuals and channeling them into productive investments.

The primary objective of this study is to investigate the strategies and methodologies employed by Nepalese commercial banks to mitigate the conversion of performing assets into non-performing assets (NPAs). It also aims to assess global best practices that could potentially be adopted by Nepalese banks to address this issue effectively.

Loans and advances constitute the most lucrative assets for banks, generating substantial income through interest earnings, which prominently feature in a bank's income statement. However, lending carries inherent risks, and failure to manage these risks can lead to significant losses, as evidenced by numerous bank failures worldwide attributed to loan devaluation. Credit risk, or the risk of non-repayment of loans, underscores the importance of maintaining a portfolio of performing assets, as non-performing loans can erode a bank's capital base.

The current scenario in Nepal reflects a growing challenge of swelling non-performing assets, particularly affecting major banks such as Nepal Bank Limited and Rastriya Banijya Bank Limited, where NPAs exceed 50% of total deposits. This study focuses on analyzing the proportion of NPAs relative to total assets, deposits, and lending across various commercial banks in Nepal. It seeks to determine whether banks have adhered to loan loss provisioning requirements as stipulated by the Nepal Rastra Bank (NRB). Additionally, the study explores the impact of NPAs on a bank's Return on Equity (ROE) and Return on Assets (ROA), identifies inherent shortcomings, and proposes recommendations for improvement where necessary.

Overall, this research is expected to be of interest to students, academics, and professionals alike, offering insights into the challenges and strategies related to managing NPAs in the Nepalese banking industry.

1.5 Limitations of the Study

The study has several limitations that need to be acknowledged:

- I. Profitability in an organization is influenced by numerous factors, yet this study focuses exclusively on those directly impacted by non-performing assets within commercial banks.
- II. The research relies entirely on secondary data provided by the banks themselves, which limits the study's reliability to the accuracy and completeness of the available data.
- III. The study is constrained by its reliance on data spanning only a decade (Financial Year 2016/17 to 2022/23), potentially limiting the depth of longitudinal analysis.
- IV. The scope of the study is restricted to only four commercial banks within the Nepalese banking industry, which may not fully represent the broader sector's dynamics and variations.

CHAPTER II

LITERATURE REVIEW

This chapter comprises four sections. The first section, theoretical review, second empirical review impact of non-performing assets on the financial performance of the Nepalese commercial banks and related concepts. The third section offers an empirical review of the relevant topic. Lastly, the fourth section presents the research gap identified within the study.

2.1 Theoretical Review

Nonperforming assets (NPAs) are recorded on a bank's balance sheet or that of other financial institutions. When borrowers fail to repay loans according to the agreed terms, lenders may take actions such as forcing liquidation of pledged assets or categorizing the asset as bad debt and selling it at a discounted rate to collection agencies, if no collateral was pledged.

NPAs are crucial for assessing the financial performance of banks. They reflect how effectively banks manage their loan portfolios. To understand NPAs, it's important to first grasp the concept of assets, which are the possessions or property owned by individuals or companies, accumulated through various means. Nonperforming Assets (NPAs) specifically denote loans provided by commercial banks that borrowers have not repaid within the stipulated timeframe. When loans become overdue and borrowers fail to meet payment obligations, they are categorized as NPAs by banks.

Historically, banks have been institutions dealing with money, currency, and bullion. They collect deposits in the form of currency or gold from savers and provide loans to borrowers under specific terms and conditions regarding interest rates and repayment schedules. Banks pay interest to depositors and charge various fees, commissions, and interest rates to borrowers. Banks also facilitate transactions such as bill discounting, guarantees, issuance of letters of credit, investment in securities, and underwriting.

The term "bank" derives from the Italian word "banco," meaning bench, as early bankers conducted their business while seated at benches. Over time, the functions of banks have evolved, leading to competition from other financial institutions such as securities dealers, brokerage firms, and insurance companies, which offer similar services.

Various definitions of banks emphasize their roles in facilitating financial transactions, providing credit, and managing deposits and loans. From being described as manufacturers of credit to facilitators of exchanges, banks play a pivotal role in the economy by mobilizing funds and supporting economic activities.

Historically, notable banks like the Bank of Venice, established in 1157 A.D., marked the beginnings of modern banking practices in Europe. Subsequent establishments such as the Bank of Barcelona and the Bank of Geneva further contributed to the evolution of banking across the continent. In England, formal banking began with English Goldsmiths around 1640 A.D., while the Bank of Amsterdam emerged as a prominent institution during the 17th century.

In summary, NPAs are critical indicators of a bank's financial health, reflecting its ability to manage credit risk effectively. Banks, historically rooted in managing money and facilitating economic transactions, continue to evolve amidst competition from other financial service providers.

Commercial banks are fundamental components of the financial system, serving as intermediaries that gather savings from the community and allocate them for productive purposes. Governed under the Commercial Bank Act 2031, these institutions are mandated to operate with a commercial purpose, pooling savings and directing them towards profitable investments and administrative support.

Commercial banks hold deposits from individuals, government entities, and businesses, channeling these funds through lending and investment activities to support borrowers ranging from individuals to large corporations and government entities. By facilitating the flow of funds from producers to consumers, they play a crucial role in the economy's smooth operation and significantly influence monetary policy implementation.

Beyond their financial intermediary role, commercial banks contribute actively to economic development by bolstering confidence among various economic segments and extending credit to individuals and businesses. They serve as reservoirs of economic resources, collecting diverse capital from across the country through their network of branches. Operating as corporations, they accept demand deposits that can be withdrawn on demand via checks, and they specialize in providing short-term loans to businesses.

According to definitions by various banking authorities and laws such as the Nepal Commercial Bank Act, 2031 B.S. (1974 A.D.), commercial banks are institutions that exchange currencies, accept and hold deposits, extend credit through loans, and perform a range of commercial banking functions. Given the multifaceted roles they undertake in modern economies, defining a commercial bank precisely can be challenging due to the diversity and complexity of their operations.

In essence, commercial banks are pivotal entities within the economic framework, crucial for mobilizing savings, facilitating investment, and fostering economic growth through their financial services and intermediation activities.

2.2 Conceptual Review

There exist various types of banks, each playing distinctive roles within a country's financial system. Among these, commercial banks hold significant importance as they aggregate community savings for productive use and cater to the financial requirements of modern businesses through various means. They primarily accept deposits from the public that can be withdrawn on demand or short notice, focusing on financing short-term and medium-term needs of trade and industry, such as working capital financing. The Commercial Bank Act, 2031 B.S. (1974 A.D.) of Nepal defines commercial banks as organizations engaged in money exchange, accepting and granting loans, and performing commercial banking functions, excluding banks dedicated to cooperative, agricultural, industrial, or specific purposes (Bank and Financial Institution Ordinance, 2005).

Prior to the formal establishment of banking systems in Nepal, financial transactions were conducted informally by moneylenders such as sahu-mahajans, zamindars, and within limited ethnic groups like guthis. These transactions, based on personal understandings, involved deposits of valuables like gold and silver for security. While private moneylenders contributed to economic activities, their operations lacked legal oversight, often leading to monopolistic practices and exploitation of borrowers. This prompted the need for formal financial intermediaries to support economic development.

Throughout Nepal's history under rulers like the Kirati, Lichchhavi, Malla, Rana, and Shah dynasties, economic development was not a primary concern until the establishment of formal financial institutions. Historical records, such as the "Vanshavali" from the

fourteenth century, document the categorization of local residents into professions, including Tankadharis who engaged in borrowing and lending of money (coins), thus serving as traditional bankers in Nepal.

During the Rana regime, efforts towards economic development began with the establishment of institutions like the "Tejarath Adda" in 1936 A.D. (1993 B.S.). Under Prime Minister Ranoddip Singh Rana, Tejarath Adda operated as a credit house providing loans secured against gold and silver to government employees and the public. This initiative marked the inception of formal banking practices in Nepal, aimed at curbing high interest rates imposed by private moneylenders and facilitating economic growth through institutionalized financial services.

The pivotal development in Nepal's banking sector occurred with the establishment of Nepal Bank Limited in 1937 A.D. (1994 B.S.), under the Nepal Bank Act of the same year. As the country's first commercial bank, Nepal Bank Limited played a foundational role in advancing financial inclusion and supporting economic activities through regulated banking practices.

Initially, 49% of Nepal Bank Ltd.'s ownership was held by promoters and the general public, with the remaining owned by the government, marking the inception of formal banking in Nepal. The bank's establishment aimed to consolidate dispersed capital for productive use, setting the groundwork for a modern banking culture in the country. Nepal Rastra Bank (NRB), established on April 26, 1956 A.D. (Baisakh 14, 2013 B.S.) under the Nepal Rastra Bank Act of 1955 A.D. (2012 B.S.), serves as the central bank of Nepal, wholly owned by the government. NRB plays a pivotal role in economic development by issuing timely directives to all financial institutions across the nation.

Rastriya Banijya Bank (RBB), Nepal's second commercial bank, was founded in 1965 A.D. (2022 B.S.) under the Rastriya Banijya Bank Act of 1964 A.D. (2021 B.S.), with full government ownership. Both Nepal Bank Ltd. (NBL) and RBB have significantly contributed to Nepal's banking sector by offering reliable services and channeling small savings into productive investments in industry, agriculture, and commerce. The introduction of the Commercial Bank Act in 1976 A.D. (2033 B.S.) expanded the financial sector, enabling the emergence of multiple commercial banks focused on public

welfare, including lending for agriculture, industry, trade, and providing banking services nationwide.

Economic liberalization in 1982 A.D. (2039 B.S.) marked a turning point by allowing foreign banks to operate joint ventures in Nepal, aiming to enhance economic growth through collaborative efforts. Joint Venture Banks (JVBS) formed alliances to achieve mutual objectives beyond individual capabilities, bolstering Nepal's economic development. Subsequently, Nepalese promoters were encouraged to establish commercial banks with 100% domestic investment, leading to the emergence of banks such as Nepal Industrial and Commercial Bank (NIC), Lumbini Bank Ltd., Machhapuchhre Bank Ltd., Bank of Kathmandu, Nepal Credit and Commerce Bank Ltd., Laxmi Bank Ltd., Siddhartha Bank Ltd., and Kumari Bank Ltd.

These domestic banks now compete vigorously, meeting diverse customer needs amid a challenging globalized market environment. Modern commercial banks in Nepal operate under the Commercial Bank Act of 1974 A.D. (2031 B.S.) and NRB directives, focusing not only on profit maximization but also on fostering trade, commerce, industry, agriculture, and supporting priority sectors. Their functions include accepting deposits, facilitating fund transfers, creating money, and providing short-term loans to individuals, companies, and organizations, all regulated by mandatory rules and directives to ensure stability and growth in Nepal's banking sector.

In conclusion, the evolution of Nepal's banking history underscores the transition from informal money lending practices to formalized financial institutions, essential for economic development and the facilitation of banking services across the nation.

2.3 Empirical Review

2.3.1 Articles on International Context

Kryzanowski, Liu, and Zhang (2023) conducted a study on the impact of the COVID-19 pandemic on non-performing loans (NPLs) in China. Their research aimed to assess the resilience of Chinese banks during this unprecedented health crisis by analyzing changes in NPL ratios. They discovered that despite a slowdown in total bank lending growth, NPL ratios experienced a notable increase during the COVID-19 period. Banks with

robust capital quality, particularly high-quality capital and Tier 1 capital ratios, demonstrated better ability to manage their NPL ratios during the crisis. Specifically, major banks, state-owned banks, and domestic banks exhibited lower NPL ratios compared to their counterparts. Unlike previous economic crises, the COVID-19 pandemic represents a unique public health shock that significantly impacted national economies globally. Analyzing data from China, the study found a direct correlation between increases in COVID-19 cases and rising NPL ratios in Chinese banks. The research highlighted that banks with higher equity and Tier 1 capital ratios were successful in mitigating the adverse effects on their NPL ratios during this crisis. Furthermore, the study underscored significant differences in NPL ratios between large banks (Big Five) and smaller domestic banks, as well as between state-owned and non-state-owned domestic banks. These findings hold critical implications for both banks and regulatory authorities navigating through unprecedented health crises. They emphasize the importance of high-quality capital structures and robust regulatory frameworks in bolstering banks' resilience during such challenging times. The study contributes significantly to the evolving literature on the impacts of COVID-19 on financial systems, providing valuable insights for policymakers and practitioners alike.

Saliba, Farmanesh, and Athari (2023) conducted a study that examines the influence of country risk on non-performing loans (NPLs) in the banking sectors of Brazil, Russia, India, China, and South Africa (BRICS). The research seeks to address gaps in existing literature by focusing specifically on how various country-specific risks—namely financial, economic, and political risks affect the credit risk of banks operating in these emerging economies. The study employs panel data analysis using the quintile estimation approach, covering the period from 2004 to 2020. The empirical findings indicate that country risk significantly contributes to the increase in credit risk within the banking sectors of BRICS countries. This effect is particularly pronounced in countries where non-performing loans are already prevalent. Specifically, the study underscores that political, economic, and financial instabilities in emerging countries are closely linked to heightened credit risk in their banking sectors. Among these risks, political instability demonstrates the strongest positive impact on credit risk, especially in countries where non-performing loans are more prevalent. Furthermore, the research highlights that in

addition to country-specific risks, factors such as financial market development, lending interest rates, and global risk conditions also significantly influence credit risk in the banking sectors. The robustness of these findings suggests important policy implications for policymakers, bank executives, researchers, and analysts alike. Understanding these dynamics can inform strategic decisions aimed at mitigating credit risks and enhancing the stability of banking systems in emerging economies.

Naaz (2022) conducted a study on the impact of non-performing assets (NPAs) on the profitability of public sector banks (PSBs) in India. Following the initial phase of economic liberalization, the Indian banking sector underwent significant transformations, with heightened emphasis on credit management. Banks have adopted more cautious lending practices due to the increasing incidence of NPAs. This study aims to comprehend the factors contributing to NPAs and proposes corrective measures to mitigate their impact on banks. The primary objective of Naaz's study is to analyze how NPAs affect the profitability of PSBs. NPAs pose substantial challenges to banks, not only as liabilities but also as systemic risks affecting overall financial stability. The proliferation of NPAs adversely affects operational performance, which in turn impacts a bank's profitability, liquidity, and solvency. The escalation of NPAs constrains fund recycling and diminishes banks' capacity to extend further credit, leading to reduced interest income. Therefore, reducing and managing NPAs is crucial for enhancing banks' operational efficiency and profitability. Naaz underscores the necessity of investigating the relationship between NPAs and bank profitability, particularly among major PSBs grappling with mounting NPA levels. Regulatory interventions by the Reserve Bank of India (RBI) have prompted banks to adopt proactive measures in managing NPAs. Decreasing NPAs is imperative for bolstering bank profitability, necessitating banks to implement diverse strategies aimed at NPA reduction. In conclusion, Naaz's study contributes to understanding the critical impact of NPAs on the financial health of PSBs and advocates for effective NPA management strategies to enhance bank profitability and overall sector stability.

Gaur and Mohopatra (2021) conducted a study titled *Non-performing Assets and Profitability: Case of Indian Banking Sector*, highlighting the challenging scenario faced by the Indian banking sector due to a persistent rise in non-performing assets (NPAs).

Their research aimed to examine the relationship between NPAs and bank profitability in India, assessing the severity of NPAs' impact on financial performance. Additionally, the study considered various bank-specific, industry-specific, and macroeconomic factors influencing banking profitability. Using a balanced panel dataset encompassing 37 scheduled commercial banks in India spanning from 2006 to 2019, Gaur and Mohopatra employed fixed effect and random effect panel regression models to derive their conclusions. Robust standard errors were utilized due to the presence of heteroskedasticity in the data. The findings revealed a strongly negative correlation between NPAs and two key measures of profitability: return on assets (ROA) and return on equity (ROE). Specifically, NPAs were identified as the primary factor detracting from banking industry profits, evidenced by the highly significant and negative regression coefficient associated with NPAs. In essence, the study underscored that deteriorating credit quality significantly impairs banks' operational performance and increases the likelihood of financial distress. This research contributes to understanding the critical impact of NPAs on the Indian banking sector's profitability and emphasizes the importance of effective measures to mitigate NPA levels for sustaining financial health and stability in the sector.

Sharma, Kothari, and Rathore (2020) conducted a comprehensive analysis on the profitability and non-performing assets (NPAs) of selected Indian public and private sector banks. Their study aimed to enhance operational efficiency and profitability by examining the impact of NPAs. The research methodology employed descriptive statistics, graphical representations, correlation analysis between variables, and a statistical t-test to assess the significance of the correlations. The escalating levels of NPAs impose strain on fund recycling and constrain banks' capacity to extend further loans, thereby reducing interest income. To improve banks' efficiency and profitability, it is crucial to mitigate and control NPAs. The study observed an increasing trend of NPAs not only in public sector banks but also in private sector banks. It sought to establish a causal relationship between gross NPAs and net profitability of banks, focusing on major public sector banks such as State Bank of India, United Bank of India, Central Bank of India, Punjab and Sind Bank, Punjab National Bank, Indian Overseas Bank, IDBI Bank, and Bank of Baroda, as well as private sector banks including ICICI Bank, Axis Bank,

and Dhanlaxmi Bank. The analysis utilized secondary data spanning 13 years from the financial year 2006-2019. It aimed to uncover the correlation between NPAs and profitability across these banks, emphasizing the need for effective strategies to manage NPAs for sustained financial health and operational efficiency in both public and private sector banking institutions.

Nachimuthu and Veni (2020) conducted an analysis on the impact of non-performing assets (NPAs) on the profitability of Indian scheduled commercial banks over a decade-long period. The study aimed to assess how NPAs have affected the profitability of these banks from 2007-2008 to 2016-2017. Banks are pivotal institutions within the economic and financial framework of any nation, serving as indicators of its economic potential. With substantial investment capabilities, banks can play a crucial role in poverty alleviation and tackling unemployment. They also have the potential to reduce regional, sectoral, and interpersonal disparities across India. Currently, the banking sector is grappling with the issue of increasing NPAs, which pose significant challenges to financial stability. The primary objective of the study was to quantify the impact of NPAs on the profitability of Indian scheduled commercial banks during the specified ten-year period. The research employed ratio analysis, regression analysis, and statistical tests to explore the relationship between NPAs and bank profitability. By examining these metrics over time, the study sought to provide insights into the broader implications of NPAs on the financial health and operational efficiency of Indian scheduled commercial banks.

Gaur and Mohapatra (2020) conducted an analysis on non-performing assets (NPAs) and profitability within the context of the Indian banking sector. The study utilized a balanced panel dataset comprising 37 scheduled commercial banks in India over a span of 14 years, from 2005 to 2018. The primary objective was to investigate the relationship between NPAs and profitability, aiming to gauge the significant impact of NPAs on the financial performance of banks. The Indian banking sector is currently facing a challenging period characterized by a noticeable rise in NPAs, which poses a significant test to its strength and resilience. The study sought to comprehensively explore how NPAs influence the profitability of banks operating within this sector. In addition to NPAs, the analysis also considered various bank-specific factors, industry-specific

dynamics, and broader macroeconomic influences that affect banking profitability. Conclusions were drawn using fixed effect and random effect panel regression models, which allowed for a robust examination of the NPA-profitability relationship over the specified timeframe. By employing these analytical methods, the study aimed to provide insights into the severity of NPAs as a determinant of bank profitability in the Indian banking landscape.

Gaur and Mohapatra (2020) conducted an analysis on non-performing assets (NPAs) and profitability within the Indian banking sector. They examined the relationship between NPAs and profitability across a balanced panel dataset comprising 37 scheduled commercial banks in India over a period of 14 years (2005–2018). The study aimed to elucidate the impact of NPAs on bank profitability, considering various bank-specific, industry-specific, and macroeconomic factors. The Indian banking sector currently faces challenges due to a rising trend in NPAs, which is posing significant tests to its resilience and strength. The primary objective of the research was to explore how NPAs influence the profitability of banks in India. To achieve this, fixed effect and random effect panel regression models were employed to draw conclusions from the dataset. By analyzing these data, the study sought to provide insights into the gravity of NPAs' impact on bank profitability and to discern how other factors within the banking industry and broader economy contribute to this relationship. The findings contribute to a deeper understanding of the dynamics between NPAs and profitability within the Indian banking sector.

Banu and Vepa (2018) conducted an analysis on the impact of non-performing assets (NPAs) on the profitability and efficiency of the banking sector in India. The study focused on examining how NPAs adversely affect the performance and profitability of banks. They employed a t-test to validate their hypotheses and found a significant inverse relationship between NPAs and both return on assets (ROA) and return on equity (ROE) across all segments of the banking sector. The banking sector in India faces a critical challenge as standard assets are increasingly turning into NPAs at a rapid rate, particularly in categories like sub-standard, doubtful, and loss assets. The escalating levels of NPAs have underscored the necessity for effective management and control measures. One of the primary challenges lies in accurately assessing credit risks

associated with loans disbursed to corporate entities and individuals. The study aimed to analyze the compounded growth of asset classifications over a decade-long period from 2008 to 2017 across various types of banks, including public sector, private sector, foreign banks, and all scheduled commercial banks. This analysis provided insights into how NPAs impact key profitability indicators such as ROA and ROE, highlighting the broader implications for the financial stability and operational efficiency of the Indian banking sector.

Bhardwaj and Chaudhary (2018) conducted an analysis on the non-performing assets (NPAs) of commercial banks and their recovery in India. The study aimed to assess the status of NPAs in Indian Scheduled Commercial Banks and to understand their impact on the banking sector. It also explored methods for recovering NPAs through various channels and provided recommendations to prevent future NPAs and manage existing ones effectively. The research relied on secondary data sources and discussed the conceptual framework of NPAs, highlighting trends, status, and their impact on scheduled commercial banks over a decade from 2004 to 2014. The growth of NPAs directly influences the profitability of banks, making them a significant concern for the Indian banking sector. Efforts have been made to address the issue of old NPAs in bank balance sheets, although there remains a lack of consensus on the most effective policies for resolution. NPAs serve as indicators of bank performance, with high levels indicating a higher likelihood of credit defaults that can diminish profitability, net-worth, and asset value. Moreover, NPAs affect liquidity and pose threats to asset quality and the overall survival of banks, thereby impacting the broader economy as well. The study underscores the critical need for effective strategies to manage NPAs, emphasizing their pivotal role in shaping the financial health and stability of commercial banks and the economy at large.

Suvitha and Gayathri (2018) conducted a comprehensive evaluation of non-performing assets (NPAs) in Indian commercial banks, aiming to identify sectors with higher NPAs (Public vs. Private sector banks), root causes, and measures to control the rising NPAs. The study employed financial and statistical tools and relied on secondary data for analysis. Their review of existing literature indicated a predominant focus on NPAs' levels and strategies for their management. Their analysis revealed that NPAs are more

prevalent in Public Sector Banks compared to Private Sector Banks. Specifically, they found that 3% of the literature reviewed focused on identifying the causes of NPAs, 14% concentrated on strategies to control NPAs, 12% addressed both the causes and control measures, 28% examined both causes and strategies, 36% explored the levels and control measures, and 7% encompassed all three aspects: levels, causes, and control measures of NPAs. The primary reasons behind the escalating NPAs were attributed to inadequate credit risk management by banks and deliberate defaults by borrowers. This underscores the critical need for robust risk assessment practices and effective measures to mitigate NPAs in the Indian banking sector.

Watt and Williams (2018) conducted an analysis focused on leveraging technologies to redefine business operations, prompted primarily by the escalating issue of non-performing assets (NPAs) in the banking sector. NPAs are defined as loan assets that fail to generate income for the bank due to non-payment. Since March 31, 2004, NPAs have been categorized as credit facilities where interest or principal payments remain overdue for a specified period, typically four quarters. The study particularly addresses the increasing trend of NPAs in public sector banks, which has sparked considerable debate. The aim of the study was to investigate the reasons behind loans turning into NPAs in these banks and propose effective strategies to mitigate this issue. The findings underscored that NPAs significantly detract from the profitability of the banking industry, evidenced by their strongly negative regression coefficient. This highlights how deteriorating credit quality undermines banks' operational performance and poses risks of financial instability. In conclusion, the study emphasizes the critical need for public sector banks to adopt innovative technologies and strategic measures to effectively manage and reduce NPAs, thereby safeguarding their financial health and sustainability.

Bhatia and Dahiya (2016) conducted a study focused on analyzing the non-performing assets (NPAs) of public sector banks in India, with a specific emphasis on comparing NPAs in priority and non-priority sectors. The research also delved into examining the measures implemented by the Reserve Bank of India (RBI) to recover NPA accounts. The study utilized a methodology that combined descriptive and analytical research designs, relying primarily on secondary data analyzed quantitatively. The investigation utilized statistical data on NPAs of public sector banks in the agriculture sector spanning

from the fiscal years 2009-10 to 2013-14. This data was employed to scrutinize the trends and movements of NPAs, their correlation with bank performance, and the efficacy of NPA management strategies. Banks play a crucial role in economic development by extending credit to sectors facing deficits, such as agriculture, to foster their expansion and development. However, this process of credit creation inherently carries credit risk, which can manifest as NPAs. In recent years, banks have become more cautious in extending loans due to stringent income recognition, asset classification, and provisioning norms introduced by the banking sector. Managing NPAs has thus emerged as a significant challenge for public sector banks in India. In today's competitive banking landscape, banks are evaluated not only based on the number of branches and deposit volumes but also on the quality of their asset portfolios. NPAs, constituting a substantial portion of these portfolios, impose a significant burden on the banking industry as a whole. In conclusion, the study underscores the critical importance of effective NPA management strategies and regulatory oversight in ensuring the financial health and sustainability of public sector banks in India.

Mohammed and Srivenkataramana (2013) conducted a critical evaluation focusing on the non-performing assets (NPAs) of Indian commercial banks. The study aimed to assess the performance of commercial banks in India by examining the quality of their loan assets, particularly those contributing to NPAs, and suggesting measures for effective NPA management. The analysis relied on secondary data. During the period from 2008 to 2013, the study observed a significant upward trend in both gross and net NPAs among public sector banks, indicating an undesirable and concerning development. In contrast, private sector banks, many of which maintained NPAs below one percent, demonstrated more effective management of NPAs. When considering all scheduled banks together, the trend in gross NPAs showed a steady increase, with a minor exception in the year 2010-11 when it marginally decreased compared to the previous year. The analysis of sub-standard loan assets by groups within banks revealed a consistent upward trend for public sector banks, highlighting their increasing exposure to NPAs over time. In contrast, private sector banks exhibited a reverse trend, reflecting their comparatively better performance in managing NPAs. Similarly, doubtful loan assets showed a rising trend among public sector banks as a group, further emphasizing their challenges with

NPAs compared to their private sector counterparts. In conclusion, the study underscores the importance of effective NPA management strategies, especially for public sector banks in India, to mitigate the adverse impact of NPAs on their financial health and operational efficiency.

Table 1

Summary of Empirical Review

Year and Author	Topic	Objectives	Methodology	Findings
Kryzanowski, Liu and Zhang (2023)	Effect of COVID-19 on non-performing loans in China.	To examine the resilience of Chinese banks during the COVID-19 pandemic by investigating non-performing loan (NPL) ratios	Regression and correlation analysis has been applied. There was descriptive and casual research design used.	It was found that despite the reduction in the growth rate of total bank lending, bank NPL ratios significantly increase during the COVID-19 crisis. Banks with high-quality capital are more effective in controlling their NPL ratios during the Crisis.
Saliba, Farmanesh and Athari (2023)	Does country risk impact the banking sectors' non-performing loans? Evidence from BRICS emerging economies.	To examine impact of country risk on the credit risk of the banking sectors.	The methods of the study perform panel data analysis using the quantile estimation approach covering the period 2004–2020.	The results underscore that an emerging country's political, economic, and financial instabilities are strongly associated with increasing the banking sector's credit risk and a rise in political risk in particular has the most positive prominent impact on the banking sector of countries with a higher degree of non-performing loans. Credit risk is significantly impacted by the financial market development, lending interest rate, and global risk. The results are robust and have significant policy suggestions for many policymakers, bank executives, researchers and analysts.
Kiran and Jones (2022)	Effect of non-performing assets on the profitability of banks, a selective study	To evaluate the effect of Non Performing Assets on the profitability of banks	SBI and five nationalized banks were selected for the study and the relation between their gross Non Performing Assets and net profit was measured through	The result shows that except for SBI all the other banks exhibit a negative correlation between their gross Non Performing Assets and net profits. But for SBI the net profit is not at all affected by Gross Non Performing Assets and it is

Naaz (2022)	Effect of the Non-Performing Assets on the Profitability of the Public Sector Banks.	To analyze the effect of nonperforming assets (NPAs) on the profitability of public sector banks (PSUs).	regression and correlation analysis. Regression and correlation analysis has been applied. There was descriptive and casual research design used.	in continuous profits only. The rising number of non-performing assets (NPAs) puts a strain on fund recycling and limits banks' ability to lend further, resulting in lower interest income. NPAs must be reduced and regulated in order for banks to improve their performance and profitability.
Gaur and Mohopatra (2021).	Non-performing Assets and Profitability: Case of Indian Banking Sector.	To explore the NPA–profitability relationship for the Indian banking sector,	A balanced panel data set comprising 37 scheduled commercial banks of India over a time frame of 14 years (2005–2018) has been used for the purpose of required analysis. Random effect panel regression models.	A highly negative correlation exists between NPA and the two profitability measures return on assets (ROA) and return on equity (ROE). The results of this study have established NPA as the major detractor of banking industry's profits because NPA carries the most negative regression coefficient which is highly significant.
Sharma, Kothari and Rathore (2020)	Causal analysis of profitability and non-performing asset of selected Indian public and private sector banks.	To analyze the improving the efficiency and profitability, analyze the NPA affect the operational efficiency.	The research methods used in the analysis of the data is the descriptive statistics, graphical presentation, the correlation between two variables and then a statistical t-test is applied	The efficiency and profitability of banks, NPA needs to be minimized and controlled. NPA is not only increasing in Public sector banks but also in the Private sector banks as well. In this study an effort has been made to know the correlation between NPAs and Profitability of banks for which major Public and Private sector banks have been considered who are facing the problem of mounting NPAs.
Nachimuthu and Veni (2020)	Impact of non-performing assets on the profitability in Indian scheduled commercial banks.	To measure the impact of NPAs on the profitability of Indian scheduled commercial banks for the period of ten years.	The study discusses the impact of NPA on the profitability in India scheduled commercial banks for the past ten years from 2007-2008 to 2016-2017. The ratio analysis, regression analysis, tests.	Banks are considered as the nerve-centres of economics and finance of any nation and the barometer of its economic prospective. Since the banks have stupendous investment potential, they can make a significant contribution in eliminating poverty and problem of unemployment. It can bring about a progressive reduction in inter-regional/

Gaur and Mohapatra (2020)	Non-performing Assets and Profitability: Case of Indian Banking Sector.	To explore the NPA–profitability relationship for the Indian banking sector.	A balanced panel data set comprising 37 scheduled commercial banks of India over a time frame of 14 years (2005–2018) has been used for the purpose of required analysis. Conclusions have been drawn employing fixed effect and random effect panel regression models.	state, inter-sectoral and inter-personal disparities in India. The banking sector is facing the problem of rising NPAs at present. The purpose of the study is to measure the impact of NPAs on the profitability of Indian scheduled commercial banks for the period of ten years. The Indian banking sector is facing an arduous time in the form of an increasing trend in non-performing assets (NPAs), which is testing its strength and resilience. The present study aims to explore the NPA–profitability relationship for the Indian banking sector, so as to determine the gravity of the impact that NPAs have on bank profitability. Further, other bank-specific, industry-specific and macroeconomic factors impacting banking profits have been taken under consideration. Due to the presence of heteroskedasticity, results for robust standard error have been reported. A highly negative correlation exists between NPA and the two profitability measures return on assets (ROA) and return on equity (ROE). The sound fundamentals of banking are required to be met for its growth. The standard assets are turning into non-performing assets at an alarming rate, with a steep rise in sub-standard, doubtful and loss assets categories. The high rising levels of non-performing assets have brought to light the need to manage and keep them well under control. The major challenge lies in the assessment of credit risk for
William and Hegan (2019)	Demand or Bank Non-performing Assets	To analyze the impact of nonperforming assets on profitability.	There were descriptive and casual research designs used. Regression analysis, co-relations and hypothesis tests were used.	Due to the presence of heteroskedasticity, results for robust standard error have been reported. A highly negative correlation exists between NPA and the two profitability measures return on assets (ROA) and return on equity (ROE). The sound fundamentals of banking are required to be met for its growth. The standard assets are turning into non-performing assets at an alarming rate, with a steep rise in sub-standard, doubtful and loss assets categories. The high rising levels of non-performing assets have brought to light the need to manage and keep them well under control. The major challenge lies in the assessment of credit risk for
Banu and Vepa (2018)	Impact of Non-Performing Asset on Profitability and Efficiency of Banking Sector in India	to analyze the adverse effect of non-performing assets on the performance and profitability of the banking sector	The t-test is executed to test the hypothesis. It is observed that there exists an imperative inverse relationship between the non-performing asset and the return on asset and return on equity across all banking sectors.	Due to the presence of heteroskedasticity, results for robust standard error have been reported. A highly negative correlation exists between NPA and the two profitability measures return on assets (ROA) and return on equity (ROE). The sound fundamentals of banking are required to be met for its growth. The standard assets are turning into non-performing assets at an alarming rate, with a steep rise in sub-standard, doubtful and loss assets categories. The high rising levels of non-performing assets have brought to light the need to manage and keep them well under control. The major challenge lies in the assessment of credit risk for

Bhardwaj and Chaudhary (2018)	A Study of Non-Performing Assets of Commercial Banks and its Recovery in India.	To study the status of Non Performing Assets of Indian Scheduled Commercial Banks in India To study the impact of NPAs on Banks. To know the recovery of NPAS through various channels. To make appropriate suggestions to avoid future NPAs and to manage existing NPAs in Banks.	The study is based on secondary data. The paper discusses the conceptual framework of NPA and it also highlights the trends, status and impact of NPA on scheduled commercial banks during the period of 14 years i.e. from 2000 to 2014. Trend and Progress of Banking in India for various years, websites and a book on banking has been referred during the study	disbursement of loans and advances to corporate and individuals. It seeks to analyze the compounded growth of asset classification as well as the impact of Non-Performing Assets on the profitability proxies, namely, return on assets (ROA) and return on equity (ROE). It identified a high-level rising trend over a ten-year period from 2008-2017 across the public sector, private sector, foreign and all scheduled commercial banks. The NPAs growth has a direct impact on profitability of banks. Non-performing assets are one of the major concerns for scheduled commercial banks in India. The recommendations of Narasimham committee and Verma committee, some steps have been taken to solve the problem of old NPAs in the balance sheets of the banks. It continues to be expressed from every corner that there has rarely been any systematic evaluation of the best way of tackling the problem. There seems to be no unanimity in the proper policies to be followed in resolving this problem. NPAs reflect the performance of banks. A high level of NPAs suggests high probability of a large number of credit defaults that affect the profitability and net-worth of banks and also erodes the value of the asset. NPAs affect the liquidity and profitability, in addition to posing threat on quality of asset and survival of banks. The problem of NPAs is not only affecting the banks but also the whole
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Suvitha and Gayathri (2018)	Non-Performing Assets of Indian Commercial Banks: A Critical Evaluation.	To find out the sector which has higher NPAs (Public/Private sector banks), causes and control measures for rising NPAs.	Financial and Statistical tools are used. There is secondary data were collected.	economy. Majority of the articles deals with the level and controlling measures of NPAs. Out of the total articles we analyzed, we find out that the level of NPAs is higher in Public Sector Banks comparing with Public Sector Banks. 3% of articles dealing with the study of causes of Non-Performing Assets (NPAs), 14% of article focused on the controlling measures of NPAs, 12% of articles deals with the study of both analysis of level and causes of NPAs in commercial banks, 28% of articles deals with the focused on both cause and control measures of NPAs, 36% of articles deals with the study of both level and control measures of NPAs, 7% of articles deals with all the three components like (level, cause and control). The root of the issue of rising NPAs lies in the nature of overseeing credit chance by the banks and willful defaulters.
Watt and Williams (2018)	Leveraging Technologies to Redefine Business	To analyze the impact of non-performing assets (NPAs) on profitability.	Financial and Statistical tools are used. There is secondary data were collected.	The results of this study have established NPA as the major detractor of banking industry's profits because NPA carries the most negative regression coefficient which is highly significant. It implies that declining credit quality hampers banks' performance and leads to their collapse
Bhatia and Dahiya (2016)	A Study of Non Performing Assets (NPA's) of Public Sector Banks in Indian Intersectional Comparison	To study the trends and position of NPAs of public sector banks in priority and non priority sector. To study sector wise projections GNPAs in the	The methodology for this research is designed considering the above facets. Features of both descriptive and analytical research designs. The method typically used is	This role is performed by banks by extending credit to several deficit sectors for their expansion and development. This process of credit creation leads to credit risk which in turn leads Non-Performing Assets (NPA's). While the prime function of banks is

		<p>upcoming years. To identify the reasons for occurrence of NPAs in public sector banks. To examine the steps taken by RBI for recovery of NPA accounts. To suggest measures for efficient management of NPAs in public sector banks.</p>	<p>secondary data analyzed in a quantitative manner. Statistics on NPA of public sector banks in agriculture sector during the period (from 2009-10 to 2013-14) were utilized in order to study the position and trends in movement of NPA, its relationship with bank's performance, and efficiency of management of NPA.</p>	<p>to lend funds to various sectors such as agriculture, industry, personal loans, etc., but in recent times the banks have become very vigilant in extending loans. With the introduction of income recognition, asset classification and provisioning norms in the banking sector, managing NPAs has emerged as one of the major challenges facing public sector banks in India. In today's competitive scenario banks are judged not only on the basis of number of branches and volume of deposits but also on quality of assets. Non-performing assets form a major part of Banks portfolio and hence are an inexorable burden on the banking industry.</p>
<p>Mohammed, and Srivenkatarama, (2013).</p>	<p>Non-Performing Assets of Indian Commercial Banks: A Critical Evaluation.</p>	<p>To study the performance of commercial banks in India To examine the asset quality for commercial banks in India To find out the health of various categories of loan assets that contributes of NPA To suggest some measures for NPA management.</p>	<p>The analysis is done on the basis of secondary data The NPA (both gross and net) of public sector banks shows a marked rising trend during the 5 year period 2008-13. Clearly, this is an undesirable and disturbing aspect.</p>	<p>The private sector banks particularly those which are now have the NPA often less than one percent, which points to their efficiency of NPA management. On pooling the figures, the GPA for all scheduled banks (figure 2) shows a steadily rising trend with an exception for the year 2010-11; when it was marginally lower than that in the previous year. The group-wise sub-standard loan assets of the banks show an upward trend for public sector banks. The trend is reverse for the private sector banks, a feature in keeping with the contrasting positions regarding NPAs. The group-wise doubtful loan assets have recorded an increasing trend in the case of public sector banks as a group.</p>

2.3.2 Empirical Review Nepalese Context

Pradhan (2022) has highlighted that if the growth of non-performing assets (NPAs) is not kept under control, it has the potential to lead to systemic crises. According to him, the aspiration for globalization spurred substantial investments, which unfortunately were not effectively utilized due to hesitant liberalization policies. Major corporate entities misused credit facilities, delayed payments, and indirectly contributed to the rise in NPA ratios. The argument presented emphasizes several factors contributing to the increase in NPAs, including deficiencies in the appraisal of loan proposals, inadequate review or enhancement of credit limits, and the absence of robust risk management policies in financing. Furthermore, there is a concern about credit concentration in a few groups of parties and sectors. Pradhan also identifies the deficient and borrower-friendly legal system as a critical reason for the escalation in NPAs.

Gnawali (2021) conducted an analysis on the impact of non-performing assets (NPAs) on the profitability of Nepalese commercial banks. The study aimed to assess how non-performing loans (NPLs) affect the financial performance of these banks, specifically examining their relationship with various financial indicators such as total loans to total deposits, capital adequacy ratio, loan loss provision, and firm size in relation to return on assets (ROA) and return on equity (ROE). The research relied on secondary data collected from 13 banks in Nepal, including both government and non-government banks. Sources of data included Banking and Financial Statistics, Bank Supervision Reports published by Nepal Rastra Bank, and annual reports of the banks. Regression models were employed to analyze and determine the significance and impact of NPLs on the profitability metrics of Nepalese commercial banks. The study highlighted the critical role of credit functions in enhancing the ability of investors to engage in profitable ventures. It underscored that credit risk management is crucial for bank profitability, given that a substantial portion of banks' revenues come from interest earned on loans. The rising prominence of non-performing loans in recent decades has drawn increasing attention due to its potential to lead to bank failures within the banking system.

Pokharel (2020) conducted a study on the impact of non-performing assets (NPAs) on the profitability of Nepalese commercial banks. The level of NPAs serves as a crucial

indicator of the financial health of a country's economic sector. The presence of non-performing assets not only affects the banking industry but also exerts broader impacts on the entire financial system and the national economy. The primary objective of the research was to assess how NPAs influence the profitability of Nepalese commercial banks. Specifically, the study aimed to investigate these effects across different categories of banks, including government-owned banks and private sector banks. The sample for the study included five out of twenty-four individual private sector banks and one out of three government-owned banks. Data for the analysis were gathered from secondary sources, primarily from the Nepal Rastra Bank's website and the annual reports of the selected banks. The study employed descriptive statistics to characterize the primary features of the data and inferential statistics to assess the impact of NPAs on bank profitability. Key independent variables considered in the analysis included the credit deposit ratio, employee expenses as a proportion of total operating expenses, and gross non-performing assets. The dependent variables were return on assets (ROA) and earnings per share (EPS). The findings of the study revealed that private sector banks exhibited a lower growth rate of NPAs compared to the government-owned Agriculture Development Bank. The study highlighted that the government-owned bank struggled with managing unsecured loans effectively, leading to a significant increase in such loans. Furthermore, the analysis indicated a positive relationship between NPAs and profitability, suggesting that higher NPAs were associated with improved profitability metrics in the context of Nepalese commercial banks.

Adhikari (2020) examined the issue of non-performance from a perspective favoring businessmen. He argues that businessmen contribute significantly to the country's economy as major taxpayers to the government. Recently, the Nepal government introduced a policy to revoke the passports of international defaulters, but Adhikari contends that identifying intentional defaulters remains challenging. He points out those businessmen, particularly in Nepal, have been severely affected by years of economic crises. If their financial challenges are not addressed with understanding and support, they may seek opportunities in neighboring countries, which would ultimately lead to losses for the nation.

Shrestha (2019) conducted a study on non-performing loans (NPLs) and loan loss provisioning practices in commercial banks, specifically Nepal Bank Ltd, NABIL Bank Ltd, and Standard Chartered Bank Nepal Ltd. The primary objectives were to assess the proportion of non-performing loans, identify factors contributing to the accumulation of NPLs, analyze the relationship between loans and loan loss provisions, and evaluate the impact of loan loss provisions on the profitability of these banks. The study recommends that all three banks exercise caution and realism in their loan granting processes. It suggests implementing training and development programs for employees to enhance their proficiency in credit appraisal, monitoring, and risk management. Furthermore, it acknowledges that regulations governing loan classification and provisioning have become stricter under the Nepal Rastra Bank (NRB), suggesting that the NRB should not only enforce directives but also create a supportive environment for commercial banks. To improve credit risk management, the study proposes strengthening the Credit Information Bureau (CIB) so that banks can access timely and accurate credit information about borrowers, thereby helping to reduce non-performing loans (NPLs).

Shrestha (2018) highlighted the significant challenge posed by managing bad loans, which has been a high-priority concern in the country over the past decade. Despite concerted efforts, notable successes have not yet materialized. The transfer of management control of two major government banks to foreign experts exemplifies recent financial sector reform initiatives. However, after almost four years, the outcomes of this management transfer have not met expectations. This research identifies that both government-owned and private sector banks in Nepal are gradually being affected by non-performing loans (NPLs). Therefore, management must prioritize efforts to reduce the level of NPLs effectively. The study also points out instances where reported non-performing loans include loans extended to businesses that ceased operations a decade ago, yet these loans continue to be classified as non-performing. Such practices contribute to the increasing NPL levels in these banks.

Bhattarai (2017) examined the implementation of directives issued by Nepal Rastra Bank (NRB) through a comparative study of Nepal SBI Bank Ltd. and Nepal Bangladesh Ltd. The study aimed to analyze various aspects of NRB directives, particularly focusing on capital adequacy, loan classification, and loan provisioning. The findings underscored

that loan classification plays a crucial role in enabling banks to monitor the quality of their loans and advances. It allows them to take timely remedial actions to improve the credit quality of their loan portfolios. The study concluded that under the new provisions, banks would likely see an increase in their provisioning amounts in the coming years, which could subsequently impact their profitability. However, it emphasized that this approach would provide a more accurate assessment of the banks' asset quality in the future. Moreover, the study highlighted the importance for banks to carefully assess the repayment capacity of their credit clients. It warned that prolonged overdue periods could compel banks to increase provisions, thereby potentially lowering their bottom line unless they exercise caution in their lending practices.

Khadka (2016) conducted a study on the non-performing assets (NPAs) of Nepalese commercial banks, focusing on several objectives including the examination of NPAs in relation to total assets, total deposits, and total lending within the banking industry of Nepal. The sample banks analyzed included Nepal SBI Bank Limited, Nepal Investment Bank Limited, Nepal Bangladesh Bank Limited, Bank of Kathmandu Limited, and Nabil Bank Limited. The study found that Nepal Bangladesh Bank Limited had the highest level of NPA among the banks studied. Following closely were Nepal SBI Bank and Bank of Kathmandu, which ranked second and third, respectively. Nabil Bank Limited showed a satisfactory position as it has been consistently reducing its NPA levels each year. Nepal Investment Bank Limited also demonstrated success in managing NPAs, although the study noted that its provision for loan losses was insufficient compared to regulatory requirements. Overall, the research highlighted varying levels of NPA management among the selected banks, with some showing effective reduction strategies while others needing to enhance their provisions for loan losses to meet regulatory standards.

Suneja (2015) discusses the causes of non-performing assets (NPAs), emphasizing that the risk associated with lending to businesses is influenced by numerous factors. Factors include the specific economic conditions, demand trends for the products or services provided, competition from other suppliers, insufficient financial resources, and inadequate management capabilities. Highlighting the challenges, she underscores that one of the most difficult decisions a banker faces is deciding when to recall a loan and

initiate the process of liquidating the collateral. Additionally, she suggests that in cases where customers fail to repay their loans on time, banks must carefully consider appropriate steps to recover the debt.

Ghimire (2014) conducted a study on non-performing assets (NPAs) in commercial banks, focusing primarily on evaluating their impact on profitability. The research explored both internal and external factors contributing to the increase in NPAs from loans and advances. Internal factors such as ineffective management practices and deficiencies in credit policies were identified as significant contributors to NPA growth. Weak legal provisions and credit concentration were also highlighted as less favorable factors that turn good loans into bad loans. Factors like lack of portfolio analysis and insufficient security were noted to have a moderate impact on NPA escalation. The study concluded that Nepalese commercial banks should prioritize lending to the trade sector, while underscoring a need to enhance emphasis on the service sectors. Recommendations were made to sample banks including Nepal Bangladesh Bank Ltd., Nepal SBI Bank Ltd., and Bank of Kathmandu Ltd. across various aspects such as strengthening financial robustness, ensuring personal integrity and security, implementing effective monitoring and control systems, avoiding credit concentration, advocating for a robust legal framework, establishing asset management capabilities, and resisting undue pressures in lending practices.

2.4 Research Gap

In previous empirical studies, it has been identified that increasing Non-Performing Assets (NPAs) presents a significant challenge for Nepalese commercial banks in the current context. Some researchers have explored whether loan loss provisions adequately address NPAs. The extent of NPAs is a crucial indicator of a nation's financial health, impacting not just the banking sector but also the broader financial system and the economy of the country. This investigation aims to assess how NPAs influence the profitability of Nepalese commercial banks during the period from July 16, 2013, to July 16, 2018. Additionally, the study examines the impact on the financial sector by categorizing banks into government-owned and private sector banks. A sample of five out of twenty-four individual private sector banks and one out of three government-

owned banks has been selected for this study. Data for the analysis were collected from the Nepal Rastra Bank's website and the annual reports of the respective banks. Hence, this thesis had attempted to fill this research gap by taking the reference, Everest Bank Limited, Himalayan bank, Standard Chartered Bank Nepal Limited and Everest Bank Limited. This research will be able to deliver some of the present issue, latest information and data relating to Non-performing assets.

The Return on Assets ratio of the NABIL, SCBNL is being lower than the standard level 2 but SCBNL and is slightly higher than standard level. Hence, the management should take steps to properly utilize the assets. The above descriptive statistics as presented that the SCBNL and of weighted average interest spread became maximum. The Coefficient of variation point of views, SCBNL and seen more uniforms than NABIL and SCBNL. The NABIL and SCBNL profitability ratios found more haphazard than SCBNL and RBB. The sample banks are sufficient to meet the current obligation of the bank, which shows the sound profitability position. Similarly, Regression point of views, The return on assets and Non performing loan of sample banks seen positive trends to each other while, return on assets and Weighted average interest rate spread of sample banks seen negative trends. Comparatively, the NABIL and SCBNL bank should make efforts to increase the earnings per share and profitability ratio for its further business growth and development to compare SCBNL and RBB. On studying the impact of non- performing Assets on the profitability of NABIL SCBNL and RBB for a period of ten years from 2013/014 to 2022/023, the study reveals that the profitability performances of sample banks are better.

CHAPTER- III

RESEARCH METHODOLOGY

3.1 Research Design

This research employs a descriptive and causal-comparative research design. Descriptive writing aims to provide clear accounts of factual occurrences, while analytical writing involves deeper analysis. This study specifically investigates non-performing loans and the corresponding loan loss provisions managed by commercial banks. To meet the study's objectives, secondary data were utilized. The collected data underwent analysis using financial and statistical tools, including profitability ratios, arithmetic mean, standard deviation, among others.

3.2 Population and Sample

The population in this study comprises all 20 commercial banks operating in Nepal, encompassing the entirety of entities, events, or individuals that the researcher aims to examine. Specifically, the study focuses on loan classification and loan loss provisioning within these commercial banks. Out of these 20 banks, a sample of 4 commercial banks has been selected for detailed investigation. The selected banks for this study are SCBNL, RBB, and NABIL.

3.3 Sources of Data

The primary sources of information for this study include documents published by the commercial banks themselves, as well as those published by the Nepal Rastra Bank (NRB). Additionally, insights from experts, newspapers, and various other sources are considered where possible.

The primary data sources are complemented by secondary sources, which include information obtained from books, journals, newspapers, published reports, and other credible sources. Specifically, the major sources of secondary data are:

- Economic Survey published by the Ministry of Finance
- Directives issued by Nepal Rastra Bank
- Nepal Rastra Bank's publications (e.g., NRB Samachar)

- Annual reports of the commercial banks under study
- National and international newspapers, journals, and magazines
- Publications from the Nepal Stock Exchange (NEPSE)
- Various relevant books
- Different websites

These sources collectively provide a comprehensive basis for gathering secondary data pertinent to the study on loan classification and loan loss provisioning in Nepalese commercial banks.

3.4 Tools for Analysis

Several statistical tools including SPSS version 20 and Excel were employed to process and analyze the data collected. Secondary data from the annual reports of the selected banks were initially organized in Excel spreadsheets and subsequently analyzed using appropriate formulas and functions within the software. Statistical techniques such as correlation analysis were applied, and financial metrics like return on assets were calculated where applicable.

The analytical methods encompassed descriptive statistics, mean calculation, standard deviation assessment, coefficient of variation computation, as well as regression and correlation analyses, as deemed necessary for the study. These tools facilitated a comprehensive examination of loan classification and loan loss provisioning in Nepalese commercial banks.

3.4.1 Descriptive Statistics

In addition to financial tools, statistical methods were employed to enhance the analysis and interpretation of relationships between variables in this study. Statistical tools encompass mathematical techniques utilized to analyze data and derive meaningful interpretations. These tools were instrumental in describing relationships between variables and interpreting the findings effectively. The specific statistical tools utilized in this study include descriptive statistics, mean calculation, standard deviation calculation, coefficient of variation analysis, regression analysis and correlation analysis. These tools were selected and applied based on the study's requirements to provide a robust

understanding of loan classification and loan loss provisioning dynamics within Nepalese commercial banks.

- **Percentage**

A percentage represents a fraction of one number in relation to another, expressed as parts per hundred. It is a fundamental statistical tool commonly used for interpreting various phenomena. The calculation of percentage is straightforward and is determined by the following formula:

$$\text{Percentage (P)} = \frac{B}{A} \times 100$$

Where,

A= Base used to compare

B= given data to be compared with the base

- **Average**

The average, also known as the mean, is a fundamental statistical measure used extensively to determine the central tendency of a dataset. It is a single value that represents the typical value of a group of variables. The mean provides a concise summary of the distribution of data points. In statistical analysis, the mean represents the arithmetic average of a set of values and is positioned approximately at the center of the data distribution. It is calculated using the following formula:

$$\text{Average (mean)} \quad \bar{X} = \frac{\sum X}{N}$$

- **Standard Deviation**

Standard deviation is widely recognized as a valuable measure of dispersion within a dataset. It quantifies the extent to which data points deviate from the mean, providing insight into the spread or variability of the data. A higher standard deviation indicates greater variability among data points, while a lower standard deviation suggests that the data points are closer to the mean.

Mathematically, standard deviation is calculated using the following formula:

$$\text{Standard Deviation (S.D.)} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

- **Coefficient of Variation (C.V.)**

The coefficient of variation (C.V.) is a percentage-based measure that assesses the relative dispersion of data points in relation to their mean. It serves as a measure of variability that considers the context of the mean value, making it particularly useful when comparing datasets with different means. A lower coefficient of variation indicates greater uniformity and consistency among data points, whereas a higher coefficient of variation suggests greater variability. Standard deviation provides an absolute measure of dispersion, reflecting the spread of data points around the mean. However, comparing two sets of variables based solely on standard deviation is inappropriate when their means differ significantly. This limitation is overcome by using the coefficient of variation, which normalizes the standard deviation by dividing it by the mean. The formula for coefficient of variation is:

$$\text{Coefficient of Variation (C.V.)} = \frac{\text{Standard Deviation}}{\text{Mean}} \times 100$$

3.4.2 Correlation Analysis

Correlation analysis is one of the inferential statistics, which is used to show the relationship among study variables. The result of Pearson correlation coefficient may be found in between +1 and -1. The result of correlation coefficient indicates the strength of the relationship between variables. In this study the correlation coefficient have been estimated among the study variable like ROA, NPLR and IRS etc.

3.4.3 Multiple Regression Analysis

The regression analysis is one of the inferential statistics, which is used to estimate the effect of one or more independent variables on a dependent variable. The model used in this study has been outlined as follows:

$$ROA_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 IRS_{it} + \beta_3 LAR_{it} + \beta_4 CRR_{it} + \epsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 IRS_{it} + \beta_3 LAR_{it} + \beta_4 CRR_{it} + \epsilon_{it}$$

Where,

NPL = Non-performing loan defined as ratio of non- performing loan to total loan of firm.

IRSit = Interest Rate Spread of bank.

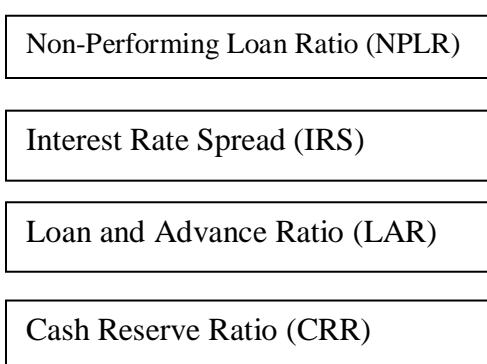
LARit = Loan and Advance ratio.

CRRit = Interest Rate Spread of bank.

Eit = Error

3.5 Conceptual Framework

Independent Variable



Dependent Variable

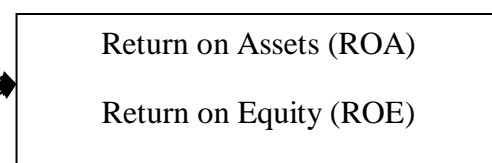


Figure 1: Research Framework

(Farmanesh & Athari, 2023)

3.6 Study Variable and Definition

A. Dependent Variable

The dependent variable is what is being studied and measured in the experiment. It is what changes because of the changes to the independent variable.

i. Return on Assets (ROA)

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage and it's calculated as: $ROA = \text{Net Income} / \text{Total Assets}$

ii. Return on Equity (ROE)

Return on equity (ROE) is the measure of a company's net income divided by its shareholders' equity. ROE is a gauge of a corporation's profitability and how efficiently it generates those profits. The higher the ROE, the better a company is at converting its equity financing into profits. Return on equity is displayed as a percentage and it's calculated as: $ROE = \text{Net Income} / \text{Shareholder's Equity}$

B. Independent Variable

The independent variable is the variable whose change isn't affected by any other variable in the experiment. Either the scientist has to change the independent variable herself or it changes on its own; nothing else in the experiment affects or changes it.

i. Non-Performing Loan Ratio (NPLR)

Banks rely heavily on borrowers to make timely repayments on their loans, which constitutes a significant portion of their revenue stream. A loan is classified as nonperforming when the borrower fails to make scheduled payments for at least 90 days. This category of loans is commonly referred to as nonperforming loans (NPLs). The nonperforming loan ratio, often referred to as the NPL ratio, is a key metric used to assess the health of a bank's loan portfolio. It is calculated by dividing the total amount of nonperforming loans by the total amount of outstanding loans held by the bank. This ratio serves as a crucial indicator of the bank's effectiveness in managing and recovering repayments on its loans. In summary, the NPL ratio provides insight into how well a bank is managing credit risk and recovering funds from borrowers. It is a vital metric used by financial institutions and regulators to gauge the quality of a bank's loan portfolio and its overall financial health.

ii. Interest Rate Spread (IRS)

A difference or spread between two related interest rates occurs in many types of business or finance transactions. As it relates to your business, a spread could be relevant if you are borrowing money or if your business involves lending or arranging for loans for your customers. As it relates to small business, a rate spread could be an expense or source of profit.

iii. Loan and Advance Ratio (LAR)

An amount that is in the form of debt given out by a financial organization to another firm or an individual in exchange for the future repayment of the same amount along with interest over a period. The terms of a loan are mutually agreed by each party involved in the transaction before any exchange of funds take place. The source of financing provided by the banks to the companies, to meet their short-term requirements. Contrasting to loans, advances are a credit facility. The terms of the advances are decided by the central bank and the bank lending the amount.

iv. Cash Reserve Ratio (CRR)

Cash reserve ratio (CRR) is the percentage of a bank's total deposit that it needs to maintain as liquid cash. This is an NRB requirement, and the cash reserve is kept with the NRB. A bank does not earn interest on this liquid cash maintained with the NRB and neither can it use this for investing and lending purposes.

CHAPTER-IV

RESULT AND DISCUSSION

This chapter analyzes the various financial indicators and study variables. Therefore, this chapter is based on the presentation and analysis of the secondary data, which help to conclude and draw some recommendations.

4.1 Descriptive Statistics of Study Variables

This section focuses on exploring the relationships between Non Performing Loans (NPL), Interest Rate Spreads (IRS), Loan and Advance Ratio (LAR), and Cash Reserve Ratio (CRR) with Return on Assets (ROA) and Return on Equity (ROE) across sampled commercial banks. ROA and ROE are treated as dependent variables, while NPL, IRS, LAR, and CRR are considered independent variables influencing them.

Correlation analysis is employed to assess these relationships. It examines how changes in NPL, IRS, LAR, and CRR correlate with fluctuations in ROA and ROE. Simple correlations and coefficients of determination are computed to measure the strength and direction of these associations. Additionally, multiple correlation coefficients and multiple coefficients of determination are analyzed to understand the combined impact of the independent variables on the dependent variables.

Furthermore, multiple regression analysis is conducted to quantify the extent of influence that NPL, IRS, LAR, and CRR collectively have on ROA and ROE. Regression equations are derived to predict ROA and ROE based on variations in the independent variables.

Descriptive statistics are utilized to provide a comprehensive overview of ROA, ROE, NPL, IRS, LAR, and CRR across the three sampled commercial banks from the period of 2012/2013 to 2021/2022. This includes computing mean values, standard deviations (S.D.), coefficients of variation (C.V.), as well as identifying maximum and minimum values within each sector.

In summary, this study employs correlation and regression analyses alongside descriptive statistics to explore and quantify the relationships and impacts of NPL, IRS, LAR, and

CRR on the financial performance metrics of sampled commercial banks over a specified period.

Table 2

Descriptive Analysis

Variables	ROA	ROE	NPL	IRS	LAR	CRR
Average (Mean)	1.6417	28.26	65.93	80.29	0.92	0.85
Std. Deviation	28.152	5.35	11.61	5.41	0.38	0.46
C.V.	17.148	42.12	12.30	6.23	0.32	0.49
Minimum	1.19	31.58	.81	61.68	36.80	45.20
Maximum	2.03	61.82	1.76	83.95	62.20	68.17

Source: Annual report of selected banks

Table 2 shows that the descriptive statistics depicts that, ROA show the considerable variability with a mean of 1.6417%. The standard deviation of 28.152% indicates significant dispersion around the mean, suggesting fluctuating performance over the study period. ROE averages at 28.26, with a relatively high standard deviation of 5.35. This indicates variability in equity returns across the observed period, with the coefficient of variation (42.12%) highlighting the dispersion relative to the mean. NPL averages 65.93, with a standard deviation of 11.61. The coefficient of variation (12.30%) indicates moderate variability around the mean, reflecting fluctuating levels of non-performing loans. IRS averages 80.29, with a standard deviation of 5.41. The coefficient of variation (6.23%) suggests relatively low variability around the mean, indicating stable interest rate spreads over the study period. LAR averages 0.92, with a standard deviation of 0.38. The coefficient of variation (0.32%) indicates low variability around the mean, suggesting a relatively stable lending ratio across the observed period. CRR averages 0.85, with a standard deviation of 0.46. The coefficient of variation (0.49%) indicates moderate variability around the mean, suggesting fluctuations in cash reserve requirements.

Both show significant variability, with ROA exhibiting a wider range and higher standard deviation compared to ROE. Non Performing loan ratio displays moderate variability, reflecting changes in non-performing loan levels over time. Interest rate spread shows stable performance with low variability, indicating consistent interest rate spreads. Loan and advance ratio indicates relatively stable lending practices with minimal fluctuation. Cash reserve ratio shows moderate variability, reflecting changes in cash reserve management. These descriptive statistics provide a comprehensive overview of the performance and variability of each financial metric studied, offering valuable insights for further analysis and decision-making in financial management.

4.2 Correlation Analysis

Correlation analysis is a statistical technique utilized in research to assess the strength of the linear relationship between two variables and determine their association. It quantifies how changes in one variable correspond to changes in another. A high correlation indicates a robust relationship between the variables, whereas a low correlation suggests a weak relationship. Central to this analysis is the correlation coefficient, a statistical measure that quantifies the strength and direction of the linear relationship between variables.

Table 3

Correlations Matrix

Variables		ROA	ROE	NPL	IRS	LAR	CRR
ROA	Pearson Correlation	1					
	Sig. (2-tailed)						
ROE	Pearson Correlation	-.402	1				
	Sig. (2-tailed)	.249					
NPL	Pearson Correlation	.740*	-.761*	1			
	Sig. (2-tailed)	.014	.011				
IRS	Pearson Correlation	-.430	-.396	-.155	1		
	Sig. (2-tailed)	.214	.257	.668			
LAR	Pearson Correlation	-.670*	.594	-.749*	.230	1	
	Sig. (2-tailed)	.034	.070	.013	.523		
CRR	Pearson Correlation	.712*	-.818**	.943**	.035	-.783**	1
	Sig. (2-tailed)	.021	.004	.000	.923	.007	.004

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

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

Table 3 shows the relationships between six variables: ROA, ROE, being dependent NPL, IRS, LAR and CRR are independent variables. The matrix displays the Pearson correlation coefficient for each pair of variables, which measures the strength and direction of the linear relationship between them. The Pearson correlation coefficient ranges from -1 to 1, where -1 indicates a perfect negative correlation, 0 indicates no correlation, and 1 indicates a perfect positive correlation. Starting with the diagonal elements, the correlation of a variable with itself is always 1, as it is perfectly correlated with itself.

Moving on to the other elements of the matrix, it can be seen that there is a significant positive correlation between NPL and ROA (0.740) and between NPL and CRR (0.943), with p-values of 0.014 and 0.000, respectively. This suggests that as the percentage of non-performing loans increases, the return on assets and the cash reserve Ratio also tend to increase. There is a negative correlation between ROE and ROA (-0.402), which is not statistically significant ($p=0.249$). This implies that there is a weak negative relationship between the two measures of profitability, but the correlation is not strong enough to be considered statistically significant. IRS is negatively correlated with ROA (-0.430), ROE (-0.396), and NPL (-0.155), but these correlations are not statistically significant. This suggests that there may be some weak relationship between interest rate spread and these variables, but it is not strong enough to be considered significant. There is a strong negative correlation between LAR and ROA (-0.670), which is statistically significant ($p=0.034$). This suggests that as the Loan and advance ratio decreases, the return on assets tends to increase. Finally, there is a strong positive correlation between CRR and NPL (0.943) and a strong negative correlation between CRR and ROE (-0.818), both of which are statistically significant ($p=0.000$ and $p=0.004$, respectively). This indicates that as the Cash Reserve ratio increases, the percentage of non-performing loans also tends to increase, while the return on equity tends to decrease.

In summary, the correlation matrix provides insight into the relationships between the six variables and highlights the strength and direction of their linear relationships.

4.3 Regression Analysis

The regression analysis is one of the inferential statistics, which is used to estimate the effect of one of more independent variable on a dependent variable.

Table 4

ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.255	7	.465	2.711	.035 ^b
	Residual	3.774	22	.172		
	Total	7.029	29			

a. Dependent Variable: ROA

b. Predictors: (Constant), NPA, IRS, LAR and CRR

ANOVA (Analysis of Variance) calculations involve several key steps. Initially, it entails computing means and variances across different groups or treatments. Subsequently, ANOVA computes the ratio of two variances and compares this ratio to a critical value from a standard reference table to establish statistical significance. Once statistical significance is determined, assessing the treatment effect becomes straightforward. The effect of any treatment is typically estimated by calculating the difference between the mean of the observations that received the treatment and the overall mean of all observations. This approach allows researchers to quantify and interpret the impact of treatments or interventions in experimental studies.

Table 5

Coefficients Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations	
		B	Std. Error	Beta			Zero-order	Partial
1	(Constant)	.900	1.215		.741	.005		
	LAR	-1.543	.000	-.691	-3.548	.002	-.481	-.603
	CRR	.027	.023	.229	1.182	.250	.104	.244
	IRS	.041	.074	.102	.552	.00	-.021	.117
	NPA	-.245	.146	-.396	-1.679	.005	.114	-.337

Table 5 shows that the relationships among the study variables depicted in the model have tested using correlation with ROA and LAR separately, which is presented in the

table. The results show that ROA has negatively correlated with LAR (-1.543), because sample banks heavy accumulated profit and optimal capital prescribed. The corresponding P value is 0.21; it is more than significance level i.e.0.05. Statistically, there is no significant relationship between ROA and LAR respectively.

Table 6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.657 ^a	.432	.243	3.57125	.432	2.283	7	21

Table 6 presents the results of a statistical analysis using linear regression. The model is characterized by several key metrics, including the coefficient of determination (R-squared), the adjusted R-squared, the standard error of the estimate, and the change statistics. The R-squared value of the model is 0.657, indicating that the model accounts for 65.7% of the variance in the dependent variable. The adjusted R-squared value, which takes into account the number of predictors in the model, is 0.243. The standard error of the estimate is 3.57125, which is the average distance between the observed values and the predicted values in the model. The change statistics show the change in R-squared and F-value as each predictor is added to the model. The R-squared change is 0.432, indicating that the predictors account for a significant portion of the variance in the dependent variable. The F-value of 2.283 indicates that the predictors have a significant impact on the model.

Table 7

ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.839	7	29.120	2.283	.068 ^b
	Residual	267.830	21	12.754		
	Total	471.668	28			

a. Dependent Variable: ROE

b. Predictors: (Constant), NPA, IRS, LAR, and CRR

ANOVA (Analysis of Variance) involves calculating various means and variances, then comparing the ratio of two variances against a critical value from a reference table to ascertain statistical significance. Once significance is determined, assessing the treatment effect becomes straightforward. The effect of a treatment is typically estimated by computing the difference between the mean of observations subjected to the treatment and the overall mean of all observations. This approach allows researchers to quantify and interpret the impact of treatments or interventions in experimental settings.

Table 8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	df1	df2
1	.757 ^a	.334	.332	3.7541	.542	2.45	9	23

The R Squared Value of the model is .334, indicating that the model accounts for 33.2% of the variance in the dependent variable. The adjusted R-Squared value, which takes into account the number of predictors in the model, is .332. The standard error of the estimate is 3.7541, which is the average distance between the observed value and predicted value in the model. The change statistics show the change in R-Squared and F-Value as each predictor is added to the model. The R-Squared change is .542, indicating that the predictors account for significant portion of the variance in the dependent variable. The F-Value of 2.45 indicates the predictors have significant impact on the model.

Table 9

Coefficient Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations	
		B	Std. Error	Beta			Zero-order	Partial
1	(Constant)	18.786	10.485		1.792	.00		
	LA	8.457E-8	.000	.462	2.249	.035	.511	.441
	CRR	.151	.197	.158	.769	.000	.185	.165
	IRS	.061	.639	.019	.096	.00	.213	.021
	NPA	-.019	1.264	-.004	-.015	.000	-.301	-.003

a. Dependent Variable: ROE

b. Predictors: (Constant), NPA, IRS, LAR, and CRR

Table 9 shows the coefficient table shows the results of a linear regression analysis for a model with four predictor variables (LA, CRR, IRS, NPA) and one outcome variable. The table includes the unstandardized coefficients, standardized coefficients (Beta), t-values, and p-values for each predictor variable. The constant term is also shown. The "Correlations" section shows the zero-order and partial correlations between each independent variable and the outcome variable (ROE). The results suggest that LA and CRR are statistically significant independent variable of the outcome variable ROE, with standardized coefficients of .462 and .158, respectively. The other predictors (IRS and NPA) are not significant independent variables of the outcome variable.

4.4 Discussion

The descriptive statistics presented the notable insights into the performance and characteristics of the variables under examination. The Return on Assets (ROA) demonstrates an average ratio of 1.64% throughout the study duration, with fluctuations ranging from a minimum of 1.19% to a maximum of 2.03%. Conversely, the cash reserve ratio exhibits a mean of 68.17%, with the lowest recorded value at 0.46% and the highest at 68.17%. Furthermore, the standard deviation of the cash reserve ratio stands at 0.46%, indicating a degree of variability around the mean. It's worth noting that the standard deviation for ROA is considerably higher at 28.152%, suggesting greater dispersion in the data over the ten-year period. These findings provide valuable insights into the stability and variability of the financial metrics studied, offering a foundation for further analysis and interpretation.

The correlation matrix shows the significant insights into the interplay among the studied variables, illuminating their implications for financial performance. Notably, the positive correlation between Non-Performing Loans (NPL), Return on Assets (ROA), and Cash Reserve Ratio (CRR) suggests that as NPL increases, both ROA and CRR tend to rise, indicating a link between asset performance and management of non-performing loans and liquidity reserves. Despite a non-significant negative correlation between Return on Equity (ROE) and ROA, implying a weak inverse relationship, further exploration is warranted to ascertain its impact on financial performance. The statistically significant negative correlation between Loan and Advance Ratio (LAR) and ROA suggests that a

conservative lending approach might enhance asset profitability. Moreover, the strong positive correlation between CRR and NPL, alongside the negative correlation with ROE, underscores the delicate balance required in liquidity management, asset quality, and profitability. As CRR increases, NPL tend to rise while ROE declines, emphasizing the importance of prudent decision-making in maintaining both liquidity and profitability. This analysis lays a solid groundwork for future research and strategic decision-making in financial management optimization.

The loan and advance ratio is positively related with ROA, there is statistically significant impact. This result is consistency with Naaz, (2022) study. Similarly, Kiran and Jones (2022) have found contrast results with this study. However, Cash Reserve Ratio, Interest Rate Spread and Non Performing Assets has insignificant relationship or not statistically significant with ROA. The previous scholars Gaur and Mohapatra (2020) and Banu and Vepa (2018) found insignificant results, so there is a consistency result with our findings. Similarly, the previous scholars Kryzanowski, Liu and Zhang (2023) and Saliba, Farmanesh and Athari (2023) were also contrast with the findings of Cash Reserve Ratio, Interest Rate Spread and Non Performing Assets.

The loan and advance ratio is positively related with ROE, there is statistically significant impact. This result is consistency with Ghimire, (2014) study. Similarly, Suneja (2015) have found contrast results with this study. However, Cash Reserve Ratio, Interest Rate Spread and Non Performing Assets have insignificant relationship or not statistically significant with ROA, with the study Gnawali, (2021) has found consistency relation. The previous scholars Shrestha (2019) and Pokharel (2020) found significant results, so there is a contrast result with our findings.

This integration operates on a higher degree of analysis, offering a multifaceted approach to understanding variable relationships and their implications for outcomes. ANOVA's capacity to assess treatment effects through means and variances comparison provides a foundational understanding, while linear regression delves deeper into linear associations, offering nuanced insights with metrics like R-squared and standard error. This comprehensive approach allows for a richer understanding of variable dynamics,

enabling informed decision-making and facilitating a deeper comprehension of complex phenomena within the studied domain.

The analysis presented showcases a high degree of findings result, demonstrating the profound impact of both ANOVA and linear regression in evaluating treatment effects and predicting outcomes within financial management. ANOVA's ability to compare means and variances provides a robust foundation for establishing statistical significance, offering a clear pathway to interpreting experimental outcomes. Transitioning to linear regression, the substantial portion of explained variance in the dependent variable, as indicated by the significant R-squared value and F-value, underscores the importance of specific financial metrics like Loan and Advance Ratio (LA) and Cash Reserve Ratio (CRR) in predicting Return on Equity (ROE). Conversely, the lack of significant influence from variables such as Interest Rate Spread (IRS) and Non-Performing Assets (NPA) suggests a focused understanding of the critical metrics that drive variations in ROE, thus guiding effective strategic decision-making within financial management. This comprehensive analysis reflects a high degree of insight into variable dynamics and their implications for financial performance.

The Pearson correlation coefficient ranges from -1 to 1, where -1 indicates a perfect negative correlation, 0 indicates no correlation, and 1 indicates a perfect positive correlation. Starting with the diagonal elements, the correlation of a variable with itself is always 1, as it is perfectly correlated with itself. This suggests that as the percentage of non-performing loans increases, the return on assets and the cash reserve Ratio also tend to increase. There is a negative correlation between ROE and ROA (-0.402), which is not statistically significant ($p=0.249$). IRS is negatively correlated with ROA (-0.430), ROE (-0.396), and NPL (-0.155), but these correlations are not statistically significant. This suggests that there may be some weak relationship between interest rate spread and these variables, but it is not strong enough to be considered significant.

Additionally, the insignificance observed in studies by Pradhan (2022), Gyanwali (2021), Bhaedwaj and Chaudhary (2018), Watt and Williams (2018) underscores the complexity of financial dynamics, suggesting that while certain metrics hold predictive value in some contexts, they may not universally translate across diverse economic landscapes.

In overall the analysis conducted in this study exhibits a high degree of sophistication and depth, providing comprehensive insights into the performance metrics and their interrelationships within financial management. Descriptive statistics unveil significant variability and stability in key variables like Return on Assets (ROA) and Cash Reserve Ratio (CRR), laying a robust foundation for subsequent analysis. Moreover, the correlation matrix delves into the intricate interplay among these variables, revealing nuanced relationships that underscore the complexities of financial dynamics. The integration of ANOVA and linear regression further enhances the analytical framework, offering multifaceted approaches to understanding variable relationships and predicting outcomes with a high level of accuracy and precision. Furthermore, the comparison with previous scholarly findings elucidates both consistencies and contrasts, highlighting the importance of contextual factors and the intricate nature of financial dynamics. While some metrics demonstrate consistent predictive value across studies, others show variations influenced by contextual nuances, underscoring the need for a nuanced and context-specific approach in financial analysis and decision-making. Overall, this analysis demonstrates a high degree of rigor and sophistication, contributing valuable insights to the field of financial management.

CHAPTER-V

SUMMARY AND CONCLUSION

5.1 Summary

The study titled Impact of Nonperforming Assets on the Profitability of Commercial Banks in Nepal aims to analyze the current status of nonperforming assets (NPA) and profitability, focusing specifically on their relationship and the direct impact of NPA on profitability. Profitability in this context is influenced by various factors, but this research specifically examines those directly affected by NPAs within the commercial banking sector of Nepal.

The research relies solely on secondary data obtained from the concerned banks, ensuring that the reliability of findings is contingent upon the quality and availability of these data. The study covers a period of ten years and focuses on a subset of the Nepalese banking industry, specifically four commercial banks. Descriptive and causal research methodologies are employed to achieve the study's objectives, with data analysis conducted using financial and statistical tools such as profitability ratios, arithmetic mean, and standard deviation.

The population considered in this study consists of twenty commercial banks in Nepal, while the sample includes only four banks: NABIL, SCBNL, and RBB. The study explores the relationship between Return on Assets (ROA) and Cash Reserve Ratio (CRR) among the sampled banks. It is found that there is a significant relationship between ROA and CRR for these banks. Additionally, the study indicates that an increase in the number of branches positively influences ROA. However, for CRR, the corresponding p-value exceeds the significance level, suggesting no significant relationship with ROA. The findings also suggest that as CRR increases, there is a corresponding increase in the average influence on ROA, but the relationship is not statistically significant.

The study's results present a mix of significant and insignificant relationships across different variables, highlighting the complexity and varied impacts of NPAs and related factors on bank profitability in Nepal.

5.2 Conclusion

The study conducted an analysis of the correlation relationships among various variables in the context of commercial banks. It was observed that Return on Assets (ROA) had a negative correlation with Return on Equity (ROE), suggesting that sample banks with heavy accumulated profit and optimal capital exhibited this trend. However, statistically, there was no significant relationship between ROA and ROE. On the other hand, Cash Reserve Ratio (CRR) showed a positive correlation with ROA, indicating that sample banks effectively managed their quality of assets. Nonetheless, the relationship between CRR and ROA was found to be negative. Similarly, the number of branches was observed to have a positive relationship with ROA, but statistically, there was no significant relationship.

This suggests that as the percentage of non-performing loans increases, the return on assets and the cash reserve Ratio also tend to increase. There is a negative correlation between ROE and ROA (-0.402), which is not statistically significant ($p=0.249$). This implies that there is a weak negative relationship between the two measures of profitability, but the correlation is not strong enough to be considered statistically significant. IRS is negatively correlated with ROA (-0.430), ROE (-0.396), and NPL (-0.155), but these correlations are not statistically significant. This suggests that there may be some weak relationship between interest rate spread and these variables, but it is not strong enough to be considered significant.

Further analysis using ANOVA revealed similar findings regarding the relationship between ROA and ROE. The model summary results supported the absence of multicollinearity among the independent variables, suggesting that the regression model with ordinary least squares could be used effectively.

5.3 Implications

After conducting a detailed analysis on the impact of Non-Performing Assets (NPA) on the profitability of commercial banks in Nepal, specifically focusing on NABIL, KBL, SCBNL, and RBB, several key recommendations have been identified to enhance firm performance:

- As private sector entities, commercial banks must prioritize profitability to maintain shareholder and depositor confidence. It is recommended that banks carefully manage risky assets and shareholders' funds to maximize profit margins. This entails reducing expenses and accessing cheaper funding sources to enhance profitability.
- The NPL ratio is influenced by both external and internal factors such as interest rates, loan demand-supply dynamics, savings and investment climate, central bank directives, lending policies, and management capabilities. Banks are advised to reduce their NPL ratio to meet current obligations and loan demands effectively.
- In the competitive banking sector, focusing on customer needs is crucial. Banks should strengthen their marketing efforts to attract and retain customers. Developing new strategies for convenient and satisfactory customer service is essential for enhancing customer loyalty.
- Establishing a clear dividend policy guides how dividends will be distributed among shareholders. The policy should specify whether a stable dividend, a constant payout ratio, or periodic special dividends will be adopted, ensuring transparency and consistency in shareholder returns.
- Encouraging a project-oriented approach in lending can mitigate risks associated with traditional collateral-based lending. This approach supports projects vital to the national economy, even if they carry higher risks. Projects should be structured to generate sufficient cash flows for timely loan repayment.

Implementing these recommendations will likely improve the efficiency and performance of the sampled banks. Emphasizing profitability, managing NPL ratios effectively, adopting a customer-centric approach, formulating clear dividend policies, and promoting project-oriented lending are essential strategies to navigate challenges and enhance competitiveness in the dynamic banking environment of Nepal.

REFERENCE

- Adhikari, R. (2020). *Non performing assets should be justifiable*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Baidhya, S. (1996). *Banking management*. Kathmandu: monitor Nepal.
- Banu, M. & Vepa, S. (2018). Impact of non-performing asset on profitability and efficiency of banking sector in India. *MERC Global International Journal of Management*, 6 (3), 68-76.
- Basyal, K. (2014). Placing RBB and NBL under management contracts rational and opposition. *The Journal of Finance*, 2(1), 131-143.
- Bhandari, D.R. (2003). *Banking and insurance principles and practices*. Kathmandu: Asmita Books and Publications.
- Bhardwaj, P. & Chaudhary, I. (2018). A study of non-performing assets of commercial banks and its recovery in India. *International Conference on Research Developments in Arts, Social Sciences, Education and Sports*, 2 (3), 73-93.
- Bhatia, M. & Dahiya, S. J. (2016). A study of nonperforming assets (NPA's) of public sector banks in India an intersectional comparison. *International journal of scientific research*. 8 (4), 93-106.
- Bhattarai, U. (2017). *Implementation of Directives Issued by Nepal Rastra Bank: A Comparative Study of Nepal SBI Bank Ltd. and Nepal Bangladesh Ltd.* Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Bidani, S.N. (2003). *Managing non-performing assets*. New Delhi: Vision Books Publisher.
- Gaur, D. & Mohapatra, D. R. (2020). Non-performing assets and profitability: case of Indian banking sector. *The Journal of Business perspectives*, 25 (2), 180-191.
- Ghimire, R. (2013). Efficiency indicators of commercial bank. *The Economic Journal*, 2(2), 149-171.
- Ghimire, U. (2015). *Non performing assets of commercial banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.

- Gnawali, B. (2021). *Non-performing asset and its effects on profitability of Nepalese commercial banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Golchha, D. (2010). The level of NPA of NBL and RBB. *The Business Age*, 5(2), 132-143.
- Gupta, S.P. (1988). *Statistical Methods*. New Delhi: Sultan Chands and Sons.
- Joshi, P.R. (2008). *Research Methodology*. Kathmandu: Buddha Academic Publishers and Distributors (P) Ltd.
- Khadka (2016). *Non-Performing Assets of Nepalese Commercial Banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Khadka, R. (2011). *Non-Performing Assets of Nepalese Commercial Banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Koirala, P. (2016). *None performing assets and profitability of commercial banks in Nepal*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Kothari, C.R. (2007). *Quantitative techniques* (3rd Edition). New Delhi: Vikash Publishing House.
- Mohammed, A.P. & Srivenkataramana, T. (2013). Non-performing assets of Indian commercial banks: A Critical Evaluation. *Bhavan's International Journal of Business*, 8(1), 12-26.
- Nachimuthu, K. & Veni, M. (2020). Impact of non-performing assets on the profitability in Indian scheduled commercial banks. *African Journal of Business Management*, 13(4), 128-137.
- NRB Directives (2021). *Nepal Rastra Bank*. <https://www.nrb.org.np/2021/09/Unified-directives-2078-with-cover.pdf>
- Pandy, I.M. (1966). *Financial management*. New Delhi: Vikas Publishing House Pvt. Ltd.
- Pradhan, P. (2013). *Non Performing Assets Management of Commercial Banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.

- Pradhan, R. (2016). NPA some suggestion to tackle them. *The Journal of Finance*. 5(1), 23-30.
- Sharma, P.K. & Chaudhary, A.K. (2007). *Statistical method*. Kathmandu: Khanal Books Prakashan.
- Sharma, S., Kothari, R. & Rathore, D. S. (2020). Causal analysis of profitability and non-performing asset of selected Indian public and private sector banks. *Journals of Critical Reviews*, 7 (9), 96-106.
- Shrestha, K.N. & Manandhar, K.D. (2004). *Statistics and quantitative techniques for management*. Kathmandu: Valley Publishers.
- Shrestha, P. (2018). *The management of bad loan is high Former second vice president of FNCCI*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Shrestha, S. (2008). *A Study on Non-performing loan and loan loss provisioning of Commercial Banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Shrestha, S. (2019). *A Study on Non-Performing Loan and Loan Loss Provisioning of Commercial Banks*. Kathmandu: An Unpublished Master's Thesis, Office of the Dean, Faculty of Management, T.U.
- Shrestha, S.P. (2009). The management of bad loan is high Former second vice president of FNCCI. *The Banker Magazine*, 1 (2), 123-147.
- Suneja, P. (2015). *Non performing assets of commercial banks*. Kathmandu: An Unpublished Master's Thesis, office of the dean, faculty of management, T.U.
- Suneja, B. (2013). The causes of NPA that the risk connected with lending to business depend on an enormous number of factors. *The Business Age*, 4 (4), 97-110.
- Suvitha, K.V. and Gayathri, G. (2018). Non-performing assets of Indian commercial banks: a critical evaluation. *International Journal of Pure and Applied Mathematics*, 118 (20), 4537-4541.
- Watt, J. & Williams, B. F. (2018). leveraging technologies to redefine business. *American International Journal of Multidisciplinary Scientific Research*, 1 (3), 62-82.

Weston, J. F. & Brigham, E. F. (1988). *managerial finance*. california: university of California.

William, J. & Hegan, K. (2019). Demand or bank non-performing assets. *the banker Magazine*, 7 (8), 23-47.

APPENDIX

INDICATORS OF VARIABLES

Date /Variables	ROA	ROE	NPL	IRS	LAR	CCR
NABIL						
2013/014	1.160	24.21	1.32	4.30	45.652	17.12
2014/015	1.410	30.12	0.44	4.17	66.412	16.39
2015/016	1.590	29.65	0.50	3.28	58.475	15.30
2016/017	1.230	27.12	1.12	3.92	47.854	12.39
2017/018	1.100	26.45	2.21	4.27	45.745	10.27
2018/019	1.030	24.49	2.89	4.62	46.370	8.39
2019/020	1.100	19.99	4.03	3.71	54.692	7.26
2020/021	1.060	15.66	2.49	3.17	65.502	8.25
2021/022	1.690	16.64	1.15	4.59	76.106	10.20
2022/023	1.562	15.21	1.26	3.25	89.877	14.25
SCBNL						
2013/014	2.460	15.20	0.92	4.10	68.458	19.30
2014/015	2.560	16.30	0.66	3.98	58.456	18.26
2015/016	2.700	18.45	0.61	3.44	43.456	16.39
2016/017	2.550	19.65	0.62	3.28	55.475	15.26
2017/018	2.800	18.20	0.78	3.92	42,456	18.25
2018/019	2.670	23.20	0.77	4.12	41.057	19.2
2019/020	2.510	27.45	0.48	7.09	46.449	12.0
2020/021	1.990	24.10	0.34	5.27	55.428	7.2
2021/022	1.980	22.44	0.32	4.64	69.100	10.5
2022/023	1.840	27.14	0.19	5.01	77.640	8.2
RBB						
2013/014	1.650	34.25	0.68	4.34	58.475	14.25
2014/015	1.730	23.20	0.48	4.40	78.545	11.30
2015/016	2.090	27.45	0.16	4.78	74.458	9.12
2016/017	2.100	26.24	0.34	4.60	46.254	7.25
2017/018	2.110	22.25	0.84	5.32	45.758	8.45

2018/019	2.390	21.37	0.62	5.68	44.197	9.32
2019/020	2.250	24.38	0.97	5.69	48.450	11.32
2020/021	1.850	26.25	0.66	4.76	55.363	14.15
2021/022	1.610	26.37	0.38	4.89	68.911	6.77
2022/023	1.720	22.84	0.25	4.48	78.278	10.02

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ABSTRACT This study aims to evaluate the profitability position of commercial banks in Nepal and analyze the relationship between profitability and non-performing assets (NPAs). Three commercial banks, NABIL SCBNL and RBB Nepal Limited, were selected as samples from a population of 20 commercial banks in Nepal. Correlation and regression analyses were conducted using Return on Assets (ROA) and Return on Equity (ROE) as dependent variables and Non-Performing Loan Ratio (NPLR), Interest Rate Spread (IRS), Loan and Advance Ratio (LAR), and Cash Reserve Ratio (CRR) as independent variables. The findings revealed a negative correlation between ROA and ROE, attributed to heavy accumulated profit and optimal capital among sample banks. Additionally, CRR exhibited a positive correlation with ROA, indicating effective asset management. However, there was a negative correlation between CRR and ROA. Regression analysis confirmed these relationships, with an increase in ROE leading to a decrease in the average influence on ROA. Conversely, an increase in CRR resulted in a higher average influence on ROA, with statistically significant findings. ANOVA further supported the negative correlation between ROA and ROE, and model summary results indicated no multicollinearity among independent variables. The study concludes by highlighting the importance of understanding these relationships for assessing bank performance in Nepal. Keywords: Return on Assets (ROA), Return on Equity (ROE), Non-Performing Loan Ratio (NPLR), Interest Rate Spread (IRS), Loan and Advance Ratio (LAR), and Cash Reserve Ratio (CRR).

CHAPTER-I INTRODUCTION 1.1 Background of the Study Non Performing Assets affect not only the finance institution but also the total financial system. Thus, a selective study has been done on selected commercial banks in Nepal to evaluate the effect of Non Performing Assets on the profitability of banks. Banks today are not judged only based on number of branches and volume of deposits but also based on standard of assets. NPAs negatively affect on the profitability, liquidity and solvency of the banks. To start with, performance in terms of profitability is a