

NON-PERFORMING LOAN AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS

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

By

Ashoka Tamatta

Exam Roll No: 13142/19

Campus Roll No: 3839

T.U. Redg. No: 7-3-39-1889-2018

Shanker Dev Campus

Putalisadak, Kathmandu

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CERTIFICATE OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “**NON-PERFORMING LOAN AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS**” The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic 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.

.....
Ashoka Tamatta

REPORT OF RESEARCH COMMITTEE

Mr. Ashoka Tamatta has defended research proposal entitled “*NON-PERFORMING LOAN AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS*” successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidance of supervisor Joginder Goet and submits the thesis for evaluation and viva voce examination.

Joginder Goet

Position: Lecturer

Signature:

Dissertation Proposal Defined Date:

.....

Dissertation Submitted Date:

.....

Asso. Prof. Dr. Sajeeb Kumar Shrestha

Signature:

Dissertation Viva Voce Date:

.....

APPROVAL SHEET

We have examined the dissertation entitled “*NON-PERFORMING LOAN AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS*” presented by Mr. Ashoka Tamatta for the degree of Master of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

.....

Joginder Goet

.....

Internal Examiner

.....

External Examiner

.....

Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

.....

Asso. Prof. Dr. Krishna Prasad Acharya
Campus Chief

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Ashoka Tamatta
Researcher

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ABBREVIATIONS

| | | |
|-------|---|---------------------------|
| AD | : | Anno Domini |
| ANOVA | : | Analysis Of Variance |
| ATM | : | Automated Tailor Machine |
| BS | : | Bikram Sambat |
| CRR | : | Cash Reserve Ratio |
| e.g. | : | Example |
| F/Y | : | Fiscal Year |
| i.e. | : | That is |
| JVBs | : | Joint Venture Banks |
| Ltd | : | Limited |
| NEPSE | : | Nepal Stock Exchange |
| NRB | : | Nepal Rastra Bank |
| ROA | : | Return on Asset |
| SD | : | Standard Deviation |
| SEM | : | Structural Equation Model |
| T.A | : | Total Assets |
| TU | : | Tribhuvan University |

ABSTRACT

The main purpose of the study is to examine the effect of non-performing loan on financial performance of the Laxmi Sunrise Bank Limited, Siddhartha Bank Limited, Kumari Bank Limited, Nepal Bank Limited, and Prime Commercial Bank Limited. The benefits and limitations are the two faces of a same coin. Each and every research work has more or less limitations. The analysis focused on assessing the effect of non-performing loans (NPL) on bank profitability in Nepal, utilizing regression models with Return on Assets (ROA) and Return on Equity (ROE) as the dependent variables. Several financial metrics, including the Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), Non-Performing Loans Ratio (NPLR), and bank size (BS), were examined as independent variables to understand their impact on bank profitability. The correlation analysis revealed noteworthy relationships among the variables. In particular, NPLR exhibited positive correlations with ROA and ROE, indicating that higher levels of non-performing loans are associated with lower profitability. Additionally, CAR showed positive correlations with both ROA and ROE, suggesting that stronger capital adequacy tends to be associated with higher returns on assets and equity. Further analysis through ANOVA and regression models provided deeper insights into the relationships between the variables. The ANOVA results indicated that the regression models for both ROA and ROE were statistically significant, implying that at least one independent variable significantly contributes to explaining the variation in bank profitability. In the regression models, the coefficients for the independent variables shed light on their individual impacts on ROA and ROE. Notably, NPLR demonstrated a substantial positive impact on ROA and ROE, indicating that higher levels of non-performing loans are associated with reduced profitability. Conversely, variables such as CAR showed positive effects on profitability, suggesting that stronger capital adequacy positively influences bank profitability. In conclusion, while non-performing loans pose significant challenges to bank profitability in Nepal, they also present opportunities for improvement and growth. By implementing robust risk management practices and adopting proactive strategies to address non-performing loans, banks can enhance their profitability and contribute to the broader economic development of Nepal.

Keywords: Return on Assets, Return on Equity, Capital Adequacy Ratio, Cash Reserve Ratio, Non-Performing Loans Ratio, Bank Size

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Commercial banks are essential to the nation's economic development. A commercial bank must make a profit in order to remain in business and carry out its obligations as a commercial entity. Commercial banks primarily engage in two activities: the costly mobilization of resources and the lucrative deployment of those resources, which results in revenue. The bank's primary source of profit is the excess of revenue over expenditures. The bank depletes both the nation's and its own resources if it is unable to provide a suitable return on the resources used. Non-performing loans have emerged as one of our banks' biggest problems in the current environment.

A loan in which the borrower is in default and has not made any scheduled principle or interest payments for a while is known as a nonperforming loan (NPL). If a commercial debt is 90 days past due, the lender considers it nonperforming. The most important component in assessing a bank's strength is its assets. The credit administration system, the composition of risky assets, and the quality of the loan portfolio are the main variables that may be taken into account. Because bank lending is the engine driving the country's economic growth, a high percentage of non-performing loans (NPLs) is a serious worry for both the public and the bank. A rapidly rising non-performing loan (NPL) level creates a bad economic climate for the nation. Bankers need to be vigilant enough to keep the non-performing loan (NPL) at a tolerable range in order to maintain a steady presence in the market. Better risk assessment and a strong non-performing loan system are in place when the NPL ratio is lower, and vice versa. Higher loan loss provisions, on the other hand, are indicative of subpar non-performing loans as well as sufficient reserves for potential loan loss, safeguarding the individual banks' balance sheets.

The commercial banking sector in Nepal is still in its infancy. They must abide by all guidelines and instructions provided by the nation's national bank, the Rastra Bank of Nepal. Mobilizing deposits and using them to finance industry is the fundamental

operation of banks. The lending industry is often supported as it helps move money out of the system and into useful endeavors, which boosts the economy. But lending also involves non-performing loans, which result from borrowers' inability to carry out their half of the bargain throughout the lending transaction. It is well recognized that the number of non-performing loans in Nepali banks and financial institutions is increasing, and that this situation is getting out of control. NPLs in a loan portfolio have an impact on operational effectiveness, which has an impact on banks' profitability, liquidity, and solvency. The information asymmetry theory and the poor management hypothesis are used to examine how non-performing loans affect banks' profitability. This study used panel data from 16 commercial banks from 2007 to 2015 and using a causality research methodology. Multiple regression analysis estimate techniques and descriptive statistics were used in the investigation. Similarly, the Ordinary Least-Squares (OLS) regression approach was used, followed by an examination of the Fixed Effects (FE) and Random Effects (RE) hypotheses. According to the research, the prevalence of non-performing loans has a negative correlation with commercial banks' profitability levels. The findings strengthen the theories of knowledge asymmetry and poor management. Practitioners and policymakers should take note of the study's theoretical and managerial ramifications (Kingu, Macha, & Gwahula, 2018).

The capacity of commercial banks to generate a profit from their business activities is referred to as their profitability. Typically, measures like Net Interest Margin (NIM), Return on Equity (ROE), and Return on Assets (ROA) are used to quantify it. These measures evaluate the efficiency with which a bank uses its resources to create profit, the return it offers to investors, and the discrepancy between the interest revenue it earns and the amount it pays to loans. The size of the bank, loan and deposit ratios, capital sufficiency, non-performing loan ratios, and even macroeconomic variables like inflation may all have an impact on a commercial bank's profitability¹². For example, a research on commercial banks in Nepal discovered that ROA and ROE had a negative relationship with the loan, deposit, and capital ratios, but a positive relationship with bank size and inflation. Bank size, loan-to-deposit ratio, inflation,

and NIM all have positive relationships, however the capital ratio and NIM have negative relationships (Patwary & Tasneem, 2019).

1.2 Problem Statement

As of right present, one of Nepal's fastest-growing industries is the banking sector. Following the government's adoption of the liberalization program, the banking industry has seen rapid growth. However, the government was unable to give this sector enough attention because of political unrest. The banking industry has been subject to government regulation, oversight, and monitoring, much like other industries. It's also possible that other non-business behaviors have also happened in this industry. Such non-business behaviors will negatively impact our industry. In the end, it affects this sector's operations. Nepal's commercial banks have been dealing with a number of issues, particularly with lending. Lending is becoming more problematic as a result of the nation's economic situation, shifting governmental initiatives, and defaulting borrowers (Nwude, 2018). Even if the nation entered the WTO and had a liberal economy, the banking industry is still unable to take advantage of these developments. In Nepal, financing in a large project or sector has resulted in significant losses for several banks. To reduce risk, granting consortium loans for large projects is still common. Even while banks are convinced that they can only provide a person with a house loan, hire purchase loan, or overdraft up to a particular amount, investing in a large project on their own still causes anxiety (Otwoko & Maina, 2021). The non-performing loan that Nepalese Commercial Banks accepted will undoubtedly be the main assertion to be examined in this research. This research gave the following claims a lot of attention.

- i. What is the current pattern of non-performing loan and profitability of Commercial Banks in Nepal?
- ii. Is there any relationship between non-performing loan and profitability of Commercial Banks in Nepal?
- iii. What is the impact of non-performing loan on profitability of Commercial Banks in Nepal?

1.3 Objectives of the Study

Examining the effect of non-performing loans on the financial performance of Nepal's commercial banks is one of the study's main goals. The following is a list of the study's particular goals:

- i. To assess the current pattern of non-performing loan and profitability of Commercial Banks in Nepal.
- ii. To examine the relationship between non-performing loan and profitability of Commercial Banks in Nepal.
- iii. To analyze the impact of non-performing loan on profitability of Commercial Banks in Nepal.

1.4 Rationale of the Study

The main source of revenue for every commercial bank is loans. Without a doubt, the amount of quality loans a bank makes determines how much money it makes. Studying the lending processes of commercial banks is important for professionals, shareholders, bankers, and students who are interested in learning about lending practices and management. The measurement of Standard Chartered Bank Nepal Ltd. and Everest Bank Ltd.'s non-performing loans (NPL) serves as the foundation for this investigation. This study is undoubtedly important to a number of different groups of people, but it is especially focused on the following: the importance of the study to the bank's management team, shareholders, customers, financial institutions, and stock exchanges; the importance of the study to government bodies and policy makers; and the importance of the study to other parties, including competitors, stockbrokers, dealers, and market makers.

1.5 Limitations of the Study

The two sides of the same coin are the advantages and restrictions. Every study project has some degree of constraints. Some restrictions are placed on this research in order to make it accurate, significant, and important while still achieving its goal in the allotted time, space, and data. Below is a list of some of this study's limitations:

- The study is limited to only five commercial banks of Nepal.

- The study based on only the past years periods since F/Y 2013/14 AD to F/Y 2022/2023 AD.
- The study mainly focuses on the factors relating to non-performing loan and financial performance.
- The study is based on secondary data such as annual report, financial statement etc. Inaccessibility of information which could have helped to analyze other aspects of non-performing loan functioning as well.

CHAPTER II

LITERATURE REVIEW

Reviews of the literature are secondary sources; they don't provide brand-new or unique experimental work. These reviews, which are often connected to scholarly literature, may be found in scholarly publications and should not be mistaken with book reviews, which might also be published in the same magazine. The goal of a literature study is to gain knowledge in one's field, determine what fresh insights might be added, and examine potential design development ideas (Wolf & Pant, 2002). In order to do a literature review, a variety of books for conceptual frameworks are read, along with pertinent journals, papers, and prior theses.

2.1 Conceptual Review

Loans taken out from individuals or corporations for both personal and business purposes that have not been repaid in full, including interest, are considered non-performing loans. Banks are required to classify these loans as assets and maintain a provisional account for loan loss in accordance with prescribed guidelines. The operational revenue in the income statement will be subtracted from the loan loss provision held by the banks. Therefore, the bank's net profit would be lower the bigger the loan loss provision.

When an asset stops bringing in money for the bank, it is considered non-performing. A previous definition of an asset's status as a nonperforming loan (NPL) was "Past Due." A credit for which interest or a principle payment has been "past due" for a certain amount of time is referred to as a "non-performing loan" (NPL) (RBI, 2003).

A loan when the borrower is not fulfilling contractual requirements for loan repayment is, in general, referred to as a non-performing loan (NPL). When projected repayment falls short of the contractual value recorded on the bank's balance sheet, non-performing loans (NPLs) are considered impaired. Loan loss provisions, or LLPs, are created when this occurs. LLPs are deducted in accounting. The gap between the amount bank borrowers have pledged to repay and the banks' most recent estimate of the amount they will actually collect is what this accounting deduction equates to. Beyond this broad description, however, different jurisdictions, businesses, and periods of time have different requirements for what qualifies a loan as "impaired" or

"non-performing." Consequently, there are differences in the threshold for provisions and impairment. This is significant because it makes it difficult to compare the asset quality of various banks in a meaningful way. Additionally, there are broader ramifications. Many financial problems stem from bad lending. Wider economic contractions are thus often brought on by this (European Central Bank, 2013). Thus, failing to account for loan losses adequately may be a major factor in the development of crises. Furthermore, they may be made worse by ambiguity on what constitutes non-performance, which makes it harder for outsiders to determine if recapitalization and company recovery are possible (Bholat et al., 2016).

One key feature sets commercial banks apart from all other types of financial institutions in the financial institution class. Its unique ability to retain deposits that may be accessed by check makes it a significant difference. With the use of loans and demand deposits, it has the ability to generate and destroy money within certain bounds. Commercial banks use demand deposits to create loans and demand deposit cancellations to retire loans. Risk assets must be created and managed as part of credit administration. Setting objectives and goals for lending activities and allocating available funds to various lending functions, such as commercial, installment, and mortgage portfolios, require knowledge of the lending process and awareness of its strengths and weaknesses. The lending process takes into consideration the people and system required for the evaluation and approval of loan requests, negotiation of terms, documentation, disbursement, administration of outstanding loans, and workouts (Johnson, 1940).

While more contemporary systems have viewed the issuance of credit to be their function, banks and other financial organizations primarily operated as depositories for cash. In addition to taking deposits, banks also make loans and establish their own credit. Commercial banks are the most important sort of bank in the nation's financial system, however there are other kinds as well. They combine the community's savings and make plans for their beneficial use. They use a variety of methods to meet the financial demands of contemporary company. They welcome public deposits as long as they are paid back quickly or upon request. Their company's operations are limited to providing working capital loans and other short- and medium-term requirements for commerce and industry.

According to the book, non-performing loan management and its methods are considered to be essential in the banking industry. Many topics are pondered about and considered under this supervision. As an example, there are topics like loan flow policies, loan flow documentation, loan administration, loan audits, loan renewals, loan flow conditions, security provision, capital and interest payment, and other related processes. Healthy competitive activities greatly benefit from this management (Bhandari, 2003).

It is crucial to remember that declining loan and advance values account for the majority of bank failures worldwide. Thus, the risk associated with a loan not being repaid is called default risk or non-performing loan risk. Portfolio management distributes the risk across many portfolios, which helps to reduce or control the amount of non-performing loans. The adage "don't put all your eggs in one basket" serves as the foundation for these strategies of handling non-performing loans.

2.1.1 Concept of Loan

Credit is the sum of money that the creditor lends to the borrower, either with or without security. A significant item on the asset side of a commercial bank's balance sheet is credit and advances. One of the main sources of revenue for banks is interest on credits and advances. The bank creates the credit portfolio; otherwise, it would negatively impact profits as well as debts (Nwankwo, 1991).

Credit is the financial resources that arise when a lender gives a borrower cash or other assets in exchange for a promise to repay on demand on a certain date. There are four main methods that banks provide credit (Chhabra & Taneja, 1991).

- Overdraft
- Cash credit
- Direct credit
- Discounting of bills

For bank's overall corporate strategy and strategic plan at least three critical components are needed. They are (John, 1998).

- Business plan
- Framework for risk management

- Strategies for corporate control.

These fundamental elements, which concentrate only on functioning and competing in the financial services sector, provide a strong basis for managing value and risk planning. In keeping with the current notion of the fundamental activities of banking as measuring, managing, and accepting risk, the contemporary strategic approach also incorporates a framework for risk management and strategy for filling in the component fits. The goal of the bank is to manage risk and value by minimizing or doing away with those that devalue assets. A commercial bank's primary responsibility is to gather deposits from a variety of sources and lend money to a range of industries, including commerce, manufacturing, transportation, construction, communication, and other public utilities. Every bank that engages in these operations runs a great deal of danger. The banking sector is subject to a variety of risks, but the most well-known ones are those related to non-performing loans, market risk, operational risk, and so forth. Potential financial loss that might arise from clients not adhering to the terms of a contract or loan is known as a non-performing debt. However, market risk also encompasses trading risk and balance sheet risk, such as possible risks to earnings and capital due to changes in interest rates, liquidity circumstances, the effect of variations in foreign exchange rates, etc. In the meanwhile, system failure, fraud, forgeries, natural catastrophes, mistakes in transaction processing and settlement, asset protecting, and system failure all contribute to operational risk (John, 1998).

Non-performing debt: Banks expect that their borrowers will make their regular payments when they hand out money. However, it isn't always the case. Non-performing loans are a concern for many banks because borrowers sometimes run out of money or find themselves in precarious circumstances where they are unable to repay their obligation. A non-performing loan is one that is in default or on the verge of default and constitutes bank assets. Actually, a bank's primary assets are the loans and advances it makes; the main issue facing banks is when these assets or loans go into default. This normally occurs when the loan's principle and interest payments are more than ninety days past due. Since there is little probability that non-performing loans would be repaid, they are often regarded as bad debt. A bank's stock price is likely to be impacted more by the amount of non-performing loans or loans it has on its books (Nwankwo, 1991).

Before the term "non-performing loans" was coined, people in the banking industry would often refer to loan accounts where repayments were late or poor quality loans. Following the adoption of the Narasimhan Committee's recommendations, the NPL concept was adopted. The outstanding loan accounts adhered to the following idea (Sankar, 2016);

Under the present NPL concept, there are four categories of accounts

Performing assets, also known as standard assets, are the accounts for which the installments are paid on time and without any delays.

Substandard assets are loan accounts for which the principle and interest have not been paid for more than ninety days.

Doubtful assets are loans that have been classified as substandard assets and for which the realizable value of the securities exceeds the account's debt. No repayments have been made for more than a year.

Loss assets are defined as: the realizable value of the securities in the loan accounts is less than the obligation in the account, or there are no securities available for the loan accounts; in the case of loans previously classified as substandard assets, no repayments for more than twelve months (Sankar, 2016).

2.1.2 Non-Performing Loans

A non-performing loan is any asset or borrower account that a bank or other financial institution has determined to be substandard, questionable, or a loss asset in compliance with the RBI's standards or instructions regarding asset categorization. If a payment is not made within 30 days of the due date, it is considered "past due" under any credit arrangement. With effect from March 31, 2017, it was decided to do away with the idea of "past due" owing to advancements in the payment and settlement systems, the state of the recovery, technological advancements in the banking system, etc. Thus, as of that date, an example of a non-performing loan (NPL) would be:

- For a Term Loan, interest and/or principal payments are past due for a duration of greater than 180 days.

- When it comes to an overdraft cash credit (OD/CC), the account is considered "out of order" for a duration exceeding 180 days.
- When a bill is acquired and discounted, it stays past due for a duration more than 180 days.
- If an advance is given for agricultural purposes, interest and/or principal installments are late for two harvest seasons, but not for more than two and a half years. For other accounts, any outstanding balances are past due for longer than 180 days.

In order to enhance openness and progress towards global best practices, the decision has been made to implement the '90 days overdue' standard for NPL detection starting from March 31, 2017. As a result, starting on March 31, 2017, a loan or advance will be considered non-performing if:

- If principle payments and/or interest on a term loan are not made for a period of more than 90 days,
- When an account for an overdraft cash credit (OD/CC) is "out of order" for more than ninety days,
- When a bill is acquired and reduced, it stays past due for longer than ninety days.
- For two harvest seasons, interest and/or principal installments remain past due; however, in the event of an advance provided for agricultural purposes, the overdue period cannot exceed two and a half years. For other accounts, any outstanding balances exceed ninety days.

Credit evaluation is a crucial factor that banks consider when granting loans. Bad credit evaluation refers to lending money to a borrower without considering their true ability to repay the principle and interest within the agreed-upon time frame and without acknowledging the risk involved in the loan, which leads to the proliferation of bad loans in banks.

(a) Poor credit surveillance

It is also one of the main causes of non-performing loans (NPLs) because of banks' negligence in their ongoing observation and monitoring of borrowers' activities and

fund uses, including whether or not they have used the funds in accordance with the terms of the loan contract and whether or not the borrower's project or business is operating profitably. In order to provide the borrower with a valuable analysis, the bank should do routine monitoring and require the disclosure of the business's or project's financial report.

(c) Excessive credit

Loan default is said to be caused by banks' high risk appetite, impaired integrity while granting loans, and fast credit expansion. It is believed that excessive funding is the primary cause of NPL. Additionally, there is evidence that a rapidly expanding credit portfolio is an indication of declining loan quality and is a gauge of excessive risk taking in lending services.

(d) Excessive interest rates

Another factor contributing to non-performing loans (NPLs) is high loan interest rates, which make it difficult for borrowers with low incomes to pay the higher interest rate. A bank with a high spread rate may also have a high percentage of non-performing loans.

(f) Badly negotiated conditions

Weak terms and conditions when a bank makes a loan in terms of collateral requirements, loan due dates, and restrictive and protective covenants will cause the borrower to operate their project haphazardly, which could result in bankruptcy and insolvency and cause them to default on their bank loans.

ii) Causes unique to each customer

(a) Insufficient expertise and relevant experience

Another factor contributing to non-performing loans (NPLs) might be customers' ignorance of the terms and conditions offered by the bank. They could not know anything about the project or company they are proposing, which might lead to the downfall of their enterprise and eventual loan default.

(a) Intentional failure to comply

One of the main causes of the rise in non-performing loans (NPL) is that some borrowers refuse to repay their loans voluntarily and without cause.

(b) Redirecting loans

Clients or borrowers who made use of the loan in a different manner than specified in the loan agreement. The borrower may not be able to repay the loan's principle and interest amount on time if the funds were used to purchase a real estate and extra return.

(d) Issues with project management and the promoter's lack of commitment
Occasionally, the project management team may be the source of the issue due to their carelessness in maintaining the project's smooth operation, which might lead to company failure and, ultimately, payment default.

NPL's effects

The following conclusions concerning certain implications of non-performing loans in Bangladesh's banking system were drawn by Masum (2014): He had given a detailed explanation of the cyclical nature of non-performing loans (NPLs), how they arise, and how they affect banks' profitability.

(i) The NPL's cyclical nature, which begins with a weak economic situation

(a) Failing financial institutions attempt to alter the asset portfolio's composition or lower the amount of risky assets by attracting a large number of corporate customers during times of crisis in an effort to regain the trust of creditors and depositors.

(a) As a result of the substantial credit and financing, the NPL rises and money stops flowing. A rise in NPL slows down cash flow, which has an adverse effect on the company's operations.

(c) If interest is not paid on schedule, the bank will stop receiving interest profits. However, the management and funding costs continue, which will lower the banks' profits.

(d) The current loan price must be raised in order to cover the cost of funds as well as the management costs. An abrupt rise in interest rates makes it difficult for borrowers to repay banks for new borrowers, which would further fuel the growth of non-performing loans.

Additionally, he had added more direct consequences of non-performing loans (NPLs) to the bank's operations, which not only hurt the bank's performance but also its reputation and potential for future profits.

(ii) Additional NPL impacts

(a) Efficiency Issue

NPLs may cause the banking industry to have efficiency issues. Numerous economists have discovered that failed bankers are situated far from the most efficient frontier since banks do not lend less than what is requested in order to maximize their portfolio selections. Increasing NPL makes loans harder to perform. An asymmetric information issue prior to transactions is known as adverse selection.

(a) Circumstances of credit crisis

Banks that restrict loan disbursements and new credit commitments while increasing risks are said to be experiencing a credit crunch. Loans are seen as assets by banks. They anticipate a return on their investment, but if the loan turns into a non-performing loan (NPL), the bank may not have the funds to fulfill their obligation to lend money or may have to charge the higher interest rate. In order to force consumers to make further payments, the loan defaults once again.

(c) NPL influences LC's opening

Foreign buyers usually choose exporters whose banks are in good health. The bank's worsening circumstances have an impact on LC openings. Low bank earnings are a result of low LC rates.

Recommendations for NPL recovery

In their working paper on "Non-performing loans-causes, consequences and some learning in," Islam, Shil, and Mannan (2005) outlined and suggested a few strategies to keep NPL in the banks based on their research. The following highlights the points:

(a) The state of law and order

According to the author's findings, loans often fail because defaulters may take use of legal loopholes to get extraordinary benefits. There should be no extortion in the climate, as this will assist to build excess and increase recovery. In a similar vein, a stable corporate environment depends on political stability.

(c) Evaluation of risks

Although risk seems to be uncontrolled, managing investments requires risk. However, this delicate and important component is often disregarded. Some financial organizations don't even have enough rules for determining risk.

(c) Organization for Rehabilitation

To ensure effective and prompt loan recovery and to diversify the bank's workload and relieve it of overabundance of responsibility, banks and financial institutions must form recovery agencies. With the use of contemporary instruments and methods, such an agency is able to focus entirely on the goals and actions of the borrower. The performance of other bank divisions may benefit from this kind of decentralization of labor.

(d) Incentives

Encouragement and motivation may act as a miracle cure for debt recovery. A national award should be given to the top loan performance. For his honesty, he can also get some financial rewards. Maintaining continuous communication between borrowers and bankers greatly enhances the former's amicable connection.

(f) Managing Collateral

It is important to keep enough collateral for all loan types. Collateral should be properly handled, with frequent checks on its value, ownership, physical state, and other legal statuses, among other things. Merely holding collateral is insufficient. There should always be enough value in the collateral to repay the loan. Early NPL management identified a few lists that were in line with preventative actions and have been discussed as follows:

(1) Early Problem Identification: Whenever banks attempt to engage in a revival process, it is usually too late to correct the issue in terms of project rehabilitation and bank debt collection.

(2) Identifying Borrowers with true purpose: One of the challenges facing bankers is differentiating between those who are serious and have no dedication or interest in reviving and those who have true purpose. In this case, frontline branch officials play a critical role as they are the ones with insightful opinions about the promoter's genuineness and capacity for success. Banks should determine as soon as feasible

whether it would be beneficial to provide further financing based on this objective evaluation.

(3) Response time and sufficiency: The more damage is done to the asset and account, the longer the response time. In every action involving restructuring or rehabilitation, time is an essential component. The reaction, which is determined by a techno-economic analysis and the promoter's commitment, must be sufficient in terms of the amount of extra funds and concessions, among other things. The aid package may be flexible within the restructuring process, and the bank may consider an exit strategy.

(4) Pay Attention to Cash Flows: When it comes to financing, banks may not be led only by traditional fund flow research, which might provide an inaccurate impression. Instead of relying just on funds flow analysis, appraisal for new credit criteria may also use cash flow analysis.

(5) Multiple Financing: Considering the likelihood of success or failure, a pragmatic and coordinated approach by all lending banks / FIs as well as the sharing of all pertinent borrower information would go a long way toward the overall success of the rehabilitation exercise. This is especially true during the exercise for the assessment of viability and restructuring.

2.1.2 Non-performing Loan

Variations in interest rates, currency rates, and the prices of commodities and real estate are nothing new in the ever-changing financial landscape. The corporate strategy and performance of the bank are unstable due to these swings in economic and financial factors. Therefore, a bank's risk management structure is essential. A bank may lower risk and the possibility of a non-performing loan with an effective loan. Banks may identify their most lucrative business after they have a clear understanding of their costs and risks. As a result, the bank has to have a clear risk plan that includes new credit procedures and systems, organizational adjustments, and risk measuring methods. The following five criteria of creditworthiness should be taken into account when discussing non-performing loans (Smith, 1976):

Personality

The borrower's excellent intentions and character are crucial, and they should be taken into careful consideration. The client's workplace, references, neighbors, and other

areas he is connected to may all provide insight into his character. This is a laborious task, but it must be completed for a safe investment.

Attached

A sufficient amount of collateral is required to guarantee loan recovery. In the event of default for whatever reason, the retained collateral must be valuable enough to repay the amount borrowed plus interest. It is advised that only 50% of the collateral's value be loaned; however, this proportion may be flexible in light of the borrower's creditworthiness and other circumstances.

Capital

Capital acts as a safety net to absorb asset and operational losses that might otherwise hinder loan repayment. In actuality, this serves as insurance against the loans that the borrowers are given.

Ability

It may be defined as the capacity of the client to pay. It is determined by the candidates' prior performance history. Whether the borrower is dependent on a salary or wages or has other sources of income, it is important to examine their gross income, costs, and net income. It should be taken into consideration if the borrower has other sources of income beyond their regular income that may be used to pay back the agreed-upon payments.

Circumstances

Unfavorable economic circumstances may affect borrowers for reasons beyond of their control. Repayment is contingent on a number of circumstances, including those over which the borrower has little to no control, in addition to character, ability, and collateral. For instance, severe economic downturns or natural disasters. Assuming the same circumstances apply, risk is determined by the quality found in each of the five "Cs" and how these five Cs are combined. The following recommendations are made.

2.1.3 An Overview on Non-performing loan

The chance that a borrower won't fulfill its responsibilities in line with the established terms and conditions is known as a non-performing loan. Non-performing loans include exposures to off-balance sheet and interbank transactions as well as lenders'

ongoing operations. By keeping the CRE within allowable bounds, CRM seeks to optimize the bank risk adjusted rate of return. Loans are the most significant and unaware source of credit for the majority of banks. Other non-performing loan sources do, however, exist across the banking and trading books, as well as in both on and off balance sheet operations. In addition to loans, banks are increasingly dealing with counterpart risk and non-performing loans in other financial instruments such as acceptance, interbank transactions, trade finance, foreign currency transactions, guarantees, and transaction settlement. Credit is thought to be the asset that generates the highest revenue, particularly for commercial banks. Due to its significant transaction volume, credit is thought of as the commercial bank's beating heart. It includes the majority of the investment. It is the primary element that generates profit and establishes profitability. The economy as a whole is impacted (Nwankwo, 1991).

In a similar vein, it also supplies industry and commerce with currency. They will pay taxes to the government, which will support growth in the overall economy. It serves as a safeguard against depositors as well. From the outset, it is assumed that Credit is the derivative of wealth maximization. Notwithstanding the fact that other variables may also impact profitability and wealth maximization, non-performing loans are thought to be the most significant cause. Since it is the foundation of commercial banking, it is the most difficult job. Therefore, careful consideration should be given to good credit management. The mechanism that aids in efficiently completing the work is called management. In other words, non-performing loans relate to the management of credit risk resulting from loans, corporate bodies, and credit derivatives. Non-performing loans are also the system that aids in the efficient administration of credit. In commercial banks, credit exposures serve as the primary investment vehicles, with the profits from these investments expected to be the primary source of revenue.

2.1.4 Credit/Loan Framework

Interest rate, currency rate, commodity, and real estate price fluctuations are nothing new. However, the corporate strategy and performance of the banks and their client clients were unstable due to fluctuations in economic and financial factors. As a result, it is essential that those banks establish a structure for marketing their customers their services. Banks can manage risk on their balance sheet by modifying the composition of their portfolios, or they can manage risk off their balance sheet by

utilizing a variety of weaponry derived from financial engineering technology. These off-balance sheet weaponry are referred to as derivatives contracts of activities, or simply "derivatives" (John, 1998). The three pillars that support the non-performing loan structure are as follows:

- Effective investment choices provide value for the company.
- This entails prudent locus and investment decisions for conventional banks, as well as prudent investment decisions for their non-traditional businesses, such as investment banking, mutual funds, and insurance derivatives.
- The secret to making wise investments is to generate enough cash flows internally.
- Businesses that don't produce cash flow internally often make larger investment cuts than their rivals. In the banking industry, preserving a firm's capital adequacy depends critically on producing adequate cash flow internally. In turn, having enough cash is necessary for growth and wise investment decisions. In terms of expenses and management, banks with insufficient capital are vulnerable to increased deposit insurance premiums, heightened regulatory oversight, and potential acquisition by third parties.
- Sensible examination of a key market indicator.
- Major market indicators should be carefully examined by banks since unfavorable changes in external variables, such interest rates and commodity prices, may impair a company's capacity to invest and produce cash flow problems.

2.1.5 Factor Affecting Credit/Lending Policy

The basis for deciding whether or not to grant credit and loans of this kind is provided by a company's credit policy. Credit criteria and credit analysis are the two main facets of a bank's credit policy choices. A instrument for managing and assessing non-performing loans is the credit policy or non-performing loan strategy. In general, the following elements should be taken into account while creating a non-performing loan. It is also known as the credit policy considerations. Obtaining efficient credit worthiness is beneficial (Shekhar, 1997).

Industry environment A firm's position within the industry, the attractiveness of the industry structure, any structural weaknesses of a disadvantageous company, theaters first route out, and security value are all determined by the industry environment.

Financial Situation

As a preliminary step, it assesses the borrower's ability to repay using cash flow. It is also evaluated how strong the backup plan, or collateral liquidation, is. Repayment capability is further threatened by the potential to rely on the revenue of a sister business in the event that the firm has financial difficulties.

Technical strength In terms of manpower, the viability of the technology used, the availability of after-sales services, and the cost of maintenance and replacement need to be examined, it defines the strength and quality of the technical support necessary for the company's sustainable operation.

Management quality It establishes the morality, skill, and kind of alliances that the management team of the borrower has. It is necessary to assess substitutes for weakness.

Realization of security

It establishes the control over the numerous assets that the bank received in order to guarantee the loan, given the document's validity and the current value of the properties that the bank has mortgaged. The bank's backup exit strategy is at risk due to security lapses.

2.2 Empirical Review

Reshmi (2023) looked at how nonperforming loans affected the commercial banking industry's profitability in Nepal. For analysis, an imbalanced data set that was gathered from secondary sources and included 13 commercial banks in Nepal during 2069–2070 B.S. and 2078–2079 B.S. has been used. After evaluating the suitability of the Pooled OLS, random effect, and fixed effect regression models using the Hausman and Breusch-Pagan tests, conclusions were reached. The study's conclusions show that the nonperforming loan ratio negatively and statistically significantly affects return on equity as well as return on asset. Bank profitability (ROA and ROE) is negatively impacted by loan loss provisions, although negligibly. While interest income has a negligible but positive influence on ROE, it has a favorable and

considerable impact on ROA. The total loan to deposit ratio has a negative influence on ROE but a considerable favorable impact on ROA. Both ROA and ROE are negatively and statistically significantly impacted by bank size. CAR has a little effect on ROA but a large effect on ROE.

Uddin (2022) examined how non-performing affected profitability while controlling for operational efficiency loans. Bangladesh's state-owned commercial banks are the subject of the research. The sample banks are selected using the purposive sampling approach. The annual reports of selected banks have been a source of secondary data. Path analysis, multiple regression analysis, and descriptive data analysis are the methods employed. The mediation effect has been investigated using the PROCESS Macro Mediation Model 4. According to the research, operational efficiency has a small and negative influence on profitability, whereas non-performing loans have a positive but negligible effect on operating efficiency. The statistical analysis examining the direct impact of non-performing loans on profitability demonstrates that, even in the presence of operational efficiency, non-performing loans have a substantial and adverse influence on profitability. Operating efficiency has no mediating impact on the connection between non-performing loans and the profitability of state-owned commercial banks, according to the PROCESS Macro mediation effect results. In order to increase banks' profitability, the research advises bank management to use efficient strategies to reduce the proportion of non-performing loans and the operating expenditure to operating revenue ratio.

A research on non-performing loans and profitability: a case study of the Indian banking industry was carried out by Gaur and Mohapatra (2021). They look at the link between non-performing loans (NPLs) and profitability in the Indian banking industry and assess how much of an effect NPLs have on bank profitability. For the necessary study, a secondary data collection including 37 scheduled commercial banks in India over a 14-year period (2005–2018) has been employed. using panel regression models with fixed and random effects. They discovered that there is a strong negative association between NPL and return on equity (ROE) and return on assets (ROA), two profitability metrics. As a consequence of NPL's highest negative regression coefficient—a statistically significant finding—the study's findings have identified NPL as the primary factor undermining the banking industry's profitability.

It suggests that deteriorating credit quality impairs bank operations and causes them to fail.

The impact of non-performing loans on the financial stability of deposit-taking SACCOs in Kenya was examined by Jagongo (2021). The research used a desktop approach. Secondary data, or data that may be gathered without fieldwork, is referred to as desk research. Since desk research mostly entails gathering data from already-existing resources—executives' time, phone bills, and directories—it is often seen as a less expensive method than field research. As a result, the research used data, reports, and studies that have previously been published. It was simple to get this secondary data by using the library and internet journals. The impact of non-performing loans on SACCOs' capacity to maintain their financial stability has not been sufficiently covered in any of the examined research. There is a void left here that must be filled. Because of their distinctive way of doing business, SACCOs are very important to Kenya's financial intermediation sector. Therefore, closing this gap will be the main goal of this research. The results of this research will help Sacco's SASRA authorities create strict regulations to control the growing number of non-performing loan cases. SACCOs in Nairobi County will find the study's conclusions helpful in assessing the efficacy of their NPL management strategy. They will be able to determine any gaps in their NPL management and make the necessary adjustments as a result.

The influence of non-performing loans on profitability was studied by Jha and Grover (2021) using a sample of Indian commercial and public sector banks. Their objective was to investigate the impact of non-performing loans (NPLs) on the financial performance of Indian banks. For the study, two top banks—one from the public and one from the private sector—have been chosen. The secondary information on net profit and NPL provisions was gathered from the banks' websites and their standalone financial statements. Eight years of data collection—from 2012 to 2019—have been completed. Tabular and graphical representations of the data have been used in the analysis process. They discovered that the banks' net earnings are impacted by their NPL provisions. The banks' capacity to make profits is greatly impacted by their provisions for non-performing loans. Provisions for non-performing loans (NPLs) have a greater influence on net profit in the case of SBI due to their enormous number, which acts as a barrier to generating higher profits. In comparison to SBI,

banks have more diverse revenue streams, and the HDFC Bank is less impacted. When comparing public sector banks to private sector banks, it is evident from this comparison that the former have far more non-performing loans (NPLs). Government banks have such a large amount of non-performing loans (NPL) that, when their provisioning is subtracted from the net loss, the loss is converted to profit.

Singh and Al (2021) discovered the impact of Nepalese conventional banks' non-performing loans (NPL). The study's population consists of Nepal's largest commercial banks, and the data used in it came from 2015 to 2019. The annual reports of each bank, as well as GDP and inflation figures retrieved from the World Bank database, provided the secondary data utilized in this study. Multiple regression analysis is the strategy employed in this research for data analysis. NPL was the dependent variable in the research, while the independent/explanatory factors were bank size, GDP growth, inflation, return on asset (ROE), and capital adequacy ratio (CAR). The study's findings indicate that although CAR has no discernible impact on bank non-performing loans (NPL), bank size, GDP, inflation, and ROE all significantly affect NPL. Put otherwise, this research demonstrates a positive and noteworthy impact of GDP on NPL, while the majority of studies indicate a negative impact. It shows that even if there were no appreciable changes in income growth, there is a large rise in the expansion of Nepalese banks when GDP growth increases. As a result, the NPL of commercial banks is positively and significantly impacted by GDP growth. Thus, while making choices about non-performing loans (NPLs), lenders and policymakers must carefully evaluate GDP growth.

According to Pokharel and Pokharel (2020), non-performing loans (NPLs) are the greatest indicator of a country's financial health. The quantity of non-performing loans has an impact on the nation's economy, the banking sector, and the whole financial system. The need to assess how non-performing loans affect Nepalese commercial banks' profitability is the driving force for this inquiry. The study's time frame is July 16, 2013, to July 16, 2018. Additionally, an analysis is conducted to look at the effects of different bank groupings. Specifically, government-owned banks and local banks operating in the financial sector in this way. As a sample, the investigation's final target has been five of the twenty-four separate private division banks and one of the

three government-claimed banks. The inquiry is reliant on optional data obtained on the website of Nepal Rastra Bank as well as the annual report of banks of concern.

Abedin (2020) looked at Bangladesh's present situation while doing research on non-performing loans and their effects on the banking industry. The purpose of this research was to ascertain the present state of non-performing loans (NPLs) in Bangladeshi banks. The research makes use of publicly available data that was gathered from the Bangladesh Bank's annual reports, the websites of Bangladesh's scheduled banks, and World Bank observations made between 2008 and 2019. He discovered that NPLs have been Bangladesh's banks' biggest issues for the last 20 years. While the global average for NPLs is 2% or less, Bangladesh has a much more complicated situation. The whole banking sector is uneasy as Bangladesh's NPL percentages are four to five times higher than the norm. According to the results of the present analysis, the NPL ratio is showing a consistent upward trend over time.

According to Bhattarai's (2020) analysis, a significant issue facing the banking sector is non-performing loans (NPLs). It has a significant impact on profit margins and bank success or failure. This research looks at how non-performing loans affect the profitability of commercial banks in Nepal. Panel data from twelve commercial banks was gathered during a five-year period, from 2013–2014 to 2017–2018, totaling sixty observations. The data has been analyzed using the multiple regression model. To assess profitability, the fixed effect model, random effect model, and pooled ordinary least square model have all been used. Return on equity (ROA), a measure of profitability, was considered a dependent variable, whereas the following factors were considered independent: inflation (INF), non-performing loans (NPL), capital adequacy ratio (CAR), liquidity (LIQ), and bank size (SIZE). Three distinct models' results showed that ROA is significantly and adversely correlated with NPL, CAR, and LIQ. Likewise, there is a strong positive correlation between SIZE and ROE. With regard to ROE, the INF has a favorable but negligible effect. The investigation came to the conclusion that the variables NPL, CAR, LIQ, and SIZE had a significant impact on profitability. Profitability is not much impacted by the INF. Nonetheless, nonperforming loans have a significant negative impact on profitability. Sincere payments for over ninety days have been received by the bankers. It also rationally affects the country's economy.

A research of non-performing loans from Nepalese commercial banks was carried out by Khadka (2020). In order to determine whether or not Nepalese commercial banks are adhering to NRB guidelines on non-performing loans, this research looked at the amount of non-performing loans (NPLs) in total assets, total deposits, and lending of commercial banks. The research design used is descriptive in nature. The secondary data used in this research was gathered from five sample banks via annual reports, NRB directives, and banking magazines. Data analysis methods included the mean, standard deviation, correlation, and regression analysis. It seemed that Nepal Bangladesh Banks limited had a higher level of non-performing loan (NPL) than any of the other banks included in the analysis. Similarly, Bank of Kathmandu and Nepal SBI Banks are ranked second and third, respectively. Given that Nabil Bank Limited has been reducing its non-performing loan (NPL) each year and that Nepal Investment Bank's NPL has been reducing at a minimum relative to all other banks—and the fact that no bank has been adhering to the NRB's directives regarding the loan loss provision—the bank's position appears to be fairly satisfactory.

Ramaswamy (2020) studied how npl affected bank profitability. The purpose of this research was to ascertain if the financial head (total assets, total advances, and total deposits) had a substantial influence on non-performing loans (NPLs) and how NPLs affected bank profitability. The study used a descriptive research design. We used convenience sampling. Secondary data gathered between 2014–2015 and 2018–2019 from the RBI website and bank annual reports. Regression analysis and correlation will be used to determine the effect and connection. In comparison to private banks, they discovered that NPL was greater in public banks. In order to recover from non-performing loans (NPLs), the banks must now take the initiative and be prepared to implement drastic measures. The study also shown that NPL by itself is insufficient as a metric for assessing a bank's soundness. The study found a negative correlation between non-performing loans (NPLs) and net profits in all save HDFC Bank. Additionally, NPLs had a significant influence on net profits, but only in SBI, Axis, and HDFC Bank cases. The findings of multiple regression indicate that, other from SBI, the financial heads as standalone variables have no discernible effect on bank non-performing loans (NPLs).

A 2019 research by Jaswal, Patil, and Giri examined the effect of non-performing loans (NPLs) on bank profitability. This research looked at how public sector banks handle non-performing loans as a result of lending to priority sectors, how it affects the bank's overall profitability, and where the bank's operational structure is lacking in terms of managing loans to key sectors. The study's secondary data came from websites, journals, publications, and reports detailing India's banking industry's advancement. The study's focus is restricted to the examination of non-performing loans from public sector banks between 2007 and 2016. In compared to public sector banks, they discovered that private sector banks are much more adept at controlling their non-performing loans (NPLs) and recovering loans that they have made. Compared to public sector banks, the connection between net profit and non-performing loans is better for private sector banks. There is a positive connection between the bank's profit and non-performing loans (NPLs) and a growth in net profit for private sector banks, which is superior than the correlation and regression analysis of public sector banks. The data's regression analysis yields encouraging results, indicating that an increase in non-performing loans (NPLs) is accompanied by an increase in other factors.

Dhital (2018) investigated how Nepalese commercial banks' productivity and profitability were affected by non-performing loans. Productivity and return on assets are the dependent variables. The loan loss provision, bank size, capital adequacy ratio, non-performing loans to total loans, and total loans to total assets are the independent variables. The secondary data from 20 commercial banks with 100 observations from 2012–13 to 2016–17 served as the basis for this investigation. The annual reports of the chosen commercial banks are where the data are gathered. The relevance and drivers of non-performing loans on the profitability and productivity of Nepalese commercial banks are tested using estimated regression models. The outcome demonstrates that productivity and return on assets are positively correlated with bank size and capital adequacy ratio. It demonstrates that higher bank asset sizes are associated with higher productivity and return on assets. It also demonstrates how rising capital adequacy ratios increase productivity and return on assets. On the other hand, productivity and return on assets are negatively correlated with the loan to total assets ratio.

The amount of non-performing loans (NPL) in the Nepalese banking sector was found to be very concerning by Gnawali (2018). It is well known that banks and other financial institutions in Nepal are dealing with an increase in non-performing loans as well as the issue of becoming harder and harder to handle on a daily basis. This research looks at how non-performing loans affect Nepalese commercial banks' bottom lines. Asset return is considered a dependent variable. The following are the independent variables that have been chosen: non-performing loans, loan loss provisions, capital adequacy ratios, ratios of loan loss provisions to total loans, ratios of total loans to total deposits, and firm size. The secondary data used in this research were gathered from a variety of Banking and Financial Statistics publications, the Bank Supervision Report issued by Nepal Rastra Bank, and the annual reports of the banks. With 24 and 80 observations per bank, respectively, the research spans the years 2010 to 2017 for three government banks and ten non-government banks. To determine the significance and effect of non-performing loans on the profitability of Nepalese commercial banks, regression models were developed.

Paudyal (2018) carried a research on non-performing loans from Nepal's commercial banks. The purpose of this research was to determine the percentage of non-performing loans in the chosen commercial banks, assess the effect of non-performing loans (NPLs) on the study banks' profitability, and examine the effects of NPLs on their return on assets (ROA) and return on equity (ROE). The research design used is descriptive in nature. Nabil Bank and Standard Chartered Bank were used as the sample banks. The secondary data used in this research came from the yearly reports of a sample bank. To examine the data, regression models and correlations have been used. He discovered that Nabil Banks has significantly reduced the amount of non-performing loans, which is the outcome of the bank's efficient credit management and attempts to collect bad debts by setting up a recovery cell. There is a strong negative association between Nabil Bank's ROE and NPL. In order to improve ROE and ROA, as well as profitability and loan loss provision for questionable loans, the bank should lower its level of non-performing loans (NPLs). This is especially true for SCBNL and bank Nabil.

Baral (2017) carried a research on non-performing loans from commercial banks in Nepal. This research sought to identify issues with non-performing loans and their

impact on Nepalese commercial banks' ROA and ROE. It also sought to determine whether or not these banks were adhering to NRB guidelines on loan loss provisions for non-performing loans. The secondary data from four commercial banks covering the years 2010–11–2016–17 served as the foundation for this investigation. To determine the impact of non-performing loans on Nepalese commercial banks' profitability, regression models are estimated. She discovered that non-performing loans had some bearing on the bank's return on equity (ROE) and return on assets (ROA). For the bank's ROA and ROE to rise, the NPL ratio should be lowered. One of the main reasons commercial banks have a high percentage of non-performing loans (NPLs) is management inefficiencies, even if banks have been complying with NRB guidelines on loan loss provision.

Bhattarai (2016) looked at how credit risk affected Nepalese commercial banks' performance. For this study, the descriptive and causal comparative research designs have been used. Regression analysis has been performed on the pooled data of ten commercial banks from 2010 to 2015. The findings of the regression analysis showed that although "cost per loan assets" has a favorable impact on bank performance, the non-performing loan ratio has a negative impact. The capital adequacy ratio and bank performance are negatively correlated, albeit not statistically significantly. The study's findings indicate a strong correlation between credit risk indicators and bank performance. According to this study, Nepal's commercial banks should improve their ability to analyze credit and administer loans, and the regulatory body should pay closer attention to the supervision of the banks, ensuring that pertinent laws and guidelines are followed regarding banking operations.

According to Radhakrishnan's (2016) analysis of the management of non-performing loans (NPLs), banks and financial institutions should identify problems early. This is because, by the time banks attempt to engage in a revival process, it is usually too late to improve the situation, both in terms of project rehabilitation and bank debt recovery. It is essential to identify weakness from the outset, that is, when the account begins exhibiting the first indications of weakness, even if it may not have become non-performing loan (NPL). Based on a techno-economic viability analysis, the possibility for resurrection may be evaluated. Where banks are persuaded of a

turnaround within a certain period after an unbiased evaluation of the viability and promoter's desire (and stake), restructuring should be tried.

Bhattarai (2015) investigated the effects of bank-specific factors (size, loan change, real lending rate of interest, and loan to total asset share) and macroeconomic factors (GDP, inflation, and real effective exchange rate) on the non-performing loans of Nepal's commercial banks. The majority of secondary sources were used in the research. 26 commercial banks' worth of data were gathered between 2002 and 2012, totaling 227 observations. The real effective exchange rate and other macroeconomic factors have a major detrimental influence on non-performing loans. This research finds that the GDP growth rate has little effect. The effect of a one-year-lagged inflation rate on non-performing loans is notably positive (Model II). The percentage of non-performing loans is greater in banks with comparatively higher real interest rates. In a similar vein, the prior year's loan rate adjustment had a very detrimental effect on non-performing loans. Since loans from the prior year increased more, the amount of non-performing loans will drop dramatically.

Pradhan (2014) examined Commercial Bank non-performing loans with references to NBBL, SCBNL, RBB, Everest Bank, and NB bank. His study's primary goals are to ascertain the percentage and amount of non-performing loans (NPLs) in total assets, total deposits, and total lending in the chosen commercial banks, as well as the relationship between loan loss provisions in commercial banks and the effects of NPLs on commercial banks' performance. He has come to the conclusion that the main causes of non-performing loans (NPLs) include poor credit policies, political pressure to lend, a lack of oversight and monitoring, a downturn in the economy, and an overvaluation of collateral. Both public sector banks (RBB and NBL) and private sector banks (such as NBBL, EBL, and SCBNL) have been attempting in recent years to hold onto their loans and advances in order to avoid becoming non-performing loans. They should attempt to recoup their loan and interest amount on time and also create an appropriate loan loss strategy in order to overcome the NPL from public banks. The author has arrived at the conclusion that a large percentage of non-performing loans (NPLs) not only negatively impacts the banks' profitability but also the overall financial and operational well-being of the organization. Failure to address NPLs promptly may lead to bank closures in the future.

Singh (2013) looked at the effect level using multiple regression models, analyzing each bank's capital adequacy ratio (CAR), non-performing loan (NPL), and return on asset (ROA) over a period of 11 years. For the aim of regression analysis, the researcher gathered data from RBI annual reports from 2003 to 2013. The study's primary conclusion and recommendation was that the credit risk stemmed from the potential for a counterparty borrower to default on its debt within the predetermined time frame. Hence, credit risk results from a bank's lending to or transactions with corporations, which is the oldest and largest risk that the bank acquired due to its basic existence as a company.

Chhetri (2012) made an effort to define the word non-performing loan (NPL), discuss possible origins of NPLs, and discuss the implications of NPLs in the banking sector in South East Asia. He has also suggested some ways to keep NPL under check. Financial institution loans and advances are intended to be repaid over a predetermined period of time, as agreed upon by the parties at the time of loan settlement, either in whole or in part with interest. The debt becomes non-performing as the due date has passed. For the loan to continue being performed, actual transactions made by the debtor must keep the lending institution's book of accounts properly functioning.

A comparison between the standardized method without an assigned external rating and the standardized approach with one has shown significantly inferior capital adequacy, according to Cipovová and Belás (2012). The rationale is that banks may employ the degrees of external agencies with regulator consent, and then risk weights may be imposed. The Foundation Internal Ratings Based Approach (FIRB), out of all the approaches tested, is the only one that offers the ability to define the parameters according to the bank's own assessments and has computed the lowest amounts of capital required. Our investigation led us to the conclusion that, in the case when a bank's portfolio included exposures with a default chance of little more than 0.88 percent, the amount of capital saved between FIRB and the most popular approach in the Czech Republic ranged roughly from 90% to 10%. These findings were quite unexpected. According to the research, sophisticated techniques for calculating credit risk are more adaptable when it comes to class changes in a portfolio's company holdings. The most popular technique in the Czech Republic is the Standardized

approach, which does not have an assigned external rating. However, it does have a capital minimum of 8 million.

Reshmi (2023) looked at how nonperforming loans affected the commercial banking industry's profitability in Nepal. For analysis, an imbalanced data set that was gathered from secondary sources and included 13 commercial banks in Nepal during 2069–2070 B.S. and 2078–2079 B.S. has been used. After evaluating the suitability of the Pooled OLS, random effect, and fixed effect regression models using the Hausman and Breusch-Pagan tests, conclusions were reached. The study's conclusions show that the nonperforming loan ratio negatively and statistically significantly affects return on equity as well as return on asset. Bank profitability (ROA and ROE) is negatively impacted by loan loss provisions, although negligibly. While interest income has a negligible but positive influence on ROE, it has a favorable and considerable impact on ROA. The total loan to deposit ratio has a negative influence on ROE but a considerable favorable impact on ROA. Both ROA and ROE are negatively and statistically significantly impacted by bank size. CAR has a little effect on ROA but a large effect on ROE.

Uddin (2022) examined how non-performing affected profitability while controlling for operational efficiency loans. Bangladesh's state-owned commercial banks are the subject of the research. The sample banks are selected using the purposive sampling approach. The annual reports of selected banks have been a source of secondary data. Path analysis, multiple regression analysis, and descriptive data analysis are the methods employed. The mediation effect has been investigated using the PROCESS Macro Mediation Model 4. According to the research, operational efficiency has a small and negative influence on profitability, whereas non-performing loans have a positive but negligible effect on operating efficiency. The statistical analysis examining the direct impact of non-performing loans on profitability demonstrates that, even in the presence of operational efficiency, non-performing loans have a substantial and adverse influence on profitability. Operating efficiency has no mediating impact on the connection between non-performing loans and the profitability of state-owned commercial banks, according to the PROCESS Macro mediation effect results. In order to increase banks' profitability, the research advises

bank management to use efficient strategies to reduce the proportion of non-performing loans and the operating expenditure to operating revenue ratio.

Table 1

Summary of Empirical Review

| Author name (date) | Objectives | Methodology | Findings |
|-----------------------|---|--|---|
| Reshmi (2023) | To examine the impact of nonperforming loan on the profitability of Nepalese commercial banking sector. | 13 commercial banks of Nepal over the period of 2069/70 B.S to 2078/79 B.S have been employed for the purpose of analysis. Pooled OLS model, random effect model and fixed effect regression model after testing their appropriateness using Breusch-pagan test and Hausman test | According to the findings from the study it is observed that nonperforming loan ratio has negative and statistically significant impact on both return on asset and return on equity. Loan loss provision has negative but insignificant impact on banks profitability (ROA and ROE). |
| Uddin (2022) | To investigate the effect of non-performing loans on profitability with operating efficiency as an intervening variable | The technique of data analysis used is descriptive, multiple regression analysis, and path analysis. PROCESS Macro | The study finds that non-performing loan has a positive but insignificant effect on operating efficiency, on the other hand, operating efficiency |

| | | |
|---------------------------|---|--|
| | | Mediation Model 4 has a negative and has been applied to insignificant impact examine the on profitability. mediation effect. |
| Singh et al. (2021) | To find out the effect of Non-Performing Loan (NPL) of Nepalese conventional banks | Multiple regression analysis with secondary data of major commercial banks in Nepal from 2015–2019 ROA, Bank Size, GDP, and Inflation have a significant effect on NPL but CAR does not. The GDP effect on NPL is positive and significant while most studies show a negative effect. |
| Gaur and Mohapatra (2021) | To examine the NPL and profitability relationship for the Indian banking sector | Fixed effect and random effect panel regression models with secondary data of 37 scheduled commercial banks of India from 2005–2018 A highly negative correlation exists between NPL and the two profitability measures ROA and ROE. |
| Jagongo (2021) | To investigate the effect of non-performing loan on financial stability of deposit taking SACCOs in Kenya | Desk research with secondary data from published studies, reports and statistics Non-performing loans and their effect on the financial stability of SACCOs have not been adequately featured in any of the studies reviewed. |
| Jha and Grover (2021) | To examine the extent to which the | Tabular and graphical analysis Provisions for NPL do impact the net profits |

- NPLs affect the profitability of banks in India with secondary data of two leading banks (one private and one public) from 2012 to 2019 of the banks. The impact is more in case of SBI (public sector bank) than HDFC Bank (private sector bank). Public sector banks are much worse in terms of NPLs than private sector banks.
- Singh et al. (2021) To find out the effect of Non-Performing Loan (NPL) of Nepalese conventional banks Multiple regression analysis with secondary data of major commercial banks in Nepal from 2015–2019 ROE, Bank Size, GDP, and Inflation have a significant effect on NPL but CAR does not. The GDP effect on NPL is positive and significant while most studies show a negative effect. GDP growth has a positive and significant effect on the NPL of commercial banks.
- Pokharel and Pokharel (2020) To evaluate the effect of Non-performing loan on the profitability of Nepalese commercial banks Secondary data analysis with data from the Nepal Rastra Bank's website and annual reports of five private banks and one government bank from 2013 to 2018 The study did not report the specific findings or results of the data analysis.
-

| | | | |
|------------------|---|---|--|
| Abedin (2020) | To investigate the current status of NPL in the banking industry of Bangladesh | Published data from the annual reports of Bangladesh Bank, websites of the scheduled banks of Bangladesh and the World Bank from 2008 to 2019 | NPL are the burning problems for the banks in Bangladesh. The NPL percentages in Bangladesh are 4 to 5 times higher than the standard of 2% or less. The NPL ratio is increasing constantly with the advancement of time. |
| Bhattarai (2020) | To examine the effects of non-performing loan on profitability of commercial banks in Nepal | Panel data from twelve commercial banks of five years from 2013-2014 to 2017-2018. Multiple regression model with Pooled OLS, fixed effect and random effect models | NPL, CAR, LIQ have significant and negative effect on ROA. SIZE has significant and positive effect on ROE. INF has positive but insignificant effect on ROE. NPL, CAR, LIQ and SIZE have major role to determine profitability. |
| Khadka (2020) | To analyze the Non-performing loan of the commercial Banks, examining the level of NPLs in total assets, total deposits and lending of commercial banks | Non-Descriptive research design with secondary data from annual reports, NRB directives and banking magazine from 5 sample | The level of NPL of Nepal Bangladesh Banks limited is greater than all the other banks under the study. Nepal SBI Banks and Bank of Kathmandu stand at |

| | |
|-------------------------------|--|
| | and examining banks. Mean, second and third whether the Nepalese standard deviation, position respectively. commercial banks correlation and Nabil Bank Limited are following the regression analysis and Nepal Investment NRB directives Bank have been regarding Non- reducing their NPL performing loan or every year. not |
| Ramaswamy (2020) | To determine Descriptive whether there is research approach significant impact of with convenience financial head (total findings or results of assets, total advances sampling. the data analysis. and total deposits) on Secondary data NPL and to from the yearly determine the impact reports of banks on the profitability of banks due to NPL |
| Jaswal, Patil and Giri (2019) | To examine how Secondary data public sector banks from report of manage Non- progress of performing loan banking in India, because of giving websites, journals loans to the priority and articles. sector and its overall Analysis of Non- impact on the performing loan of profitability of the public sector banks bank and to identify from 2007 to 2016. the gaps in the banks Regression operating structure, analysis of the data in managing the relationship with net loans given to the profit and NPLs primary sector |

| | | | |
|----------------|---|---|--|
| Dhital (2018) | To examine the impact of non-performing loan on productivity and profitability of Nepalese commercial banks | Regression models to test the significance and determinants of non-performing loan on the productivity and profitability of Nepalese commercial banks | Bank size and capital adequacy ratio have a positive relationship with return on assets and productivity. Loan to total assets ratio has a negative relationship with return on assets and productivity. |
| Gnawali (2018) | To examine the level of Non-performing loan in Nepalese banking system and its impact on profitability of Nepalese commercial banks | Secondary data from various issues of Banking and Financial Statistics, Bank Supervision Report published by Nepal Rastra Bank and annual reports of the banks. | The study did not report the specific findings or results of the data analysis. |
| Paudyal (2018) | To find out the proportion of Non-performing loan in the selected commercial banks, to evaluate the impact of NPL on the profitability of the commercial banks the study and to analyze the impact of NPL | Multiple regression analysis with secondary data of major commercial banks in Nepal | The study did not report the specific findings or results of the data analysis. |

| | | | |
|------------------|---|--|--|
| Baral (2017) | To find out problems of the Non-performing loans and its effects in ROA and ROE of the Nepalese commercial banks and to examine whether the Nepalese commercial banks are following the NRB directives regarding loan loss provision for Non-performing loan or not | Secondary data of 4 commercial banks for the period of 2010/11 to 2016/17. Regression models to test the significance of Non-performing loan on the profitability of Nepalese commercial banks | The return on assets (ROA) and return on equity (ROE) of the bank somehow depend upon Non-Performing Loan. The bank should reduce its NPLs to increase ROA and ROE of the bank. |
| Bhattarai (2016) | To examine the effect of credit risk on performance of Nepalese commercial banks | Descriptive and causal comparative research designs with pooled data of 10 commercial banks for the period 2010 to 2015. Regression model to analyze the data | Non-performing loan ratio has negative effect on bank performance whereas 'cost per loan assets' has positive effect on bank performance. Capital adequacy ratio has negative but statistically insignificant relationship with bank performance. There is significant relationship between bank performance and credit risk indicators. |
| Radhakrishnan | To analyze the | Regression models | The banks and FI |

| | | | |
|------------------|--|---|---|
| (2016) | Management of Non-performing loan (NPL)-Role of Bank and Financial Institution | to test the significance of Non-performing loan on the profitability | the should recognize the problem early, assess the potential of revival, and attempt restructuring where feasible. |
| Bhattarai (2015) | To identify the impact of macroeconomic variables and bank specific variables on the non-performing loan of the commercial banks in Nepal | Secondary data of 26 commercial banks for the period of 2002-2012 with 227 observations. Regression model to analyze the data | Real effective exchange rate has significantly negative impact on non-performing loan. GDP growth rate has insignificant impact on non-performing loan. |
| Pradhan (2014) | To find out the proportion of non-performing loan and the level of NPL in total assets, total deposit and total lending in the selected commercial bank; to examine the relationship between loan loss provision and the impact of non-performing loan in the performance of commercial bank | Secondary data of SCBNL, RBB, Everest bank, NB bank and NBBL for the period of 2010/11 to 2016/17. Regression models to test the significance of Non-performing loan on the profitability of commercial banks | Improper credit policy, political pressure to lend, lack of supervision and monitoring, economic slowdown, overvaluation of collateral are the major causes of NPL. |
| Singh (2013) | To examine the impact of credit risk on the performance | Multiple regression models with 11 years | Credit risk is the possibility that a borrower or |

| | | | |
|---------------------------|---|--|--|
| | of banks | return on asset | counterparty would |
| | | (ROA), non- | fail to meet its |
| | | performing loan | obligations in |
| | | (NPL) and capital | accordance with |
| | | adequacy ratio | agreed terms. Credit |
| | | (CAR) from each | risk arises from the |
| | | bank. Secondary | banks' dealings with |
| | | data from RBI or | lending to |
| | | annual report from | corporates. Credit risk |
| | | 2003 to 2013 | is the oldest and |
| | | | biggest risk that banks |
| | | | inherit by virtue of |
| | | | their nature of |
| | | | business. |
| Chhetri (2012) | To provide connotation of the term NPL and its potential sources, implication of NPL in financial sector in the South East Asian Region; to give possible measures to contain NPL | The study did not report the specific methodology or data sources used for the analysis. | Loans and advances of financial institutions are meant to be serviced either part of principal or interest of the amount borrowed in stipulated time as agreed by the parties at the time of loan settlement. If the date becomes past due, the loan becomes non- performing loan. |
| Cipovová and Belás (2012) | To examine the application of the standardized approach with assigned external rating and the | Secondary data of 8 million capital requirement. Comparison of different methods for credit risk | The standardized approach with assigned external rating has worked out a much lower capital adequacy than the |

| | | | |
|---|---------------------------|-------------|--|
| Foundation Ratings Approach (FIRB) for credit measurement | Internal Based risk | measurement | standardized approach without assigned external rating. The FIRB has calculated the lowest amounts of capital requirement and has a possibility to determine the parameters according to bank's own estimates. |
|---|---------------------------|-------------|--|

2.3 Research Gap

The above studies review here have found some limitations and are also concerned with different contexts. So, this study gives focus on non-performing loans and its impact on bank performance in the context of Nepal. Research on the relationship between non-performing loans (NPLs) and profitability in the context of Nepalese commercial banks is relatively scarce, presenting a significant research gap. While existing studies have explored this relationship in various global and regional contexts, there is a notable absence of research specifically addressing the unique operating environment of Nepalese banks. Given the distinct economic, regulatory, and socio-political landscape of Nepal, investigating how NPLs impact the profitability of commercial banks in this country could provide valuable insights relevant to financial stability and economic development. By focusing on Nepal, researchers can shed light on the specific challenges and opportunities faced by its banking sector, offering nuanced perspectives on the dynamics between NPLs and profitability within this context.

Moreover, there is a need for research that delves into the temporal dynamics of the relationship between NPLs and profitability in Nepalese commercial banks. While some studies have examined this relationship over specific periods, there is limited understanding of how it evolves over different

economic cycles, especially considering the recent political instability and regulatory changes in Nepal. Exploring the temporal aspects of NPLs and profitability can provide insights into how these variables interact under varying economic conditions, informing strategic decision-making by bank management, policymakers, and investors. Additionally, investigating bank-specific factors such as size, capital adequacy, risk management practices, and corporate governance structures can offer a deeper understanding of how these factors influence the relationship between NPLs and profitability within the Nepalese banking sector.

CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with research methodology to be adopted for the study to satisfy the objectives of the study. It consists of research design, sample and population, nature and sources of data, instrument of data collection procedure, methods and tools of data analysis and definition of variables.

3.1 Research design

This study is based on both descriptive and casual comparative research design and this study is based on secondary data. Secondary data are collected from their respective annual report, other publication and journals of the related banks published by Nepal Rastra Bank, Nepal stock exchange and other related magazines. Decision regarding, what were, when how much by means concerning an enquiry or a research study constitute a research design “A research design is the arrangement of conditions for collection and analysis of data in manner that aims to combine relevance to the research purpose with economy in procedure .” In fact the research constitute the blue print for the collection, measurement and analysis of data as such the design includes an outline of what the researcher will do writing the hypothesis and its operational implications to the final analysis of data.

3.2 Population and Sample, and Sampling Design

The study's sample population is limited to Nepalese commercial banks that are listed on the Nepal Stock Exchange (NEPSE). The 20 Nepalese commercial banks that are listed in the NEPSE, five more Nepalese commercial banks, and 10 years of data—from 2013–2022–2023-202–2023—that have been chosen as a sample comprise the population for the research. Laxmi Sunrise Bank Limited, Siddhartha Bank Limited, Kumari Bank Limited, Nepal Bank Limited, and Prime Commercial Bank Limited are the names of the respective banks. As a result, the purposive sampling approach has been used. Wardani and Subowo (2020) used the purposive sampling strategy in their study.

Purposive sampling was used to gather data from five Nepalese commercial banks with the lowest paid-up capital. The gathered information has been entered into the social science statistical software (SPSS). The minimum,

maximum, mean, and standard deviation have all been computed under the descriptive statistic category. Karl Pearson's correlation and regression analysis have been used to correlation analysis. The analysis of variance test has been used to inferential statistics.

3.3 Nature and Sources of data

Data is a highly dependable and useful research tool. The secondary data is used by the research to achieve its goals. Secondary data are those that have already been gathered or used and are made accessible to others in the form of published statistics, such as those found in journals, newspapers, magazines, annual reports, and so on. A main piece of data loses its uniqueness and becoming secondary once it is utilized. The primary source of secondary data for this research is the concerned bank's annual reports. In addition to the yearly reports, several additional data sources, such as newspapers, magazines, economic journals, NRB reports, and study plan documents, have also been utilized.

3.4 Instrument of Data Collection

The study is predicated on secondary data. The goal of descriptive and haphazard comparative data analysis is computation. A questionnaire was utilized to gather primary data, while websites and annual reports of listed corporations were used to gather secondary data. Numerous statistical and financial methods, such as regression, correlation, standard deviation, average (mean), and others, have been utilized for mathematical analysis. In a similar manner, calculations have been done using Word, Excel, SPSS, and spreadsheets.

Since they are raw data, information gathered from many sources cannot be used directly in its original form. Data analysis and research studies would be useless if the data were not provided in an easy-to-understand manner. Without processing the data, readers would find it impossible to grasp the analysis section. Thus, data processing is necessary to ensure that the research is immediately comprehensible. Presenting data involves editing, verifying, and

using a variety of tools, including tables, charts, figures, and trend lines, to preserve unprocessed data in an intelligible format. The data in this research are also presented utilizing all required tools to facilitate a good and straightforward understanding of the analysis portion.

3.5 Methods of Analysis

The financial and statistical techniques used to assess the data and draw the research's conclusion will be covered and included in the thesis. Various techniques are used to examine the data in order to derive specific findings from this study. The focus on statistical tools is in line with the topic requirement, hence the following statistical tools will be employed in this research.

3.5.1 Arithmetic Mean

The value that represents the group of values and provides information about the concentration of values in the middle of the distribution is called the mean. We get a point from an average that best represents the data. It portrays the traits shared by the whole group. Between the two extreme observations of the whole data set is where the arithmetic mean value is found. It is a messenger for the homogenous bulk of info.

By adding up each item and dividing the sum by the total number of things, the AM's value can be found.

Mathematically,

Arithmetic Means (AM) is given by,

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

Where,

X=Arithmetic Mean

$\sum X$ = Sum of all the values of the variable X

n= Number of observation

3.5.2 Standard Deviation

The standard Deviation (σ) measure the absolute dispersion. The greater the standard deviation, greater will be magnitude of the deviations of the values form

their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series and vice versa.

Mathematically,

$$\sigma = \sqrt{\frac{1}{n} \sum (X - \bar{X})^2}$$

3.5.3 Coefficient of Variation

Coefficient of Variation (CV) is a relative measure. To compare the variability between two or more series, CV is more appropriate statistical tool.

Mathematically,

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

3.5.4 Correlation Coefficient (r)

Correlation is the term used to describe the right statistical methods used to uncover, measure, and express a quantitative connection in a concise formula. A positive correlation exists when there is a direct proportionality between the values of the variables. In contrast, if the variable values are inversely proportionate, the correlation is considered to be negative; nonetheless, Karl Pearson states that the correlation coefficient always stays between +1 and -1. The simple correlation coefficient (between two variables, for example, X and Y) is given by,

$$r_{xy} = \frac{cov(X, Y)}{\sigma_X \sigma_Y}$$

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

Where, r_{xy} is the correlation between two variables X and Y, 'r' lies always between +1 and -1

When 'r' = +1, there is perfect positive correlation.

When 'r' = -1, there is perfect negative correlation.

When 'r' = 0, there is no correlation.

When 'r' lies between 0.7 to 0.999 (or -0.7 to -0.999) there is high degree of positive or negative correlation.

When 'r' lies between 0.5 and 0.699, there is a moderate degree of correlation.

When 'r' is less than 0.5, there is low degree of correlation.

3.5.6 Regression Analysis

The statistical method that allows us to predict an unknown variable's value from a known value of any other variable is called regression. We may estimate the value of one variable from the value of another, assuming that the two variables are tightly connected. The one whose value is known is known as the independent variable, and the one whose value has to be estimated is known as the dependent variable. Therefore, regression uses a specific amount of change in one variable to predict the average likely change in another. By establishing an estimated functional connection between the variables, it is a statistical method for identifying the link between the variables. It is used to ascertain whether or not the provided independent variable has an impact on the dependent variable.

A popular application of statistical theory in almost all scientific fields is regression analysis.

Multiple Regression model

Data regression model has been used in the analysis. The technique of data estimation takes care of the problem of heterogeneity in the 2 banks selected for the study. The econometric model employed in the study is given as:

$$Y = \beta_0 + \beta X_{it} + e_{it}$$

Here, X_{it} is the vector of explanatory variables, β is the coefficient of explanatory variables, Y is the dependent variable, e_{it} is the error term (assumed to have zero mean and independent throughout the time period), and β_0 is the constant. The impact of non-performing loans (which regulate the effect of cash reserve requirements and bank size) on the performance of commercial banks has been calculated using the regression equation below by using the prescribed econometric model, specifically tailored to this study:

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4 BS_{it} + e_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4 BS_{it} + e_{it}$$

Where,

ROA_{it} = Return on assets (ratio of earnings after taxes to total assets) of bank I
in year t

ROE_{it} = Return on equity (ratio of earnings after taxes to total equity) of bank I in year t

CAR_{it} = Capital adequacy ratio of i^{th} bank in year t

$NPLR_{it}$ = Non-performing loan ratio of i^{th} bank in year t

CRR_{it} = Cash reserve ratio of i^{th} bank in year t

BS_{it} = Total assets of a company of i^{th} bank in year t

B_0 = the intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = The slope which represents the degree with which bank performance changes as the independent variable changes by one unit variable.

e_{it} = error component

The selected study variables, their definition, basis of measurement and priori expected sign have been depicted in Table 3.

Table 2

Variable's definition

| S.N. | Variables | Description | Measurement |
|------|-----------|----------------------------|---|
| 1 | CRR | Cash Reserve Ratio | Percentage of balance with NRB to total deposits |
| 2 | CAR | Capital Adequacy Ratio | Percentage of bank capital against its risk weighted assets |
| 3 | NPLR | Non -performing loan Ratio | Ratio of bad loans over its total assets |
| 4 | BS | Bank Size (Rs) | Total assets of the bank |
| 5 | ROA | Return on assets | Percentage of return on total assets |
| 6 | ROE | Return on equity | Percentage of return on total equity |

3.6 Research Framework and Definition of Variables

The theoretical framework is the basis or foundation upon which the study is established. It is within the framework of this theory that the entire story proceeds.

This framework is design to understand the effect of non-performing loan on financial performance. In view of theories and evidence, it is expected that the financial performance may be influenced by non-performing loan. The theoretical framework is developed to test the impacts of variables on the non-performing loan of commercial Banks of Nepal.

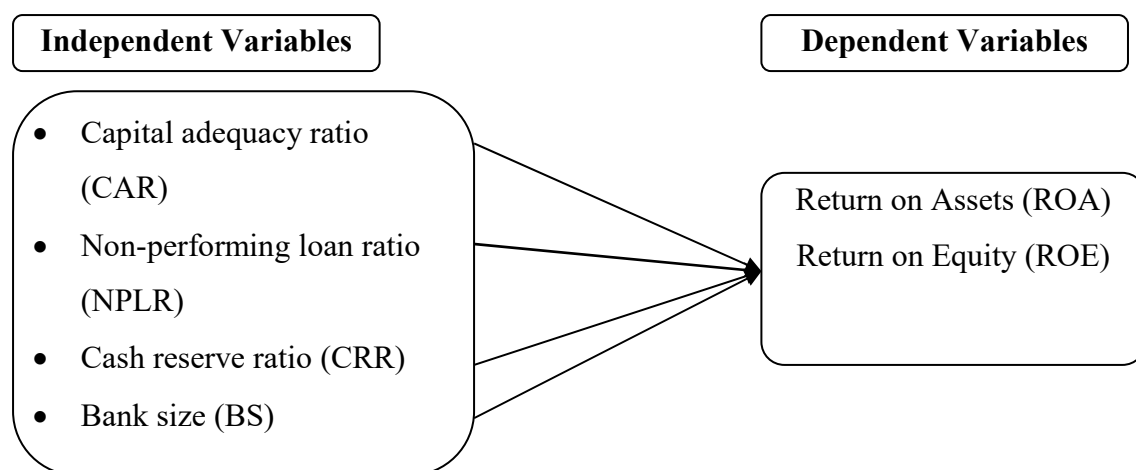


Figure 1: Research Framework

Source: Singh et al. (2021)

Dependent Variable

Return on Assets (ROA)

The measures of bank performance may be varied and the choice of the specific performance measure depends on the objective of the study. In theoretical literature the performance measures could be found such as: traditional measures of performance (ROA - return on assets, ROE - return on equity, cost to income ratio, net interest margin), economic measure of performance.

Return on Assets (ROE)

Return on Equity (ROE) is a financial ratio that measures a company's profitability in relation to the equity held by its shareholders. It's calculated by dividing the company's net income by its shareholders' equity. Essentially, it shows how effectively a company is using the money invested by its shareholders to generate profits.

Independent Variable

Capital Adequacy Ratio (CAR)

Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capital reduces the chance of distress (Diamond and Rajan, 2000). However, it is not without drawbacks that it

induces weak demand for liability, the cheapest sources of fund capital adequacy are the level of capital required by the banks to enable them withstand the risks such as credit, market and operational risks they are exposed to in order to absorb the potential losses and protect the bank's debtors. Capital adequacy ratio is a ratio used to measure a bank's capital adequacy to cover all the potential inherent risk in the bank earning assets, mostly in the form of loans. CAR based on the principle that any assets owned by the bank carries the risk that banks should provide capital for a certain percentage of total earning assets.

Non-Performing Loan Ratio (NPLR)

Non-performing loans ratio (NPLR) reflects the bank's credit quality and is considered as an indicator of non-performing loan. NPLR, in particular, indicates how banks manage their non-performing loan because it defines the proportion of loan losses amount in relation to total loan amount. NPLR has been used as the default rate on total loan and advances. Assert that non-performing loan ratio (NPLR) is the major indicator of commercial Banks' non-performing loan. They showed a statistically significant negative effect on profitability measured by ROA. Since it measures the default rate, a negative relationship could be expected between non-performing loan ratio and financial performance of commercial Banks.

Cash Reserve Ratio (CRR)

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

Bank Size (BS)

One of the control variables used to analyze the performance of the banking system is bank size as measured by total assets. In the banking industry, bank size is often

employed to take advantage of possible economies or diseconomies of scale. This variable adjusts for product cost variations and risk diversification based on the financial institution's size. This is added to account for the likelihood that larger banks may have more diverse loan and product offerings. The natural logarithm of the banks' total assets is often used as a stand-in for bank size in financial literature.

CHAPTER IV

RESULT AND DISCUSSION

The data will be shown in tables in this chapter. The study's primary goal is to offer data and evaluate it using a variety of statistical and financial methods. The analysis and presentation of empirical data comprise this chapter. As a result of the critical factors being carefully considered and analyzed, this chapter will examine the elements of non-performing loans and how they affect financial performance. Non-performing loan analysis has been used to examine and understand the data.

Such that this research will establish the sample banks' strengths and weaknesses, past performance, and current financial situation. The financial tools featured regression and correlation analysis between variables in addition to graphical display. For the analysis, key variables such as ROA, ROE, CAR, NPLR, CRR, and BS are taken. Furthermore, the research also takes into account the factors that influence financial success. The link between the factors impacting financial performance is reflected in the analysis, which is done using a variety of financial instruments and data displays.

4.1 Results

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

Table 4 presents the descriptive statistics of the independent factors (capital adequacy ratio, non-performing loan ratio, cash reserve ratio, bank size) and dependent variables (return on equity and return on assets) for a subset of Nepalese commercial banks.

4.1.1 Descriptive statistics

For the research period of 2013/14 to 2022/23, the dependent and independent variables of five chosen Nepalese commercial banks are shown in the table below. Return on assets is the dependent variable, whereas bank size, capital adequacy ratio, non-performing loan ratio, and cash reserve ratio are the independent factors.

Table 4

Descriptive statistics

| | N | Minimum | Maximum | Mean | S.D. |
|------|----|-----------|------------|-----------|-----------|
| ROA | 50 | 1.06 | 2.53 | 2.0220 | .46071 |
| ROE | 50 | 7.69 | 53.42 | 16.4603 | 6.64741 |
| CAR | 50 | 11.79 | 18.60 | 14.2955 | 2.42619 |
| NPLR | 50 | 12.30 | 24.15 | 16.7895 | 3.78244 |
| CRR | 50 | 0.16 | 0.81 | 0.4515 | 0.23752 |
| BS | 50 | 487450.91 | 1631945.06 | 995411.35 | 397995.42 |

Table 4 shows the average return on assets is 2.02 times that means the average return on assets of Nepalese commercial banks over the period 2013/14 to 2022/23 is 2.02 times. The minimum return on assets over the period is 1.06 times and maximum return on assets is 2.53 times. The standard deviation of the return on assets is 0.461, which shows there is a minimum fluctuation in standard deviation.

The average capital adequacy ratio is 14.2955 percent that means the average capital adequacy ratio of Nepalese commercial banks over the period 2014-2023 is 14.2955 percent. The minimum capital adequacy ratio over the period is 11.79 percent and maximum capital adequacy ratio is 18.60. The standard deviation of the capital adequacy ratio is 2.43, which shows there is a minimum fluctuation in standard deviation.

The average non-performing loan ratio is 16.79 percent that means the average non-performing loan ratio of Nepalese commercial banks over the period 2014-2023 is 16.79 percent. The minimum non-performing loan ratio over the period is 12.30 percent and maximum non-performing loan ratio is 24.15. The standard deviation of the non-performing loan ratio is 3.78, which shows there is a high fluctuation in standard deviation.

The average cash reserve ratio is 0.4515 percent that means the average cash reserve ratio of Nepalese commercial banks over the period 2014-2023 is 0.4515 percent. The minimum cash reserve ratio over the period is 0.16 percent and maximum cash

reserve ratio is 0.81. The standard deviation of the cash reserve ratio is 0.24, which shows there is a minimum fluctuation in standard deviation.

The average bank size ratio is Rs. 995411.3570 that means the average bank size of Nepalese commercial banks over the period 2014-2023 is Rs. 995411.3570. The minimum bank size ratio over the period is Rs. 487450.91 and maximum bank size is Rs. 1631945.06. The standard deviation of the bank size is Rs. 397995.42603, which shows there is a high fluctuation in standard deviation.

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 4. More specifically, it shows the correlation coefficients of dependent and independent variables for selected Nepalese commercial banks.

4.1.2 Correlation analysis

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

The bivariate Pearson's correlation coefficients between the various research variables are shown in Table 5. Based on data from five chosen commercial banks with fifty /observations from 2013/14 to 2022–23, the correlation coefficients were calculated. Return on assets is the dependent variable, while the capital adequacy ratio, non-performing loans, cash reserve, and bank size are the independent factors.

Table 5

Correlation Analysis

| | ROA | ROE | CAR | CRR | NPL | BS |
|------|--------|--------|---------|-------|-------|----|
| ROA | 1 | | | | | |
| ROE | .168* | 1 | | | | |
| CAR | .287* | .171* | 1 | | | |
| CRR | .347** | .162** | -.262 | 1 | | |
| NPLR | .255* | .049* | -.919** | .323 | 1 | |
| BS | .772** | .286** | .637* | -.553 | -.617 | 1 |

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

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

The correlation analysis results presented in above table 5 shows that Pearson Correlation Coefficient Relationship between CAR (Capital Adequacy Ratio), there's a positive correlation of 0.287 with ROA and 0.171 with ROE. These correlations indicate a moderate positive relationship between CAR and both ROA and ROE. It suggests that stronger capital adequacy tends to be associated with higher returns on both assets and equity. CRR (Cash Reserve Ratio) displays a positive correlation of 0.347 with ROA and 0.162 with ROE. Similarly, NPL (Non-Performing Loans Ratio), there's a positive correlation of 0.255 with ROA and 0.049 with ROE. Lastly, BS (Leverage Ratio) shows a strong positive correlation with ROA (0.772) and ROE (0.286), indicating that higher leverage ratios tend to be associated with higher returns on assets and equity.

4.1.3 Regression Analysis

This section presents the findings of the regression analysis that was computed. More precisely, it displays the regression findings on the financial performance of certain Nepalese commercial banks, including capital adequacy ratio, non-performing loan ratio, cash reserve ratio, and bank size.

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

Multiple linear regression analysis is used to predict the impact of independent variables of interest on deposit. The equation for impact of independent variables is expressed in the following equation:

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4 BS_{it} + e_{it}$$

Where,

ROA_{it} = Return on assets (ratio of earnings after taxes to total assets) of bank *I* in year *t*

CAR_{it} = Capital adequacy ratio of i^{th} bank in year *t*

$NPLR_{it}$ = Non-performing loan ratio of i^{th} bank in year *t*

CRR_{it} = Cash reserve ratio of i^{th} bank in year *t*

BS_{it} = Bank size (natural logarithm of total assets) of i^{th} bank in year *t*

B_0 = the intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = The slope which represents the degree with which bank performance changes as the independent variable changes by one unit variable.

e_{it} = error component

The results of model summary, analysis of variance (ANOVA) and beta coefficients analyzed the impact of independent variables on interest on deposit of Nepalese commercial banks.

Table 6

Model summary (ROA)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .831 ^a | .690 | .442 | .34403 |

a. Predictors: (Constant), BS, CRR, NPLR, CAR

Model summary indicates the R-square also known as coefficient of determination which can help in explaining variance. The value of R-square value as evident from Table 6 is 0.690 which means 69.00% variation in return on assets of Nepalese commercial banks is explained by CRR, NPLR, BS, and CAR. However, the remaining 31.00% (100% - 69.00%) is still unexplained in this research. In other words, there are other additional variables that explained the return on assets of Nepalese commercial banks which has not been considered in this research.

Similarly, adjusted R-square is 0.442 which means 44.2% in bank return on assets of Nepalese commercial banks in Nepal is explained by CRR, NPLR, BS, and CAR after adjusting degree of freedom (df). Model summary also indicates the standard error of the estimate of 0.34403 which shows the variability of the observed value of return on assets of Nepalese commercial banks.

Table 7

ANOVA (ROA)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------|
| 1 | Regression | 1876.515 | 4 | 375.303 | 11.049 | .000b |
| | Residual | 5502.899 | 45 | 33.969 | | |
| | Total | 7379.414 | 49 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), BS, CRR, NPLR, CAR

Table 7 shows the mean square is 375.303, which represents the average variance explained by each predictor. The F-value of 11.049 indicates the ratio of explained

variance to unexplained variance in the model, and the associated significance level (Sig.) of .000b suggests that the regression model is statistically significant at the 0.05 significance level. This indicates that at least one of the independent variables significantly contributes to explaining the variation in ROA. As a result, the independent variables (BS, CRR, NPLR, and CAR) are significant in explaining the variance in bank performance of Nepalese commercial banks in the context of Nepal.

Table 8

Coefficient (ROA)

| Model | | Unstandardized | | Standardized | t | Sig. |
|-------|------------|----------------|------------|--------------|-------|------|
| | | Coefficients | | Coefficients | | |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 39.018 | 5.801 | | 6.725 | .000 |
| | CAR | .115 | .049 | .166 | 2.357 | .020 |
| | CRR | .394 | .210 | .129 | 1.880 | .062 |
| | NPLR | .318 | .058 | .386 | 5.500 | .000 |
| | BS | .019 | .006 | .217 | 3.116 | .002 |

a. Dependent Variable: ROA

Table 8 presents the coefficients of the regression model for ROA (Return on Assets). These coefficients provide information about the strength and direction of the relationship between the dependent variable (ROA) and each independent variable included in the model. The constant term (intercept) has a coefficient of 39.018 with a standard error of 5.801. This means that when all independent variables are zero, the expected value of ROA is 39.018. The associated t-value of 6.725 and a significance level (Sig.) of .000 indicate that this intercept term is statistically significant.

The coefficient for CAR (Capital Adequacy Ratio) is 0.115 with a standard error of 0.049. This suggests that a one-unit increase in CAR is associated with a 0.115 unit increase in ROA, holding all other variables constant. The t-value of 2.357 and a significance level of .020 indicate that this relationship is statistically significant at the 0.05 significance level.

Cash Reserve Ratio (CRR) exhibits a coefficient of 0.394 and a Beta of 0.129. While the coefficient suggests a positive relationship between CRR and ROA, the t-value of 1.880 and a significance level of .062 indicate that this relationship is not statistically significant at the conventional 0.05 threshold, although it approaches significance. This implies that the impact of CRR on ROA may be less conclusive or weaker compared to other variables.

The Non-Performing Loans Ratio (NPLR) shows a substantial coefficient of 0.318 and a Beta of 0.386. This suggests that a one-unit increase in NPLR results in a 0.318 unit increase in ROA, after controlling for other variables. The high t-value of 5.500 and a significance level of .000 indicate that this relationship is statistically significant, highlighting the detrimental effect of non-performing loans on return on assets.

Lastly, the Leverage Ratio (BS) displays a coefficient of 0.019 and a Beta of 0.217. This indicates that a one-unit increase in the Leverage Ratio leads to a 0.019 unit increase in ROA. With a high t-value of 3.116 and a significance level of .002, this relationship is statistically significant, suggesting that higher leverage tends to be associated with higher returns on assets, though the effect may not be as pronounced as other variables.

Multiple linear regression analysis is used to predict the impact of independent variables of interest on deposit. The equation for impact of independent variables is expressed in the following equation:

$$ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4 BS_{it} + e_{it}$$

Where,

ROE_{it} = Return on equity (ratio of earnings after taxes to total equity) of bank I in year t

CAR_{it} = Capital adequacy ratio of i^{th} bank in year t

$NPLR_{it}$ = Non-performing loan ratio of i^{th} bank in year t

CRR_{it} = Cash reserve ratio of i^{th} bank in year t

BS_{it} = Bank size (natural logarithm of total assets) of i^{th} bank in year t

B_0 = the intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = The slope which represents the degree with which bank performance changes as the independent variable changes by one unit variable.
 e_{it} = error component

The results of model summary, analysis of variance (ANOVA) and beta coefficients analyzed the impact of independent variables on interest on deposit of Nepalese commercial banks.

Table 9

Model Summary (ROE)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1 | .504a | .254 | .231 | 5.82825 |

a. Predictors: (Constant), BS, CRR, NPLR, CAR

Model summary indicates the R-square also known as coefficient of determination which can help in explaining variance. The value of R-square value as evident from Table 9 is 0.504 which means 50.40% variation in financial performance of Nepalese commercial banks (ROE) is explained by BS, CRR, NPLR, and CAR. However, the remaining 49.60% (50.40% - 100.00%) is still unexplained in this research. In other words, there are other additional variables that explained the financial performance of Nepalese commercial banks which has not been considered in this research.

Similarly, adjusted R-square is 0.254 which means 25.40% in bank performance of Nepalese commercial banks in Nepal is explained by BS, CRR, NPLR, and CAR after adjusting degree of freedom (df). Model summary also indicates the standard error of the estimate of 5.828 which shows the variability of the observed value of financial performance of Nepalese commercial banks.

Table 10

ANOVA (ROE)

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------|
| 1 | Regression | 82.209 | 4 | 20.552 | 39.307 | .000b |
| | Residual | 206.532 | 45 | .523 | | |
| | Total | 288.741 | 49 | | | |

a. Dependent Variable: ROE

b. Predictors: (Constant), BS, CRR, NPLR, CAR

Table presented in Table 10, The F-value of 39.307 indicates the ratio of explained variance to unexplained variance in the model, and the associated significance level (Sig.) of .000b suggests that the regression model is statistically significant at the 0.05 significance level. This indicates that at least one of the independent variables significantly contributes to explaining the variation in ROE. As a result, the independent variables (BS, CRR, NPLR, and CAR) are significant in explaining the variance in bank performance of Nepalese commercial banks in the context of Nepal.

Table 11

Coefficient (ROE)

| Model | Unstandardized | | Standardized | t | Sig. |
|--------------|----------------|------------|--------------|--------|------|
| | Coefficients | | Coefficients | | |
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.199 | .195 | | 6.142 | .000 |
| CAR | .377 | .055 | .377 | 6.905 | .000 |
| CRR | .167 | .066 | .142 | 2.550 | .011 |
| NPLR | .113 | .053 | .109 | 2.119 | .035 |
| BS | -.019 | .006 | -.217 | -3.116 | .002 |

a. Dependent Variable: ROE

Table 11 presents the coefficients of the regression model for ROE (Return on Equity). These coefficients offer insights into the relationship between the dependent variable (ROE) and each independent variable included in the model. The constant term (intercept) has a coefficient of 1.199 with a standard error of 0.195. This implies that when all independent variables are zero, the expected value of ROE is 1.199. The associated t-value of 6.142 and a significance level (Sig.) of .000 indicate that this intercept term is statistically significant.

The coefficient for CAR (Capital Adequacy Ratio) is 0.377 with a standard error of 0.055. This suggests that a one-unit increase in CAR leads to a 0.377 unit increase in ROE, holding all other variables constant. The t-value of 6.905 and a significance level of .000 indicate that this relationship is statistically significant at the 0.05 significance level.

Similarly, the coefficients for CRR (Cash Reserve Ratio), NPLR (Non-Performing Loans Ratio), and BS (Leverage Ratio) represent their respective impacts on ROE. The positive or negative sign of the coefficient indicates the direction of the relationship, while the t-value and significance level determine the statistical significance of the relationship.

The Non-Performing Loans Ratio (NPLR) shows a coefficient of 0.113 and a Beta of 0.109. This indicates that a one-unit increase in NPLR results in a 0.113 unit increase in ROE, holding other variables constant. The moderate t-value of 2.119 and a significance level of .035 suggest that this relationship is statistically significant, highlighting the adverse effect of non-performing loans on return on equity.

Contrastingly, the Leverage Ratio (BS) displays a coefficient of -0.019 and a Beta of -0.217. This suggests that a one-unit increase in the Leverage Ratio leads to a decrease of 0.019 units in ROE. With a high t-value of -3.116 and a significance level of .002, this relationship is statistically significant, indicating that higher leverage tends to be associated with lower returns on equity, mirroring the potential risks associated with increased leverage.

4.2 Discussion

The first objective's outcome shows a positive and statistically significant capital adequacy ratio. The outcome defies the conclusions drawn by Abu-đdrop and Kokh (2020), who discovered that the ratio of gross loans to non-performing loans had a

detrimental impact on banks' financial performance. This outcome, however, is consistent with Suyanto's (2021) results, which indicated a negative correlation between non-performing loans and bank performance. The study's findings indicate that there is little correlation between poor credit and liquidity and bank performance. Low bank performance is correlated with a high level of poor credit.

The outcome of the second aim is in line with the findings of Otworko and Maina (2021), who discovered a strong and favorable correlation between bank performance and the cash reserve ratio. The outcome shows that the coefficient of cash reserve ratio is positive and statistically insignificant, which is contrary to priori expectations. The study's findings indicate that the cash reserve ratio has no bearing on how well Nepal's commercial banks function.

Ultimately, the ultimate goals of bank size indicate a noteworthy inverse relationship between bank success and size. The bank size coefficient is as anticipated, and the outcome is in line with research by Khati (2020), which discovered a negative correlation between bank size and performance. Furthermore, the study's findings suggest that bigger Nepalese banks do better than smaller ones.

CHAPTER V

SUMMARY AND CONCLUSION

This chapter consists of mainly three parts: Summary, conclusion and recommendation. In summary part, revision or summary of all four chapters are made. In conclusion part, the result from the research is summed up and in recommendation part, suggestion and recommendation is made based on the results and experience of this thesis work. Recommendation is made for improving the present situation to the concerned parties as well as for further research.

5.1 Summary

The largest risk that banks face is non-performing loans, and more than any other risk, the accuracy and effective management of this risk is critical to the success of the bank's operations. Failure by a counterparty or borrower to uphold their end of the bargain might result in financial loss and negatively impact the bank's financial performance. Examining the impact of non-performing loans on the financial performance of Laxmi Sunrise Bank Limited, Siddhartha Bank Limited, Kumari Bank Limited, Nepal Bank Limited, and Prime Commercial Bank Limited. Commercial banks is the primary goal of the research. The two sides of the same coin are the advantages and restrictions. Every study project has some degree of constraints. Some restrictions are placed on this research in order to make it accurate, significant, and important while still achieving its goal in the allotted time, space, and data. This study is undoubtedly important to a number of different groups of people, but it is especially focused on the following: the importance of the study to the bank's management team, shareholders, customers, financial institutions, and stock exchanges; the importance of the study to government bodies and policy makers; and the importance of the study to other parties, including competitors, stockbrokers, dealers, and market makers.

Regression models using Return on Equity (ROE) and Return on Assets (ROA) as the dependent variables were used in the study to determine how non-performing loans (NPL) affected bank profitability in Nepal. To determine how various financial measures affected bank profitability, their effects on the Capital Adequacy Ratio

(CAR), Cash Reserve Ratio (CRR), Non-Performing Loans Ratio (NPLR), and bank size (BS) were investigated as independent variables.

Notable correlations between the variables were found using the correlation analysis. NPLR, in particular, showed strong correlations with ROA and ROE, suggesting a negative relationship between profitability and non-performing loan levels. Furthermore, CAR exhibited favorable relationships with ROE and ROA, indicating that better returns on equity and assets are often linked to improved capital adequacy. More investigation using regression models and ANOVA offered more in-depth understanding of the connections between the variables. Regression models for both ROA and ROE were found to be statistically significant based on the ANOVA findings, suggesting that at least one independent variable substantially contributes to explaining the variance in bank profitability. The independent variables' coefficients in the regression models provide insight into how each one affects ROA and ROE separately. Remarkably, NPLR showed a significant positive correlation with ROA and ROE, suggesting that a larger percentage of non-performing loans is linked to lower profitability. Stronger capital adequacy, on the other hand, seems to have a favorable impact on bank profitability, as shown by the positive impacts of factors like CAR on profitability.

However, other variables like CRR and Leverage Ratio (BS) displayed mixed effects on profitability, with varying degrees of statistical significance. While CRR showed a weaker but still significant positive impact on ROA and ROE, BS demonstrated a significant negative impact on ROE, indicating that higher leverage may lead to lower returns on equity.

In summary, the analysis highlights the significant role of non-performing loans in impacting bank profitability in Nepal. Effective management of non-performing loans, along with maintaining adequate capital reserves and prudent leverage levels, emerges as crucial factors for ensuring sustainable profitability in the banking sector. These findings provide valuable insights for policymakers and banking institutions in Nepal to formulate strategies aimed at enhancing profitability and mitigating risks associated with non-performing loans.

5.2 Conclusion

The analysis of the effect of non-performing loans (NPL) on bank profitability in Nepal reveals several important findings. Non-performing loans significantly impact

bank profitability, as evidenced by their positive correlation with reduced returns on assets (ROA) and returns on equity (ROE). This underscores the importance of effective management and mitigation strategies for non-performing loans to safeguard the profitability and stability of banks in Nepal. Moreover, the analysis highlights the interconnectedness of various financial metrics with bank profitability. While variables like the Capital Adequacy Ratio (CAR) exhibit positive effects on profitability, indicating the importance of maintaining sufficient capital reserves, other factors such as the Cash Reserve Ratio (CRR) and Leverage Ratio (BS) display mixed impacts, underscoring the complexity of their relationships with profitability.

These findings underscore the need for banks in Nepal to adopt proactive measures to address non-performing loans and strengthen their financial resilience. Strategies such as rigorous credit risk assessment, effective loan recovery mechanisms, and prudent leverage management are imperative to mitigate the adverse effects of non-performing loans on profitability. Furthermore, policymakers play a crucial role in creating an enabling regulatory environment that encourages sound banking practices and fosters financial stability. Regulations that promote transparency, risk management, and accountability within the banking sector can contribute to the overall health and sustainability of Nepal's banking industry.

In conclusion, while non-performing loans pose significant challenges to bank profitability in Nepal, they also present opportunities for improvement and growth. By implementing robust risk management practices and adopting proactive strategies to address non-performing loans, banks can enhance their profitability and contribute to the broader economic development of Nepal.

5.3 Implications

This study offers the following implication based on the findings from the empirical analysis are as follows:

- Banks in Nepal need to prioritize robust risk management practices, particularly in assessing and monitoring non-performing loans. This involves implementing stringent credit risk assessment procedures, early identification of potential problem loans, and timely intervention strategies to mitigate risks.
- Maintaining adequate capital reserves is crucial for banks to withstand unexpected losses arising from non-performing loans. Banks should strive to meet regulatory capital requirements while also ensuring sufficient buffers to

absorb potential losses.

- Banks should diversify their loan portfolios to minimize concentration risk and reduce dependence on specific sectors or borrowers. By spreading lending across diverse sectors and customer segments, banks can mitigate the impact of non-performing loans on overall profitability.
- Prudent leverage management is essential to avoid excessive risk-taking and potential financial distress. Banks should carefully manage their leverage ratios to maintain a healthy balance between debt and equity, thereby safeguarding profitability and financial stability.
- Implementing effective loan recovery mechanisms is critical for minimizing the impact of non-performing loans on profitability. Banks should establish robust processes for loan restructuring, recovery, and enforcement to maximize recovery rates and minimize losses from defaulting borrowers.
- Regulatory authorities play a pivotal role in ensuring the stability and soundness of the banking sector. Regulatory frameworks should be regularly reviewed and updated to align with evolving market conditions and emerging risks, with a focus on promoting transparency, accountability, and prudent risk management practices.

Future research implications are as follows:

- Conducting longitudinal studies to track the trends and dynamics of non-performing loans and their impact on bank profitability over an extended period can provide valuable insights into the effectiveness of risk management strategies and regulatory interventions over time.
- Investigating the influence of macroeconomic factors such as GDP growth, inflation, and interest rates on the incidence of non-performing loans and their subsequent effects on bank profitability can offer a comprehensive understanding of the broader economic determinants of credit quality and banking performance.
- Comparing the performance of banks in Nepal with those in other countries or regions facing similar challenges can help identify best practices, regulatory approaches, and policy interventions that are most effective in mitigating the

impact of non-performing loans on profitability.

- Conducting qualitative studies, including interviews and focus groups with banking professionals, regulators, and borrowers, can provide deeper insights into the underlying causes of non-performing loans and the efficacy of various strategies for managing and resolving them.

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APPENDIX

Return on Assets

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|------|------|------|------|-------|
| 2013/14 | 2.8 | 2.11 | 2.8 | 1.02 | 0.01 |
| 2014/15 | 2.67 | 2.39 | 3.25 | 1.12 | -5.58 |
| 2015/16 | 2.51 | 2.25 | 2.65 | 1.08 | 1.47 |
| 2016/17 | 1.99 | 1.85 | 2.06 | 1.05 | 2.69 |
| 2017/18 | 1.98 | 1.85 | 2.32 | 1.02 | 2.51 |
| 2018/19 | 1.84 | 1.83 | 2.69 | 1.48 | 1.59 |
| 2019/20 | 2.61 | 1.97 | 2.61 | 1.46 | 1.73 |
| 2020/21 | 2.61 | 1.94 | 2.11 | 1.15 | 1.39 |
| 2021/22 | 1.71 | 1.42 | 1.58 | 1.11 | 1.55 |
| 2022/23 | 1.22 | 0.89 | 1.71 | 0.94 | 1.65 |

Return on Equity

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|-------|-------|-------|-------|-------|
| 2013/14 | 61.92 | 15.02 | 28.36 | 30.25 | 2.50 |
| 2014/15 | 76.57 | 20.31 | 26.38 | 32.78 | 14.95 |
| 2015/16 | 72.50 | 22.85 | 26.27 | 27.91 | 15.42 |
| 2016/17 | 57.40 | 16.2 | 21.69 | 22.73 | 16.40 |
| 2017/18 | 18.38 | 15.81 | 17.18 | 25.61 | 21.96 |
| 2018/19 | 16.04 | 14.85 | 11.98 | 22.41 | 16.49 |
| 2019/20 | 16.00 | 17.46 | 18.66 | 20.94 | 13.54 |

| | | | | | |
|---------|-------|-------|-------|-------|-------|
| 2020/21 | 17.33 | 17.08 | 19.49 | 17.76 | 13.32 |
| 2021/22 | 16.82 | 10.44 | 15.15 | 13.61 | 8.94 |
| 2022/23 | 16.54 | 6.26 | 9.44 | 15.19 | 12.08 |

Capital adequacy ratio

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|-------|-------|-------|-------|-------|
| 2013/14 | 13.93 | 11.02 | 11.01 | 25.57 | 23.32 |
| 2014/15 | 12.54 | 11.59 | 11.59 | 24.43 | 15.8 |
| 2015/16 | 12.27 | 11.31 | 11.18 | 24.72 | 13.04 |
| 2016/17 | 13.1 | 13.33 | 11.57 | 20.3 | 12.67 |
| 2017/18 | 16.38 | 12.66 | 11.73 | 18.33 | 16.86 |
| 2018/19 | 21.08 | 14.54 | 12.9 | 19.25 | 18.1 |
| 2019/20 | 22.99 | 14.2 | 13 | 16.27 | 17.22 |
| 2020/21 | 19.69 | 13.74 | 12.5 | 15.08 | 13.41 |
| 2021/22 | 18.51 | 13.38 | 13.07 | 13.04 | 13.52 |
| 2022/23 | 17.17 | 12.48 | 12.77 | 12.74 | 11.65 |

Non-performing loan ratio

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|------|------|------|------|-------|
| 2013/14 | 0.78 | 0.84 | 2.33 | 1 | 10.03 |
| 2014/15 | 0.77 | 0.62 | 2.13 | 0.28 | 16.18 |
| 2015/16 | 0.48 | 0.97 | 2.23 | 0.17 | 8.33 |
| 2016/17 | 0.34 | 0.66 | 1.82 | 0.13 | 4.1 |

| | | | | | |
|---------|------|------|------|------|------|
| 2017/18 | 0.32 | 0.38 | 1.14 | 2.74 | 3.91 |
| 2018/19 | 0.19 | 0.25 | 0.8 | 0.4 | 3.92 |
| 2019/20 | 0.18 | 0.2 | 0.55 | 0.54 | 2.59 |
| 2020/21 | 0.15 | 0.16 | 0.74 | 0.92 | 3.21 |
| 2021/22 | 0.44 | 0.22 | 0.98 | 0.84 | 2.8 |
| 2022/23 | 0.96 | 0.12 | 0.84 | 1.47 | 2.43 |

Cash reserve ratio

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|-------|-------|-------|------|-------|
| 2013/14 | 22.4 | 17.22 | 8.6 | 5.33 | 6.73 |
| 2014/15 | 16.43 | 15.19 | 9.32 | 6.76 | 6.73 |
| 2015/16 | 21.18 | 16.91 | 11.32 | 5.65 | 13.93 |
| 2016/17 | 24.03 | 24.27 | 14.15 | 6.41 | 11.05 |
| 2017/18 | 7.98 | 16.61 | 6.77 | 6.26 | 6.28 |
| 2018/19 | 19.71 | 16.52 | 10.02 | 5.16 | 5.09 |
| 2019/20 | 18.91 | 17.75 | 10.05 | 4.32 | 4.07 |
| 2020/21 | 7.52 | 18.56 | 4.78 | 3.74 | 5.22 |
| 2021/22 | 14.49 | 14.43 | 11.2 | 3.1 | 4.29 |
| 2022/23 | 7.53 | 18.15 | 3.66 | 3.23 | 3.42 |

Bank size (Log of Total Assets)

| Year | LSL | SBL | KBL | NBL | PCBL |
|---------|-------|-------|-------|-------|-------|
| 2013/14 | 24.75 | 24.45 | 22.57 | 24.25 | 25.33 |

| | | | | | |
|---------|-------|-------|-------|-------|-------|
| 2014/15 | 24.91 | 24.54 | 22.71 | 23.54 | 24.24 |
| 2015/16 | 24.98 | 24.7 | 22.89 | 24.84 | 23.35 |
| 2016/17 | 25.32 | 24.9 | 23.17 | 23.59 | 24.54 |
| 2017/18 | 25.46 | 24.9 | 23.27 | 22.48 | 23.75 |
| 2018/19 | 25.48 | 25.08 | 23.39 | 24.42 | 23.24 |
| 2019/20 | 25.7 | 25.15 | 23.5 | 24.33 | 24.22 |
| 2020/21 | 25.86 | 25.26 | 23.72 | 23.34 | 23.98 |
| 2021/22 | 25.94 | 25.48 | 24.71 | 25.22 | 24.38 |
| 2022/23 | 26.08 | 25.47 | 25.79 | 24.54 | 24.25 |