

LOAN MANAGEMENT OF COMMERCIAL BANKS IN NEPAL

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By

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “A study on loan management of commercial banks in Nepal”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has been proposed and presented as part of requirements for any other academic purposes.

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

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December, 2024

REPORT OF RESEARCH COMMITTEE

Ms. Binita Limbu Kangba has defended research proposal entitled “**A study on loan management of commercial banks in Nepal**” successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Dr. Pitri raj Adhikari and submit the dissertation for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled “**A study on loan management of commercial banks in Nepal**” presented by Ms. Binita Limbu Kangba a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

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ABBREVIATIONS

ANOVA	:	Analysis of Variance
BAFIA	:	Bank and Financial Institution Act
CA	:	Company Act
CAR	:	Capital Adequacy ratio
EBL	:	Everest Bank Limited
HBL	:	Himalayan Bank Limited
GBIME	:	Global IME Bank Limited
GDP	:	Gross Domestic Product
INF	:	Inflation
NPL	:	Non-Performing Loan
NPLR	:	Non-performing Loan Ratio
NABIL	:	NABIL Bank Limited
NRB	:	Nepal Rastra Bank
RBB	:	Rastriya Banijya Bank Limited
ROA	:	Return on Assets
ROE	:	Return on Equity
SZ	:	Size of Bank
SPSS	:	Statistical Package for the Social Sciences
SD	:	Standard Deviation
TU	:	Tribhuvan University

ABSTRACT

This dissertation examines the impact of relationship between loan variables and profitability in Nepalese commercial banks, where Everest Bank Limited, Himalayan Bank Limited, Global IME Bank Limited, NABIL Bank Limited and Rastriya Banijya Bank have been chosen as the sample for the study. The main objectives of this study is to examine the relationship between loan variables and profitability of sample banks. This study has covered ten years data from 2013/14 to 2022/23 of sample banks. Descriptive and casual comparative research designs have been employed to make the study more genuine and credible. Five sets of hypothesis has been developed to address the research question. Study is mainly based on secondary data, which are obtained from the balance sheet and profit and loss account presented in annual reports of sample banks, and other relevant data have been obtained from NRB and IMF reports of the relevant fiscal years. Variables identified as independent are non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate, whereas variables identified as dependent are return on assets and return on equity. The study has used different financial ratios and statistical tools namely mean, standard deviation, correlation analysis, regression analysis for the study of the sample banks. It has been found from Karl Pearson's correlation analysis that ROA is insignificant positively associated with GDP growth rate; insignificant negatively associated with non-performing loan ratio, capital adequacy ratio and inflation rate; and significant negatively associated with size of bank. Further, ROE is insignificant positively associated with non-performing loan ratio, GDP growth rate and inflation rate; insignificant negatively associated with capital adequacy ratio; and significant negatively associated with size of bank. The results of regression indicated that ROA is insignificant positively associated with capital adequacy ratio, GDP growth rate and inflation rate; insignificant negatively associated with non-performing loan ratio; and significant negatively associated with size of bank. Further, ROE is insignificant positively associated with non-performing loan ratio, capital adequacy ratio, GDP growth rate and inflation rate; and significant negatively associated with size of bank.

Keywords: Loan, Profitability, Commercial Bank, Correlation, Regression

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Loan management can also be used by companies that deal in products which are generally expensive. These companies have to supplement the sale by offering suitable financing options to customers in order to make the sale. Not only companies can make a sale (for a value which was normally out of customer's reach) but also it can earn additional revenue in terms of finance charges, interests or penalties. Customer can always approach an external financing entity for loan however in-house financing option gives additional flexibility to companies. Companies that provide in-house financing can also sell loans to external financing entities in case they need cash. Loan management facilitates loan refinancing where one or more loans can be grouped and refinanced in a single refinance contract. Companies can pay the refinancer as per the agreed payment schedule (Chopra, 1989). Loan management deals with minimizing those risks which are directly or indirectly involved in lending process. Lending is the principal business activity for most of the commercial banks as it provides highest return by the means of interest on loan and advances and fee on non-fund based credit activities. Banks also invest certain part of their loan in social development in the form of deprived sector lending. Effective management of loan portfolio and credit function is fundamental to bank's safety and soundness. Loan management is the process by which risk that is inherent in lending process are managed and controlled (Rose, 2002). In other words loan management is concerned with formulating and implementing lending policies. Loan management is the management of credit portfolios of the bankers and financial institutions. Loan management affects bank's profitability and liquidity (Adhikari & Jha, 2020). The banks take care in analyzing creditworthiness of borrowing customer to ensure that the interest and principal amount on loan are timely recovered without any problem and liquidity. In short, loan mobilization and recovery are too important aspect of loan management but it also includes all the activities related with loan such as loan processing, marketing, monitoring, concentrating risk, hedging risk, and credit reporting (Agrawal, 2009).

Effective management of the loan and the credit function is fundamental to a bank's safety and soundness. Loan management (LM) is the process by which risks that are

inherent in the credit process are managed and controlled. Because review of the LM process is so important, it is a primary supervisory activity. Assessing LM involves evaluating the steps bank management takes to identify and control risk throughout the credit process. The assessment focuses on what management does to identify issues before they become problems (Rose, 2002). The lending policy of a firm provides the framework to determine whether or not to extend credit and how much credit to extend. The lending policy decision of a bank has two broad dimensions; lending standards and lending analysis (Al-hawatmah & Shaban, 2020). That is why a firm has to establish and use standards in making lending decision, develop appropriate sources of loan and methods of loan analysis.

Lending is a core function of a bank which contributes significantly to its profit. Banks' lending activities are generally governed by certain principals. Since the lending activities involve the depositor's money which is repayable on demand .Bank adheres to principal of safety and security, risk diversification, liquidity, profitability and loan purpose. Loan management is simply management of loan and advances. Success of banking business depends on the efficient and effective management of loan. Poor loan management has proved to be one of the major causes of bank failure throughout the world (Mtaki & Ganesh, 2016). Thus loan management is always a challenging task in banking since it involves risk linked with credit operations.

In this way bank plays an important part in the development of trade, commerce and industry. Today no bankers can survive for long run without proper standing of economy and economy cannot pace ahead without proper loan management. The study has focused on the study of loan management of Global IME Bank Ltd. and Nepal Investment Bank Ltd. Banking business depends upon lending business too. So, it is also known as a risky business. At present situation, these banks are playing the vital role in the growth of the Nepalese economy. So, different types of precautions are taken by banks for their existence. As loan is the core area of commercial banking, it plays the significant impact on the commercial banks in loan management. But the most concerned factor for banking sectors is the total management of loan (Adhikari & Jha, 2020). Joint venture commercial banks plays a tremendous role in a development of developing nations also helps in the economic sector of the country. Typically,

commercial banks main motive is to make providing quality services to the customers in Nepal there exist.

1.2 Problem Statement

Loan management is a crucial function within the banking sector, directly impacting the financial health and profitability of institutions. Loan management involves processes such as risk assessment, credit disbursement, loan monitoring, and recovery. In recent years, Nepali commercial banks have faced significant challenges in maintaining a healthy loan portfolio, primarily due to an increase in non-performing loans (NPLs). In Nepal, the issue of non-performing loans (NPLs) has become particularly concerning. Despite regulatory oversight from the Nepal Rastra Bank (NRB), including requirements for loan loss provisioning, commercial banks are experiencing increasing levels of NPLs. The average NPL ratio surged to 3.40% by the end of the first quarter of 2023, a significant rise from 1.77% the previous year, highlighting deteriorating loan quality across the sector (IMF, 2023). High NPL ratios indicate a growing risk within banks' asset portfolios, as these loans reduce profitability and impede liquidity, limiting banks' ability to lend further (Santomero & Babbel, 2022). This increase not only reflects a decline in loan quality but also threatens the overall profitability and liquidity of these financial institutions (Santomero & Babbel, 2022).

The credit ability is the major source and building better credit ability position is the major strategy of each commercial bank. Credit is the most effective area in the commercial bank. It is regarded as the heart of every commercial bank (Mishkin, 2021). But the banking sector is far from this fact. Thus, Credit management is considered as the heart issues in Nepalese Commercial banking sector. In the recent years, lending risk gained focal importance because of huge financial losses faced by big international financial organizations (Elemu, 2021). Since the financial crisis, financial organizations particularly commercial banking sector have taken special measures to mitigate any forthcoming financial losses caused by mismanagement in loan allocations and credit recoveries. Loan management offers a viable solution to such challenges. Today, credit risk management constitutes a critical component of a comprehensive approach to risk management in banking sector (Owich & Mutswenje, 2021). Boahene et al. (2021) investigated the relationship between credit risk and banks' profitability and identified

a positive relationship between credit risk and profitability. Shrestha and Acharya (2023) stressed that credit risk management indicators affected banks' profitability. Poudel (2018) analyzed the different credit risk management factors and observed that most dominant factors were the default rate.

One of the key drivers of rising NPLs in Nepal is the economic slowdown caused by both domestic and global factors. The effects of the COVID-19 pandemic, combined with prolonged political instability, have resulted in sluggish economic growth, leading to widespread repayment difficulties among borrowers. Furthermore, sectors such as real estate, a significant recipient of commercial bank loans, have experienced heightened volatility. This is compounded by the high-interest rate environment, which has deteriorated borrowers' capacity to service their debts, leading to an overall decline in asset quality across banks (Mishkin, 2021). The IMF has raised concerns over the deteriorating asset quality and the potential risks it poses to the financial system, urging Nepali banks to reassess their lending practices (IMF, 2023).

Moreover, regulatory pressures from the Nepal Rastra Bank (NRB) have become more stringent, with the central bank enforcing higher provisioning requirements to mitigate the risks associated with NPLs. While such regulations aim to strengthen financial stability, they also constrain banks' capacity to extend credit, thereby affecting their profitability and growth (Samriddhi Foundation, 2023). The NRB's guidelines mandate that banks set aside a larger portion of their profits to cover potential losses from bad loans, which has curtailed banks' ability to reinvest in productive sectors. The provisioning requirements for various types of loans, including substandard and doubtful loans, have been increased post-pandemic, adding to the financial burden on banks (Rajaraman, 2023). Additionally, the shift in loan demand towards sectors such as infrastructure and agriculture, while essential for the country's development, introduces new challenges in risk management. Loans to these sectors are often high-risk due to their susceptibility to external shocks such as natural disasters and fluctuating global commodity prices. Consequently, banks face the dual challenge of managing loan growth while ensuring that risk mitigation strategies are robust enough to prevent further increases in NPLs (Saunders & Cornett, 2023).

In light of these complexities, there is a pressing need for Nepali commercial banks to overhaul their loan management strategies. This includes adopting more sophisticated risk assessment tools, enhancing monitoring mechanisms, and improving recovery processes. Additionally, banks must diversify their loan portfolios to minimize exposure to high-risk sectors and improve the balance between profitability and risk management (Santomero & Babbel, 2022). Given the critical role that effective loan management plays in the overall health of the banking sector, addressing these issues is vital for ensuring the long-term sustainability of both individual banks and the broader financial system in Nepal. Shrestha and Acharya (2023) realized that return on assets, capital adequacy ratio, return on equity and net interest margin have a significant positive relationship with non-performing loans though the ratio of total loans to total deposits and logarithms of total assets have a negative relation with non-performing loans.

This study aims to explore the current state of loan management practices in Nepali commercial banks, focusing on the factors contributing to rising NPLs and their implications for financial performance. The research will also examine how regulatory frameworks and external economic conditions influence loan management practices and offer recommendations for improving loan quality and reducing financial risks (IMF, 2023; Mishkin, 2021). For the study, the following research problems have been raised:

- i. What is the current status of loan management in sample banks?
- ii. Is there any relationship between loan variables (non-performing loan ratio capital adequacy ratio, inflation rate, GDP and bank size) and profitability (ROA and ROE) of sample banks?
- iii. Does non-performing loan ratio, capital adequacy ratio, inflation rate, GDP and bank size have impact over profitability of sample banks?

1.3 Objectives of the Study

The objectives of the study are as below:

- i. To explore the current status of loan management in sample banks.
- ii. To examine the relationship between loan variables (non-performing loan ratio capital adequacy ratio, inflation rate, GDP and bank size) and profitability (ROA and ROE) of sample banks.

- iii. To analyze the effect of non-performing loan ratio, capital adequacy ratio, inflation rate, GDP and bank size on profitability of sample banks.

1.4 Research Hypothesis

The following hypotheses have been developed to address the above research questions. Therefore, this research work will attempt to test the following hypotheses:

H1: The non-performing loan ratio has significant impact on profitability of sample banks.

H2: The capital adequacy ratio has significant impact on profitability of sample banks.

H3: The inflation has significant impact on profitability of sample banks.

H4: The GDP growth has significant impact on profitability of sample banks.

H5: The bank size has significant impact on profitability of sample banks in Nepal.

1.5 Rationale of the Study

The topic of commercial bank loan management has been the subject of very few studies. Since loans are the bank's main source of revenue and have an impact on performance and profit, they are a significant aspect. The biggest return is received by banks in the form of loan interest. The banking industry has been severely damaged by the global financial crisis and growing competition. The potential risk of a loan has increased significantly. This has made debt management even more crucial, making it a hot issue right now. Having a clear and efficient loan management function is crucial, especially given the present state of the economy, as it may aid in optimizing earnings during difficult times. All investors, bankers, and stockholders would benefit from this research. Furthermore, since it is a review of the literature, this study will assist other independent researchers in carrying out further research. The study's conclusions would also be helpful to others who are curious about this specific bank. This will help them expand their consumer base and meet the obstacles presented by other businesses.

1.6 Limitations of the Study

This study has been carried out within certain limitations which are as follows:

- The study is based on only five commercial banks operating in Nepal, namely

Everest bank limited (EBL), Himalayan bank limited (HBL), Global IME bank limited (GBIME), NABIL bank limited (NABIL) and Rastriya Banijya bank (RBB).

- The study covers the relevant data and information only for ten years i.e. fiscal year 2013/14 to 2022/23.
- The study is mainly based on the secondary data.
- The accuracy of the study is based on annual reports, NRB publication and work papers of respective work.
- Result of the study are drawn by using mean, standard deviation, correlation, regression and financial ratios.

CHAPTER II

LITERATURE REVIEW

This chapter has been divided into two parts: the first one is conceptual review and the other is empirical review. Conceptual review provides explanations and definitions of all of the terms relevant to the study that have been accessed from different books, published articles, and other relevant documents. The second part i.e. empirical review includes the review of different articles, research reports published in different journals, newspapers etc. and previous research studies i.e. published or unpublished thesis or dissertations.

2.1 Conceptual Review

Concept of Loan

Similar to other forms of debt, a loan also entails the gradual transfer of financial assets from the lender to the borrower. The borrower receives money up front from the lender, which he later returns to him, often not in the form of agreed-upon payments. The interest on the debt is frequently the cost of this service. The lender may place certain restrictions on the borrower known as loan covenants. One of their primary duties is to lend money, which generates profits for finance companies and increases the quantity of money available for consumption in the economy (Bessis, 2010).

Loans are financial assets created when a lender delivers cash or other assets to a borrower in exchange for an obligation to repay on demand by a predetermined date. Loan refers to the sum of money that the creditor (bank) lends to the borrower (clients), either with or without security. The loan is the total amount of money lent by a bank. (Singh et al., 2021).

Finance businesses' main job is to gather deposits or money and then lend it or advance it to investors. The major sources of income are this loan and advances. Any bank's assets section of the balance sheet is dominated by loans and advances. Similar to how loan and advance income makes up a sizable component of a finance company's income sheet. The loan firm receives income from this asset. Furthermore, it also affects how profitable finance companies are. Customers who get loans and advances earn interest.

The primary source of income for financing companies is this interest. Direct loans and overdraft cash credits are the two loan types offered. Banks grant loan on the base of collateral underlying the loan. Banks make careful assessment before granting loans to investors or business enterprises (Pandey, 1998).

Loans and advances are a significant line item on the asset side of a financial company's balance sheet. Interest collected by the finance company on loans and advances is one of the major sources of revenue for banks. A financial corporation needs to organize its loan portfolio to avoid accruing more bad debts and damaging its profitability (Varshney & Swaroop, 1994).

'Advance and loan' is the next element in the hierarchy of liquidity. The assets that create the most of the earnings are the most profitable ones. Typically, a commercial banker will take the lead exclusively for immediate business goals. These loans are provided by specialized institutions like industrial banks. This viewpoint is supported by the claim that long-term loans will make it challenging for the banker to implement them when necessary. For instance, in the case of a mortgage, the mortgaged property may cover the loan with a safe margin. It could be difficult for the bank to convert the mortgaged property into usable cash when it is most required, though. This sentence expresses the meaning of the off-quoted statement. Understanding the distinctions between a mortgage and a bill of exchange is 'the art of banking' (Pant, 2004).

Concept of Loan Management

Loan disbursement is a trade of win-win game. Lenders and borrowers both get benefited out of it. Customers, not products, are the ultimate source of income. For the analysis of customers, several questions need to be answered. These include questions such as which customers buy the product and how they use it, where customers buy the product, when customers buy, how customers choose, why they prefer that product, how they respond, and will they buy it again. All these data available in the respective files of the customers make the marketing activities quite easier and effective (Grywinski, 1991).

Loan management is the process by which risk that is inherent in lending process are managed and controlled. It is concerned with formulating and implementing lending policies. Income and profit depends on lending and investment procedure. A sound

procedure provides high return and profit. So higher the loan, higher will be profit but loan should be increased such that it is manageable. Moreover lending and investment are important not only for bank but also to the overall economic development of the country (Chopra, 1989).

Loan management affects bank's profitability and liquidity. The banks take care in analyzing creditworthiness of borrowing customer to ensure that the interest and principal amount on loan are timely recovered without any problem and liquidity. In short, loan mobilization and recovery are too important aspect of loan management but it also includes all the activities related with loan such as loan processing, marketing, monitoring concentrating risk, hedging risk, and credit reporting. Effective management of the loan and the credit function is fundamental to a bank's safety and soundness. Loan management is simply management of loan and advances. Success of banking business depends on the efficient and effective management of loan. Sound loan policy can attract more customer and increase volume of deposits, investment. Every bank has its own lending policies. Lending policies provides guidelines for loan officers for granting loans (Varshney & Swaroop, 1994).

Loan management is guided by loan policy adopted by bank and help to minimize risk inherent in loan. A considered view is that banks' lending policy could have crucial influence on nonperforming loans. The purpose of loan management is to manage the costs and risks associated with credit. Finding the optimal level of risk and reward where the bank's profitability and earnings are highest is the main goal of loan management. Loan management has gained more importance because credit/loan risk increases rapidly in recent days as commercial banks are increasing their loan and investment. In order to protect themselves from risks and maximize returns, commercial banks develop different tools such as loan management policies and procedures (e.g. loan appraisal policies), customer assessment systems, monitoring systems, and so on. In short, before approving loans, commercial banks assess potential risks in connection to clients ("screen" clients), and later on monitor loans (Saunders & Cornett, 2004).

Loan management's main objective is to try and balance the risk and reward relationship. Loan management can contribute to the financial performance of the company. Loan officer has to assess the credit worthiness of the customer and it is based

on financial information of the buyer like profitability, liquidity and financial solvency. Effective loan management states two important strategies for bank to survive in market one is effective credit management for consistency in your credit and collection processes. This consistency can be achieved through well designed and actively implemented credit and collection policy. Even if you already have a credit and collection policy, it's important to review it on a regular basis to assess its effectiveness and to make sure you are following it. Second is with current customers, don't assume they're okay now because they were okay last year. Review the creditworthiness of all of your important customers. Companies that appeared secure six months ago may now be on the verge of collapse. Set up regular reviews to monitor each customer's creditworthiness to keep a step ahead of bad debt write-offs. Loan management covers the various aspects like credit appraisal, NPA management, recovery management and all the areas right from the beginning like inquiry till the loan has been paid up (Crosse, 1963).

Types of Loan

The basic types of lending that the bank flows are in the form of;

- **Term Credit**

It refers to money lend in lump sum to the borrowers. It is principal form of medium term debt financing having maturities of 1 to 8 years.

A bank credit with maturities exceeding 1 year is called term credits. The firm agrees to pay interest based on the bank's prime rate and to repay principal in the regular installments. Special patterns of principal payments over time can be negotiated to meet the firm's special needs (Richard, 1996).

- **Working Capital Credit**

Working capital denotes the difference between current assets and current liabilities. It is granted to the customers to meet their working capital gap for supporting production process. A natural process develops in funds moving through the cycle are generated to repay a working capital credit (Richard, 1996).

- **Priority or deprived sector credit**

Commercial banks are required to extend advances to the priority and deprived sector. 12 % of the total credit must be towards priority sector including deprived sector. Rs.2 million for agriculture cum service sector and Rs. 2.5 million for single borrowers are limit sanctioned to priority sector. Institutional support to 'Agriculture Development Bank' and 'Rural Development Bank' are also considered under this category (Richard, 1996).

- **Hire Purchase Financing (Installment Loan)**

Hire-purchase credits are characterized by periodic repayment of principal and interest over the maturity of the credit. Hirer agrees to take the goods on hire at a stated rental including their repayment of principal as well as interest with an option to purchase. A recent survey of commercial banks indicates those banks are planning to offer installment credits on a variable rate basis. It can be secured and unsecured as well as direct and indirect installment credit (Richard, 1996).

- **Housing Loan (Real Estate Loan)**

Financial institutions also extend housing loan to their customers. It is different types, such as: residential building, commercial complex, construction of warehouse etc. It is given to those who have regular income or can earn revenue from housing project itself (Richard, 1996).

- **Project Loan**

Project loan is granted to the customers as per project viability. The borrowers have to invest certain proportion to the project from their equity and the rest will be financed as project credit. Construction loans are short-term credits made to developers for the purpose of completing proposed projects. Maturities on construction loan range from 12 months to as long as 4 to 5 years, depending on the size of the specific project (Johnson, 1940). The basic guiding principle involved in disbursement policy is to advance funds corresponding to the completion stage of the project. Hence, what percent of the credit will be disbursed at which stage of completion must be spelled in disbursement policy. Term of loan needed for project fall under it.

- **Consortium Loan**

No single financial institution grant loan to the project due to single borrower limit or other reason and two or more such institutions may consent to grant credit facility to the project of which is baptized as consortium credit. It reduces the risk of project among them. Financiers bank equal (or likely) charge on the project's assets (Richard, 1996).

- **Credit Cards and Revolving Lines of Credit**

Revolving credit line lowers the cost of making credit since operating and processing cost are reduced. Due to standardization, centralized department processes revolving credits resulting reduction on administrative cost. Continued borrowing arrangement enhances cost advantages. Once the credit line is established, the customer can borrow and repay according to his needs and the bank can provide the fund to the customer at lower cost. Charge cards and credit lines tied to demand deposit accounts are the two most common revolving credit agreements. It can be further divided into credit cards, automatic overdrafts lines and large credit lines (Richard, 1996).

- **Off-balance Sheet Transaction**

In fact, bank guarantee and letter of credit refer to off balance sheet transactions of financial institution. It is also known as contingent liability. Contingent liability pinpoints the liability, which may or may not arise during the happening of certain event. Footnotes are kept as reference to them instead of recording in the books of accounts. It is non-funded based remunerative facilities but more risky than the funded until adequate collateral are not taken. Let's its two varieties be described separately (Richard, 1996).

- **Bank Guarantee**

It is used for the sake of the customers in favor of the other party (beneficiary) up to the approved limit. Generally, a certain percent amount is taken as margin from the customer and the customer's margin account is credited.

- **Letter of Credit (L/C)**

It is issued on behalf of the customer (buyer/importer) in favor of the exporter (seller) for the import of goods and services stating to pay certain sum of money on the

submission of certain documents complying the stipulated terms and conditions as per the agreement of L/C. It is also known as importers letter of credit since the bank of importer do not open separate L/C for the trade of same commodities (Richard, 1996).

Lending Policy

Lending policy is a critical component of a commercial bank's operational framework, governing how loans are issued, managed, and recovered. It involves a set of guidelines and criteria that banks follow to assess the creditworthiness of borrowers, determine loan terms, and mitigate risks associated with lending. A well-structured lending policy helps banks balance the need to extend credit and maintain financial stability by minimizing the incidence of non-performing loans (NPLs) (Saunders & Cornett, 2004). In the context of Nepal, where the banking sector plays a pivotal role in economic development, effective lending policies are particularly crucial. Nepalese commercial banks face unique challenges, such as fluctuating economic conditions, regulatory changes, and varying levels of financial literacy among borrowers, all of which influence lending practices (Gurung, 2023).

Recent studies highlight the importance of dynamic and flexible lending policies that can adapt to changing economic environments. For instance, research suggests that stringent lending criteria, while reducing the risk of default, can also limit access to credit for smaller enterprises, which are vital for economic growth in developing economies like Nepal (Shrestha & Acharya, 2023). Moreover, the global economic disruptions caused by the COVID-19 pandemic have underscored the need for banks to incorporate contingency measures in their lending policies, ensuring resilience against unforeseen economic shocks (Pokharel & Thapa, 2022). As banks in Nepal navigate the post-pandemic recovery, their lending policies will play a decisive role in shaping the trajectory of both their profitability and the broader economic landscape.

The integration of macroeconomic indicators, such as the GDP growth rate and inflation, into lending policies is also becoming increasingly relevant. Studies have shown that these factors significantly impact the risk profile of borrowers and the overall performance of loan portfolios (Gurung, 2023). Therefore, a lending policy that aligns with current economic conditions, while incorporating forward-looking risk assessment models, is essential for maintaining the financial health of Nepalese

commercial banks. This approach not only protects the banks from potential losses but also supports sustainable economic growth by ensuring that credit flows efficiently to sectors that need it most.

Objectives of Lending Policy

The lending policy should be carefully established, properly communicated to the lending officers and implemented effectively by the lending officers. The basic objective of lending policy is to maintain effective loan management and control over it. Moreover, it is specified as follows:

- **To have a good assets**

Loans are the risky assets though a bank invests the most of its resources in granting loans and advances. The increasing of non-performing loan causes the non-existence of banks. It is the very quality of assets that led bankruptcy of many banks in South East Asia. The objective of sound loan policy is to protect depositors' interest and maximize returns to the shareholder by striking a balance between liquidity and profitability (Saunders & Cornett, 2004).

- **To contribute to economic development**

A sound lending policy is required to ensure that the loans are given to the productive sector, which contributes to capital formulation and employment generation (Saunders & Cornett, 2004).

- **To give guidance to lending officials**

A borrower should be assured that there would be no discrimination whether he deals with one officer or another. A sound credit policy is imperative to achieve a uniform standard procedure throughout the organization (Saunders & Cornett, 2004).

- **To establish a standard for control**

Every policy requires periodic follow-up to ensure its proper implementation. A sound credit policy helps to determine the variance between actual performance and practices and to take corrective actions. A sound policy is always flexible and works as a guideline. If the variation between the practice and policy is observed, proper education to lending officer or amendment of the policy will become inevitable (Saunders & Cornett, 2004).

Components of Lending Policy

Normally the established loan policy consists following components (Dahal, 2002)

- **Loan volume**

The policy should contain the credit deposit ratio of the bank has to maintain. Credit ratio is much influenced by the behavior of the bank's liabilities. High volatility of deposit and borrowing will result low loan volume and vice versa. Bank should fix amount granted to single borrower as per the regulatory authorities.

- **Loan mix**

Banks should loans to various sectors for its long term survival. It should not put all its fund in one sector even through the sector is doing well. Investment is only one sector may cause bankruptcy of the bank. Even if two individual borrowers of two sectors same level of risk, the portfolio risk is minimized due to diversification. Similarly, there must be clear cut specification regarding the short term and long term loan mix which is very much affected by deposit mix and interest rate movement.

- **Pricing**

Being the custodian of public money, the banks should not take the risk beyond certain level irrespective of how high the lending rate. There is practice in fixing prime lending rate. Based on the risk, certain percentage is added in the prime lending rate. The rate follows higher the risk, higher will be rate and vice versa. The policy should specify whether the bank adopts fixed or floating or mixed type of interest in its loan portfolio. In essence, pricing should be fixed in a manner of profit. Profitability in loan is calculated as follows:

$$P = I - O - C - D$$

Where:

P = Profitability

I = Interest inclusive of other charges, if any

O = Operating expense

C = Cost of fund

D = Expected default loss.

- **Lending Authority**

It is one of the most critical aspects of loan management. The lending authority of bank adopts both centralized and decentralized approach. A certain limit is given to the branch office staffs and beyond the branch limit the proposal should be submitted to head office. The last lending authority of bank is the board of directors having capital like single borrower limit prescribed by NRB. Nowadays some bank tied up this lending authority on the basis of knowledge and experience of lending staff not on the basis of level of the staffs.

- **Securities**

The loan policy should prescribe the acceptable securities of the bank. Some banks accept bullions and personal guarantees as securities whereas other go more than and demand collateral like land, building, etc. likewise, policy should cover the selection of valuers. The factors like marketability, convenience and transferability should be considered while selecting the securities.

- **Risk Analysis**

The policy should states the acceptable criteria of the borrowers for granting loans. The policy should specify the acceptable liquidity, leverage, coverage, efficiency and Profitability ratios so that there can be consistency in the risk perceived by all lending officials.

- **Loan administration and control mechanism**

Structure of loan administration plays important role in the loan management. As loan is the risk assets, there should be proper control in every steps of loan management. The banks having separate department for credit appraisal, documentation, disbursement, relationship maintenance and inspection can find the mistake of one department by others which helps in maintaining the non-performing assets as low level.

Factors Affecting lending Policy

A credit policy is a set of decisions that includes a firm's credit standards. Setting a credit standard implicitly require a measurement of credit quality that is define in terms of the probability that a customer will default, hence not repay the credit. The estimation of probability for a given customer is for the most part of the judgment. Credit evaluation is a well- established practiced, and a good credit manager can make

reasonably accurate judgments of probability of default exhibited by different classes of customers. Here are some factors, which affects the credit policy of the commercial banks. Before setting a credit policy, credit managers need to analyze the following factors carefully (Crosse, 1993):

- **Industry Environment**

It determines the nature of the industry structure, its attractiveness and the company's position within the industry. It helps to determine the company's overall positions on behalf of environment.

- **Financial Condition**

It refers to the borrower's capacity to repay through cash flow as the first way out basis. Collateral liquidation is assessed. Furthermore, the possibility to fall back on income of sub concerns in case of financial crisis of the company condition there after repayment capacity assessed.

- **Management Quality**

It determines the integrity, competence and nature of alliances of borrower's management team, weakness in replacement needs to be evaluated.

- **Technical Strength**

It determines the strength and quality of the technical support required for sustainable operation of the company in terms of availability of work force and technology used. Appropriate technical competencies of the workers, the viability of the technology uses, availability of after sales services, cost of maintenance and replacement need to be evaluated.

- **Security Realization**

It determines the control over various securities obtained bank to the loan provided excitability of the security documents and present value of the properties mortgaged with the bank. Weakness in security threatens the bank is secondly way out.

- **Lending Criteria**

Best credit standard need to be set for lending criteria. Credit standards refer to the strength and credit worthiness a customer exhibit in order to qualify for credit. The

firm's credit standards are applied to determine which customers qualify for the regular credit terms and how much credit each customer should receive. The methods used to measure credit quality are concerned with evaluating the five areas. Generally, they are considered important to determine a customer's credit worthiness, whether the customer is business or individual.

- **Capital**

This indicates applicant's capacity to inject his own money. By capacity analysis, it can be concluded that whether borrower is trying to play with lender's money only or is also injecting his own fund to the project. For capital analysis, financial statements, like certified balance sheet, profit and loss account is the only tools (Chhabra & Taneja, 1991).

- **Character**

It refers to the likelihood that a credit customer will try to repay the debt. Character of a borrower is the most important issue in credit evaluation performances, both for businesses and for individuals. Credits reports will be discussed in details to determine credit reputation; talking with its bankers, its suppliers, its customers and even its customers. It is extremely important in determining whether the credit will be granted (Chhabra & Taneja, 1991)..

- **Capacity**

It is subjective judgment of a customer's ability to pay. Capacity is a measure of the ability of the of the credit customers to generate cash sufficient to service the debt. Evaluation of this factor is based on primarily on the cash income received by the borrower. It is gauged in part by the customers past record can be observations of firms' plants and stores (Chhabra & Taneja, 1991).

- **Collateral**

Collateral is the security proposed by the borrower. Collateral may be of either nature movable or immovable. Movable collateral comprises right from stock, inventories to plying vehicles. In case of immovable it may be land with or without building or fixtures, plant machineries attached to it (Chhabra & Taneja, 1991).

- **Conditions**

Once the funding company is satisfied with the character, capacity, capital and collateral then a credit agreement (sanction letter) is issued in favor of the Borrower-stating conditions of the credit to which borrower's acceptance is accepted (Chhabra & Taneja, 1991).

Process of Lending Policy

A sound loan policy interact all the areas of loan effectively that ultimately helps to operate the organization successfully. Basically, a bank has to follow the following systems and procedures in credit policy.

- **Loan Origination**

Banks must operate within a sound and well-defined criteria for new loan as well as the expansion of existing loans. The loans should be extended within the target markets and lending strategy of the institution. Before allowing a loan facility, the banks must make an assessment of risk profile of the customer transaction. While structuring lending facilities institutions should appraise the amount and timing of the cash flows as well as the financial position of the borrower and intended purpose of the funds. It is utmost important that due consideration should be given to the risk reward trade-off in granting a credit facility and credit should be priced to cover all embedded costs. Relevant terms and conditions should be laid down to protect the institution's interest (Joseph, 1998).

- **Limit Setting**

An important element of credit risk management is to establish exposure limits for single obligors and group of connected obligors. "Institutions are expected to develop their own limit structure while remaining within the exposure limits set by the central bank (i.e. Nepal Rastra Bank). The size of the limits should be based on the credit strength of the obligor, genuine requirement of credit, economic conditions and the institution's risk tolerance. Appropriate limits should be set for respective products and activities. Institutions may establish limits for a specific industry, economic sector or geographic regions to avoid concentration risk (Shrestha, 1993).

- **Loan Administration**

Ongoing administration of the loan portfolio is an essential part of the loan process.

Loan administration function is basically a back office activity that support and control extension and maintenance of loan. A typical loan administration unit performs following function:

Documentation: It is the responsibility of loan administration to ensure completeness of documentation (loan agreements, guarantees, transfer of title of collaterals etc.) in accordance with approved terms and conditions. Outstanding documents should be tracked and followed up to ensure execution and receipt (Desai, 1967).

Loan Disbursement: The loan administration function should ensure that the loan application has proper approval before entering facility limits into computer systems. Disbursement should be affected only after completion of covenants and receipt of collateral holdings. In case of exceptions necessary approval should be obtained from competent authorities (Desai, 1967).

Credit Monitoring: After the loan is approved and draw down allowed, the loan should be continuously watched over. These include keeping track of borrowers' compliance with credit terms, identifying early signs of irregularity, conducting periodic valuation of collateral and monitoring timely repayments (Desai, 1967).

Loan Repayment: The obligors should be communicated ahead of time as and when the principal/markup installment becomes due. Any exceptions such as non-payment or late payment should be tagged and communicated to the management. Proper records and updates should also be made after receipt (Desai, 1967).

Maintenance of Loan Files: Institutions should devise procedural guidelines and standards for maintenance of loan files. The loan files not only include all correspondence with the borrower but should also contain sufficient information necessary to assess financial health of the borrower and its repayment performance. It need not mention that information should be filed in organized way so that external /internal auditors or NRB inspector could review it easily (Desai, 1967).

Collateral and Security Documents: Institutions should ensure that all security documents are kept in a fireproof safe under dual control. Registers for documents should be maintained to keep track of their movement. Procedures should also be

established to track and review relevant insurance coverage for certain facilities/collateral. Physical checks on security documents should be conducted on a regular basis (Desai, 1967).

Credit Monitoring and Control

Credit risk monitoring refers to incessant monitoring of individual credits inclusive of off-balance sheet exposures to obligors as well as overall credit portfolio of the bank. Banks need to enunciate a system that enables them to monitor quality of the credit portfolio of day-to-day basis and take remedial measures as and when any deterioration occurs. Such a system would enable a bank to ascertain whether loans are being serviced as per facility terms, the adequacy of provisions, the overall risk profile is within limits established by management and compliance of regulatory limits. Establishing an efficient and effective credit monitoring system would help senior management to monitor the overall quality of the total credit portfolio and its trends. Consequently the management could fine tune or reassess its credit strategy/policy accordingly before encountering any major setback (Gupta, 1984). The banks credit policy should explicitly provide procedural guideline relating to credit risk monitoring. At the minimum it should lay down procedure relating to the followings:

- **Financial Position and Business Conditions**

The most important aspect about an obligor is its financial health, as it would determine its repayment capacity. Consequently institutions need carefully watch financial standing of obligor. The key financial performance indicators on profitability, equity, leverage and liquidity should be analyzed. While making such analysis due consideration should be given to business/ industry risk, borrowers' position within the industry and external factors such as economic condition, government policies, regulation. For companies whose financial position is dependent on key management personnel and /or shareholders, for example, in small and medium enterprises, institutions would need to pay particular attention to the assessment of the capability and capacity of the management / shareholders (Khan, 1982).

- **Conduct of Accounts**

In case of existing obligor the operation in the account would give a fair idea about the quality of credit facility. Institutions should monitor the obligor's account activity,

repayment history and instances of excesses over credit limits. For trade financing, institutions should monitor cases of repeat extensions of due dates for trust receipts and bills (Khan, 1982).

- **Loan Covenants**

The obligor's ability to adhere to negative pledges and financial covenants stated in the loan agreement should be assessed and any breach detected should be addressed promptly (Khan, 1982).

- **Collateral Valuation**

Since the value of collateral could deteriorate resulting in unsecured lending, banks need to reassess value of collaterals in periodic basis. The frequency of such valuation is very subjective and depends upon nature of collaterals. For instance loan granted against shares need revaluation on almost daily basis whereas if there is mortgage of a residential property the revaluation may not be necessary as frequently. In case of credit facilities secured against inventory or goods at the obligor's premises, appropriate inspection should be conducted to verify the existence the valuation of the collateral (Khan, 1982). External Rating and Market Price of securities purchased as a form of lending or long-term investment should be monitored for any deterioration in credit rating of the issuer, as well as large decline in market price. Adverse changes should trigger additional effort to review the creditworthiness.

Managing Loan Problems

The institution should establish a system that helps to identify problem loan ahead of time when there may be more options available for remedial measures. Once the loan is identified as problem, it should be managed under a dedicated remedial process. A bank's loan risk policies should clearly set out how the bank will manage problem credits. Banks differ on the methods and organization they use to manage problem credits. Responsibility for such credits may be assigned to the originating business function, a specialized workout section or a combination of the two, depending upon the size and nature of the credit and the reason for its problems. When a bank has significant credit-related problems, it is important to segregate the workout function from the credit origination function. The additional resources, expertise and more concentrated focus of a specialized workout section normally improve collection

results. A problem loan management process encompass following basic elements (William, 1990):

- **Negotiation and follow-up**

Proactive effort should be taken in dealing with obligors to implement remedial plans, by maintaining frequent contact and internal records of follow-up actions. Often rigorous efforts made at an early stage prevent institutions from litigations and loan losses (William, 1990).

- **Workout Remedial Strategies**

Sometimes appropriate remedial strategies such as restructuring of loan facility, enhancement in credit limits or reduction in interest rates help improve obligor's repayment capacity. However it depends upon business condition, the nature of problems being faced and most importantly obligor's commitment and willingness to repay the loan. While such remedial strategies often bring up positive results, institutions need to exercise great caution in adopting such measures and ensure that such a policy must not encourage obligors to default intentionally. The institution's interest should be the primary consideration in case of such workout plans it needs not mention here that competent authority, before their implementation, should approve such workout plan (William, 1990).

- **Review of Collateral and Security Document**

Institutions have to ascertain the loan recoverable amount by updating the values of available collateral with formal valuation. Security documents should also be reviewed to ensure the completeness and enforceability of contracts and collateral guarantee (William, 1990).

- **Status Report and Review**

Problem of credits should be subject to more frequent review and monitoring. The review should update the status and development of the loan accounts and progress of the remedial plans. Progress made on problem loan should be reported to the senior management (William, 1990).

2.2 Theoretical Review

Theories of Credit Risk

In this section, reviewing the general theories of credit risk management can provide a clearer picture on how banks carry out their credit risk management, despite of the specific approaches that may differ among banks. The theories of credit risk management are as follows:

- **Commercial Loan Theory**

The oldest theory of banking is the commercial loan theory, also called the real bills doctrine. The commercial loan theory holds that banks should lend only on short term, self-liquidating, commercial paper. According to Hosna and Manzura, (2009), the commercial loan theory is geared to influence persuasively both the bank lending and the general economic activities. Strict adoption of this theory will reveal that it is expected to serve as a monetary supply to changes in aggregate economic activity.

- **Shiftability Theory**

This theory assumes that assets need not be tied on only self-liquidating bills, but also held in other shiftable open-market assets, such as government securities (Moti et al., 2012). It must be noted that the shiftability theory did not replace the commercial loan theory or made it to be invalid. Instead, the shiftability theory took a more general view of the banking business by broadening the list of assets deemed legitimate for bank ownership. The shiftability theory does not say that commercial loan are inappropriate bank assets, it does say that commercial loans are not the only appropriate asset. The thrust of the shiftability theory holds that the liquidity of a bank depends on its ability to shift its assets to someone else at a predictable price. Thus, for example, it would be quite acceptable for a bank to hold short-term open market investments in its portfolio of assets.

- **Anticipated Income Theory**

Out of a comprehensive study in 1949, Herbert and Prochnow formulated a new loan theory which he called “the Anticipated Income Theory”. According to Afriyie and Akotey, (2011), they found in their study that: In every instance, regardless of the nature and character of the borrower’s business, the bank planned liquidation of term loans

from anticipated earnings of the borrower. Liquidation is not by sales of assets of the borrower as in commercial or traditional theory of liquidity or by shifting the term loan to some other lenders as in the shiftability theory of liquidity but by anticipating income of the borrower. In effect, this theory assumes that banks should make loans on the basis of the anticipated income of the borrower and not on his present value.

- **Credit Risk Theory**

Credit risk according to Salas and Saurina, (2002) refers to the risk that a borrower will default on any type of debt by failing to make required payments. The risk is primarily that of the lender and includes lost principal and interest, disrupt loss may be complete or partial and can arise in a number of circumstances, such as an insolvent bank unable to return funds to a depositor. To reduce the lenders risk, the lender may perform a credit check on the prospective borrower, may require the borrower to take appropriate insurance, such as mortgage insurance or seek security or guarantees of third parties. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt (Owojori et al., 2011).

- **Liability Management Theory**

This theory holds that it is unnecessary to observe traditional standards since reserve money can be borrowed or obtained in the money market using short term debt instruments whenever a bank experiences reserve deficiency. According to Shafiq and Nasr, (2010), it does not mean that the bank manages only its liabilities and passive with respect to its assets. Rather, the theory continues to recognize that the asset structure of the bank has a prominent role to play in providing the bank with liquidity. But the theory takes a one dimensional approach to liquidity and argues that the bank can also use its liabilities for liquidity purposes. A bank wants liquidity for deposit withdrawal purposes and also to meet the reasonable loan requests of its customers. Not only are bank loans profitable but a bank that won't or can't make loans to its depositors when they need funds is not likely to keep those depositors for very long.

2.3 Empirical Review

This part includes review of previous studies that are relevant to the problem being explained and within the framework of the theory structure. It presents a summary of major findings of previous researches, articles, journals, etc. It presents a summary of

major finding of previous researches being studies in separate readings. It explains why each literature was chosen for the critical review and how it helped to build the theoretical framework and identify problem statement. This study aims to analyze the loan management of commercial banks in Nepal. Various researchers have examined the impact of loans and credit risk management in varying dimensions. Among some of the recent studies i.e. research articles published in different journals and previous dissertations and thesis submitted for the academic purpose with the similar issues have been reviewed as below:

Venugopal (2024) examined the loan portfolio management and bank efficiency as a comparative analysis of public, old private, and new private sector banks in India. This comparative study analyzed the impact of loan portfolio composition on the efficiency of different types of banks in India public sector, old private, and new private banks in the period between 2013 and 2022. Efficiency was evaluated using data envelopment analysis (DEA). The study considered four loan variables term lending, working capital, priority sector lending, and secured lending in proportion to the overall loans as independent factors against the efficiency score as the dependent variable, using a random-effects generalized least squares (GLS) regression framework. The results indicate that there were no significant effects on the efficiency of old private banks, except for working capital, which had a marginally negative impact on bank efficiency. Working capital, priority sector lending, and term lending have been found to significantly impact the efficiency of new private banks. Only term and working capital loans significantly affected the efficiency of public sector banks.

Chhetri (2023) explored the determinants of lending behavior of commercial banks in Nepal. This examined the determinants of lending behavior of commercial banks in Nepal. The study based on 14 commercial banks panel data for 2011/12 to 2020/21 over 10 year period. The study employed descriptive and causal comparative research design. The study used descriptive analysis, which included mean, minimum, maximum and Standard deviation. The determinants of lending behavior made by commercial banks in Nepal will be determined by using a fixed effect regression model. The finding of the study concluded that bank size, capital adequacy ratio, total deposit, have a positive and statistically significant effect on loan and advances. Likewise, Liquidity ratio, lending rate and inflation have a negative and statistically significant

effect on Loan and advances. However the effect of gross domestic product has a negative and statistically insignificant effect on Loan and advances. The study suggested that commercial banks in Nepal should manage their lending by paying more attention to internal factor under management's control over in line with the rules and regulations of the banking sector while keeping in mind the impact of the overall economic dynamic.

Areghan (2023) conducted a comparative analysis on loan management and performance of deposit money banks in Nigeria. This study investigated how loan management impact on performance of Deposit Money Banks in Nigeria covering the period 2000 -2021 with special emphasis on First Bank, Access Bank, and United Bank for Africa. The model in the study used secondary data obtained from annual report and accounts of the selected banks for the period under study to determine the effect of loan management (through Loans and Advances and Non-performing loans of banks) on performance of the selected banks (through Return on Asset). The Data were analyzed using ratio analysis and Ordinary least square method. This paper carried out stationarity test of the variables using Augmented Dickey-Fuller (ADF). The specific finding of the work is that return on asset has inverse relationship with non-performing loans while they are positively related to loans and advances. The conclusion is that there is a significant relationship between bank performance and loan management. The study then suggests that deposit money banks should set up an efficient structure for loan management.

Bhandari (2022) analyzed the loan and advance management of Nepal Bank Limited and Rastriya Banijya Bank. The main objective of this study was to assess and compare loan and advance management of Nepal Bank Limited and Rastriya Banijya Bank. The study used descriptive and analytical research design. Two banks out of total 27 commercial banks in Nepal were selected based on judgmental sampling. Quantitative data are collected from secondary sources of annual audited report. The collected data were classified, coded and analyzed with the help of statistical tools like percentage, mean, standard deviation, coefficient of correlation, and coefficient of determination using MS-Word, MS-Excel, and Statistical Package for Social Science. Both the banks utilized most of the deposits in the forms of loan and advance, loan and advances to total deposit ratio of both banks are inconsistent. On the basis of coefficient of variation,

NBL has more uniformity than RBB since NBL. Average loan loss provision to total loan ratio NBL is more than RBB and NBL provide huge amount for provision for loan losses. Therefore, NBL has not been able to earn a profit from the point of view of average. The relationship between loan and advance and loan loss provision of NBL and of RBB is statistically significant. It indicates that the RBB cannot manage loan and advance properly. RBB is better mobilizing of fund as loans and advances and it seems quite successful in generating high ratio than NBL.

Elemu (2021) examined credit management practices, loan repayment management and profitability of commercial banks' branches in Uganda. The purpose of the study was to establish the relationship between credit management practices and profitability; relationship between loan repayment management and profitability; mediating effect of loan repayment management on credit management practices and profitability; and examine the impact of credit management practices and loan repayment management on profitability. The study was a cross-sectional research and applied a quantitative approach. A sample of 234 commercial bank branches was used from a total of 573. The study obtained responses from 166 branches. Primary data was obtained from a branch manager and credit supervisor using a structured questionnaire. Validity of the questionnaire was obtained using CVI and reliability using Cronbach Alpha Coefficient. Data was analyzed using SPSS v.20 to obtain descriptive statistics, correlation and regression analyzes to present results. A Med-graph was used to test the mediation of loan repayment management. This study ascertained a positive relationship between credit management practices and profitability; and positive relationship between loan repayment management and profitability. The study further ascertained a partial mediation of loan repayment management in the relationship between credit management practices and profitability.

Nuhu (2021) analyzed the effect of loan management strategies on financial performance of commercial banks in Rwanda. The aim of this research study was to analyze the relationship between proper loan management strategies and its financial performance. The study examined the effect of loan management strategies on financial performance of selected commercial banks in Rwanda. The study adopted descriptive research design. Two sets of hypothesis were developed to address the research question. Inferential statistics were used to draw inferences from the data. Multiple

linear regression analysis was applied in the study to test the formulated hypotheses. The researcher concluded that there is a strong positive link between that loan management strategies and financial performance of selected commercial banks in Rwanda. The researcher concludes that if loan is well managed greatly and positively influences the financial performance of commercial banks. Researcher concludes that adequate loan management can increase the financial performance commercial banks while on other hand the poor or wrong loan management can lead to poor performance of commercial banks.

Owich and Mutswenje (2021) conducted a study on debt management and loan performance of commercial banks in Kenya. The key objective of the study was to evaluate the effect of debt management on loan performance of commercial banks. The data collected from the questionnaire was analyzed using IBM SPSS version 21.0 software. The analysis identified that commercial banks loan performance aligned with the effectiveness of credit management practices evident in the banks. The credit management practiced that entail character, capacity, capital, conditions, and collateral were less effective to loan performance than third party security. This study concluded that periodic loan review tent to be effective in loan performance as determined in the study with a positive significance level as well as the extent of loan collateral presence on loan performance.

Bhattarai (2020) examined bank lending determinants which is an evidence from Nepalese commercial banks. The purpose of the study to determine the commercial banks' lending in Nepal. The present study has been based the secondary data of ten commercial banks for the periods of 2012-2013 to 2016- 2017. The data were collected through the annual report of sample commercial banks and economic survey. The commercial banks were Nabil Bank, Siddhartha Bank, Himalayan Bank, Nepal SBI Bank, Agricultural Development Bank, Nepal Investment Bank, Standard Chartered Bank, Everest Bank, Nepal Bangladesh Bank and Laxmi Bank. The balance panel secondary data were used. The data has been analysis with help of Gretl statistics software. The loan and advance taken as dependent variables whereas liquidity, investment portfolio, cash reserve ratio, bank size, gross domestic products growth rate and inflation rate were independent variables. The result shows that investment portfolio, cash reserve ratio and bank size have positive and significant effects on loan

and advance. But the liquidity has negative and statically significant with loan and advance. The macroeconomic variables gross domestic products growth rate and inflation rate have not effective roles plays to determine the loan and advance. The concluded that liquidity, investment portfolio, cash reserve ratio and bank size were major determinants of loan and advance.

Adhikari and Jha (2020) conducted a study of Siddhartha bank limited and sunrise bank limited on lending practices of commercial banks in Nepal. The main objective of this study is to find out the trend of deposit, loans and advances, borrowings and net profits of SBL and SRBL for last five-year study period, to evaluate the product wise lending practices of SBL and SRBL and to analyze the lending practices of SBL and SRBL as per NRB. The secondary source was used while making the analysis and interview questions were made for the personnel of SBL and SRBL for recording the views of those personnel about the lending practices of their respective banks. In order to analyze the data of deposit, loans and advances, borrowings and investments of SBL and SRBL, SPSS tool was used which generates the various results of regression model for SBL and SRBL. In case of SBL by using the regression analysis it has been concluded that deposits and borrowings have the positive effect on the loans and advances whereas net profit/income has been affecting negatively on loans and advances. In case of SRBL, as per the regression analysis, there is positive effect of deposits, borrowings and investments on loans and advances and negative effect of net profit/income on loans and advances.

Berhe (2020) conducted a case study for selected commercial banks in Ethiopia exploring the determinants of commercial banks' lending behavior. The main objective of the study was to examine the determinants of commercial banks' lending behavior for selected commercial banks in Ethiopia. The study used a cross sectional explanatory research design. The study describes the determinants of commercial banks' lending behavior. Both qualitative and quantitative data were employed. The study used secondary data from the selected audited annual reports of the commercial banks as well as the yearly financial reports of National bank of Ethiopia from 2011 to 2017. The study utilized correlational and regression analysis to examine the relationship between the dependent (lending behavior) and independent variables (Interest Rate, Capital Adequacy Ratio, Liquidity Ratio, Asset Quality and Volume of Deposits) and

power of explanation of the independent variables for the dependent variable respectively. The correlation results suggest that there was linear relationship between Volumes of Deposit, Interest/Credit Rate, Liquidity Ratio, Asset Quality (AQ) and Capital Adequacy ratio (CAR) with lending behavior of the selected commercial banks.

Rakhimzhanova et al. (2020) researched on problem of loan management in the countries of the Eurasian Economic Union. The study discussed issues of managing problem loans in the countries of the Eurasian Economic Union. The main goal of the article was to solve problems for realizing the positive effects of easing the conditions of bank lending, identifying barriers and constraints. Data were analyzed using both descriptive and inferential methods of analysis. This study found the amount of overdue debt remains an urgent problem for all countries that had been considered in the article over the past few years. Both banks and government agencies were trying to solve it, and certain successes had already been achieved, but stability was still a long way off. This study concluded that the volume of loans issued by STBs in these countries decreased over the year.

Ahmadyan (2020) conducted a study measuring credit risk management and its impact on bank performance in Ira. The concept of credit risk management can be treated as the heart of any commercial banks. It plays the vital role in the performance of a financial institution as it analyzes credit worth ability of borrowers. Each loan without repayment decreases banks' profit and equity, which in turn may result in bank failure if the bank cannot pay off its liabilities. In this paper, according to existing theoretical and empirical literature, the suitable system was defined for measuring credit risk management. Then, the effect of credit risk management on the profitability and survival of banks in Iran was investigated. For this purpose, model was estimated using panel data method and the financial statements of banks for the period 2005- 2016. The results of the study showed that there was a significant relationship between risk management and profitability and bank survivability. The poor credit risk management reduces the profitability and survival of banks.

Risal and Poudel (2020) examined the role of credit risk in performance difference between A and B Class Banks in Nepal. The objective of the study is to evaluate the performance differences between A and B class financial institutions arising from credit

risk. The dynamic panel data from 2008 to 2019 has been considered from all 28 commercial banks and 11 national level development banks for analysis. Arellano Bond method has been performed to control the unobserved heterogeneity and to reduce biasness in the parameter estimation as they have both cross sectional and time dimensions. The results have shown clear differences in credit risk status between A class and B class bank with all the parameters except for Return on Assets (ROA). The results show that the impact of credit risk differs among various variables in Commercial and Development Banks. The study establishes a causal relationship between credit risk and performance of banks and with varying level of influence between A and B class of financial institutions.

Ndubuisi et al. (2020) conducted a study on loan management and financial performance of quoted deposit money banks in Nigeria. The objective of this study was to determine the relation between loan management and financial performance with a focus of deposit money banks evaluate on the floor of Nigerian stock exchange. The fifteen commercial banks were taken as the sample for this study for a period between 2010 to 2015. Nature of data retrieved was secondary and was retrieved from fact books, annual report and accounts of the listed deposit money banks in Nigeria. Statistical analysis for the purpose of analyzing data used were STATA 13, Pearson coefficient of correlation and multiple regression analysis. Variables identified as independent were nonperforming loan, deposits, dividend per share, variables identified as dependent were return on assets and return on equity whereas physical capacity and debt to equity ratio were taken as control variables. The result of this study revealed that there is a positive and statistically significant relationship between loan management (Proxied by Non-performing Loan & Deposit) and financial performance (ROA, EPS, DPS of quoted deposit money bank in Nigeria). This study recommended that management of deposit money banks in Nigeria should enhance their skills in credit analysis and loan management.

Al-hawatmah and Shaban (2020) examined the effect of lending policy on the profitability of commercial banks being evidence from Jordan. The purpose of the study is to find out the impact of the lending policies adopted by Jordanian commercial banks on their profitability. This study relied on the descriptive and analytical approach to describe and review the theoretical framework of the study. The preliminary

information was gathered through a questionnaire prepared for this purpose. The study population consisted of all the commercial banks operating in Jordan, numbering 13 banks during the period 2016-2020. The study concluded that the credit decisions in the Jordanian commercial banks are contributing to about 75.3% of their returns, and there is a statistically significant effect of lending policies (with their combined variables) on the profitability of commercial banks operating in Jordan. Also, the lending policies adopted by the Jordanian commercial banks have interpreted that the strict lending policy adopted by these banks have caused a low rate of profit, stating that a friendly lending policy will maximize demand and increases bank's profitability.

Al-Eitan and Bani-Khalid (2019) examined credit risk and financial performance of the Jordanian commercial banks using a panel data approach. This study examined the impact of credit risk (CR) on the financial performance of Jordanian commercial banks listed in Amman Stock Exchange. A panel data analysis of both fixed and random-effect models and GLS method are employed in this study to determine the impact of CR on performance of 16 Jordanian listed banks. The results showed that CR had a negative and significant impact on return on assets (ROA) and return on equity (ROE). Further, the results indicated that CR (measured by the ratio of doubtful debts to total loans, non-performing loans and loan losses to total loans) had a negative and significant impact on ROA, and ROE. While, the total deposits and bank size have positive and significant impact on financial performance of these Jordanian commercial banks. This study concluded that the impact of credit risk on performance was significant.

Poudel (2018) evaluated the impact of credit risk on profitability of commercial banks in Nepal. The main purpose of the study was to examine the impact of credit risk on profitability of the commercial banks in Nepal. Data were collected from the sample of 15 commercial banks operated in Nepali economy for the period of 2002/03 to 2014/15. Fixed Effect Model (FEM) of panel data analysis is used as a major tool of analysis. This study found that solvency ratio, interest spread rate, and inflation have the insignificant negative impact on profitability. In contrast, capital adequacy ratio, total assets, and GDP growth have the significant positive impact on profitability of commercial banks in Nepal. Finally, inter-bank interest rate has insignificant positive impact on profitability. The results concluded that credit risk has the significant

negative impact on profitability of commercial banks in Nepal.

Konovalova et al. (2018) examined the credit risk management in commercial banks. The article proposes a model of credit risk assessment on the basis of factor analysis of retail clients / borrowers in order to ensure predictive control of the level of risk posed by potential clients in commercial banks engaged in consumer lending. The aim of the study is to determine the level of risk represented by different groups (classes) of retail clients (borrowers) in order to reduce and prevent credit risk in the future as well as to improve the management of banking risks. The main results of the study are the creation of a model of borrowers' internal credit ratings and the development of the methods of improving credit risk management in commercial banks.

Mtaki and Ganesh (2016) analyzed the loan management and risk practices in banks. The objective of the study was to study banking loan practices and to explore challenges facing banks loans management, and to offer suggestions on loan management in banks. Four sets of hypothesis were developed to address the research question. The research is based on data from 10 commercial banks (5 public and 5 private banks) operating in Karnataka state in India, 150 bank employees in loan department filled in questionnaire. The questionnaires was structured in likert scale. The analysis was also done with the help of SPSS. The findings shows that there is mismanagement of loan practices in banks starting after receiving loans applications, screening and applicants, granting and doing follow up. The authors urged that, banks should go as far as checking the loan criteria combined together to ensure timely repayment and hence be able to manage risk.

Shrestha (2016) conducted a comparative study of loan management of Nabil bank and Everest bank. Sample selected for the study were Nabil bank ltd, and Everest bank ltd. Descriptive research design was employed for the study. Period of study was five years from 2011/12 to 2015/16. This paper report the comparative study of deposit, loan, ROA, ROE and CV. Two types of analysis were conducted, i.e. one is ratio analysis and other is statistical analysis. Both of the banks have utilized most of the funds in the form of credit and advances which is the major part of utilizing deposits for income generating purpose. On the average, both Nabil and Everest bank have utilized its total deposits constant in consecutive years. By coefficient variation analysis, Everest bank

has more uniformity than Nabil since Everest has less CV of 6.16%. It can be concluded that the higher mean ratio indicates the good lending performance. The high return good sign of company growth and it is always positive for investment in such company for investor.

The summary of the major articles and publications on this subject matter have been presented in the following table:-

Table 1

Summary of Empirical Review

Authors/ Date	Variables	Methodology	Findings
Venugopal (2024)	Term lending, working capital, priority sector lending, and secured lending have been identified as independent variables; whereas overall loans has been identified as dependent variables	Between 2013-2022, DEA analysis, GLS method, lending, working capital, priority sector lending, and secured lending as independent variable	There were no significant effects on the efficiency of old private banks, except for working capital, which had a marginally negative impact on bank efficiency
Chhetri (2023)	Bank size, capital adequacy ratio, total deposit, liquidity ratio, lending rate and inflation have been identified as independent variables; whereas loan and advances has been identified as dependent variables.	Descriptive and causal comparative research design , fixed effect regression model, 14 commercial banks panel data for 2011/12 to 2020/21	The finding of the study concluded that bank size, capital adequacy ratio, total deposit, have a positive and statistically significant effect on loan and advances
Areghan (2023)	Loans and advances and non-performing loans have been identified as independent variables; whereas return on assets has been identified as dependent variables.	Secondary data from annual reports from 2000-2021, four commercial banks as sample, Augmented Dickey-Fuller model was used,	The specific finding of the work is that return on asset has inverse relationship with non-performing loans while they are positively related to loans and advances
Bhandari (2022)	Total deposit, loan loss provision, non-performing loan have been identified as	Descriptive and analytical research design, NBL and RBB	The relationship between loan and advance and loan loss provision of

	independent variables; whereas total loans and advances has been identified as dependent variables.	were sample of the study, secondary data from annual reports for ten years, ratio and statistical tools were used	NBL and of RBB is statistically significant
Elemu (2021)	Loan repayment management has been identified as independent variables; whereas profitability has been identified as dependent variables.	A cross-sectional research and applied a quantitative approach, descriptive statistics, 234 branches out of 573 branches were taken as sample, primary data, SPSS-20, statistical tools	This study ascertained a positive relationship between credit management practices and profitability; and positive relationship between loan repayment management and profitability
Nuhu (2021)	Client appraisal and loan risk control have been identified as independent variables; whereas financial performance has been identified as dependent variables	Descriptive research design, inferential statistics, Multiple linear regression analysis	There is a strong positive link between that loan management strategies and financial performance of selected commercial banks in Rwanda.
Owich and Mutswenje (2021)	Credit risk assessment, periodic loan review, loan collateral and early warning signs have been identified as independent variables; whereas assets quality ratio has been identified as dependent variables	Descriptive and analytical research design, Primary data through questionnaire was collected, SPSS-21	Periodic loan review tent to be effective in loan performance as determined in the study with a positive significance level as well as the extent of loan collateral presence on loan performance
Bhattarai (2020)	Liquidity, investment portfolio, cash reserve ratio, bank size, gross domestic products growth rate and inflation rate have been identified as independent variables; whereas loan and advances has been identified as dependent variables.	Secondary data of ten commercial banks for the periods of 2012-2013 to 2016- 2017 through annual reports, balance panel secondary data were used	Investment portfolio, cash reserve ratio and bank size have positive and significant effects on loan and advance

Adhikari and Jha (2020)	Deposit, loans and advances, borrowings and investments have been identified as independent variables; whereas lending behaviour has been identified as dependent variables	Secondary data of two commercial banks for five years were taken from annual reports, SPSS was used	There is positive effect of deposits, borrowings and investments on loans and advances and negative effect of net profit/income on loans and advances.
Berhe (2020)	Interest rate, capital adequacy ratio, liquidity ratio, asset quality and volume of deposits have been identified as independent variables; whereas lending behaviour has been identified as dependent variables	Cross sectional explanatory research design was employed, qualitative and quantitative data were employed, secondary data for 2011 to 2017 was used	There was linear relationship between Volumes of Deposit, Interest/Credit Rate, Liquidity Ratio, Asset Quality (AQ) and Capital Adequacy ratio (CAR) with lending behavior of the selected commercial banks
Rakhimzhano va et al. (2020)	Non-performing loan ratios, loan approval rates, economic conditions, regulatory frameworks have been identified as independent variables; whereas loan management effectiveness has been identified as dependent variables	Descriptive and inferential methods of analysis were used	This study found the amount of overdue debt remains an urgent problem for all countries that had been considered in the article over the past few years
Ahmadyan (2020)	Total assets, non-performing loans, loan losses, loan loss reserves, total deposits have been identified as independent variables; whereas total loans has been identified as dependent variables	Panel data method and the financial statements of banks for the period 2005- 2016 were analyzed	There was a significant relationship between risk management and profitability and bank survivability
Risal and Poudel (2020)	Credit to deposit ratio, loan loss provision to total loan and advances gross domestic product have been	Dynamic panel data from 2008 to 2019 has been considered from all 28 commercial banks and 11	The results show that the impact of credit risk differs among variables in

	identified as independent variables; whereas ROA and ROE has been identified as dependent variables	national level development banks, Arellano Bond method	Commercial and Development Banks
Ndubuisi et al. (2020)	Non-performing loan and deposit has been identified as independent variables; whereas ROA, ROE and DPS have been identified as dependent variables	Secondary data from 2010 to 2015 of fifteen commercial banks were analyzed using STATA 13 on correlation and regression	There is a positive and statistically significant relationship between loan management (Proxied by Non Performing Loan & Deposit) and financial performance (ROA, EPS, DPS) of quoted deposit money bank in Nigeria).
Al-hawatmah and Shaban (2020)	Central bank policies, the volume of deposits, guarantees, interest rate, monitoring and follow up have been identified as independent variables; whereas profitability of banks has been identified as dependent variables	Descriptive and analytical design, primary data through questionnaire from 13 commercial banks in Jordan during 2016-2020	The study concluded that the credit decisions in the Jordanian commercial banks have statistically significant effect of lending policies on the profitability of commercial banks operating in Jordan
Al-Eitan and Bani-Khalid (2019)	Ratio of doubtful debts to total loans, non-performing loans and loan losses to total loans have been identified as independent variables; whereas ROA and ROE has been identified as dependent variables	Panel data analysis of both fixed and random-effect models and GLS method are employed, 16 commercial banks were taken as sample	The results showed that CR had a negative and significant impact on return on assets (ROA) and return on equity (ROE)
Poudel (2018)	Solvency ratio, interest spread rate, inflation, capital adequacy ratio, total assets, and GDP growth have been identified as independent variables; whereas ROA and ROE has	Fixed Effect Model (FEM) of panel data analysis is used, secondary data from 15 commercial banks for a period of 2002/03 to 2014/15 was collected	This study found that solvency ratio, interest spread rate, and inflation have the insignificant negative impact on profitability

	been identified as dependent variables		
Konovalova et al. (2018)	Loan amount, loan term, earnings have been identified as independent variables; whereas value of credit risk has been identified as dependent variables	Various factors influencing credit risk, including the economic environment, regulatory frameworks, and internal bank policies were examined	The main results of the study are the creation of a model of borrowers' internal credit ratings and the development of the methods of improving credit risk management in commercial banks
Mtaki and Ganesh (2016)	Bank effective screening, bank diversification of loan exposure, loan monitoring have been identified as independent variables; whereas loan management challenging has been identified as dependent variables	Based on data from 10 commercial banks operating in Karnataka state in India, 150 bank employees in loan department filled in questionnaire structured in likert scale employing SPSS.	The findings shows that there is mismanagement of loan practices in banks starting after receiving loans applications, screening and applicants, granting and doing follow up
Shrestha (2016)	Total loan to total deposit, loan loss provision, non-performing loan have been identified as independent variables; whereas ROA and ROE has been identified as dependent variables	Descriptive research design, secondary data from 2011/12 to 2015/16 of Nabil and EBL were analyzed using SPSS	It was concluded that the higher mean ratio indicates the good lending performance

2.4 Research Gap

While extensive research has been conducted on various aspects of banking performance, particularly focusing on profitability, risk management, and financial stability, there is a noticeable gap in studies specifically addressing the comprehensive impact of loan management practices on the financial performance of commercial banks in Nepal. Most existing literature primarily emphasizes the significance of individual factors such as the non-performing loan ratio or capital adequacy ratio in isolation. However, limited research explores the integrated influence of these factors along with macroeconomic variables like GDP growth rate and inflation on key performance indicators like Return on Assets (ROA) and Return on Equity (ROE).

Moreover, previous studies often focus on developed or larger emerging economies, where banking structures and economic conditions differ significantly from those in Nepal. The unique challenges faced by Nepalese commercial banks, including their response to economic fluctuations and regulatory environments, have not been adequately addressed. This gap highlights the need for a focused study that examines how loan management strategies, within the context of Nepal's specific economic and regulatory framework, influence the overall financial performance of banks. Addressing this gap will contribute to a more nuanced understanding of loan management practices and offer valuable insights for both academic research and practical banking strategies in Nepal.

CHAPTER III

RESEARCH METHODOLOGY

This chapter exclusively explains the research methodology that is employed in this study which is divided into five sections. Section one provides a description of research design, sections two presents the details of population and sample for this study, section three describes nature and sources of data, section four describes the method of collection of data that are used in this study and finally section five presents data analysis tools employed in this study.

3.1 Research design

This study has used a descriptive research design because it aims to systematically describe the relationships and trends between the independent variables and the dependent variables in the context of loan management in Nepalese commercial banks without influencing or manipulating the data. Descriptive research design allows researchers to explore and describe variables without manipulation, identifying patterns and relationships in real-world contexts. It provides insights into the current state of a phenomenon and serves as a foundation for future research (Creswell & Creswell, 2018). This study has used a causal comparative research design because it seeks to examine the cause-and-effect relationships between the independent variables and the dependent variables, by comparing pre-existing groups and analyzing how these variables influence the profitability of commercial banks in Nepal. Causal-comparative research design is used to explore cause-and-effect relationships by comparing different groups based on pre-existing conditions. It helps determine the impact of independent variables on dependent variables without direct manipulation, making it useful for understanding relationships where experimental control is not possible (Schenker & Rumrill, 2020). Thus, this study has employed descriptive and casual comparative research design to meet the objectives of the study. More specifically, the study analyzes the relationship between the credit management variables and return on equity and return on assets of sampled banks during the study period.

3.2 Population and sample, and sampling design

As on March, 2024 there are twenty “A” class commercial banks operating in Nepal which consist as the population for the study. Based on purposive sampling method,

Everest bank limited (EBL), Himalayan bank limited (HBL), Global IME bank limited (GBIME), NABIL bank limited (NABIL) and Rastriya Banijya bank (RBB) have been selected as the sample for this study and the selection is based on March, 2024. Here sample size represents the almost thirty one percent of the population based on size of loan disbursed during year 2022/23 which makes a representative sample size. (NRB, September-2023). Historical data for ten years i.e. from 2013/14 to 2022/23 has been taken as the sample for the study, consisting a total of fifty observations.

3.3 Nature and sources of data, and the instrument of data collection

The study is mainly based on secondary data. The secondary sources of data are the information received from reports, books, newspaper, journals etc. The major sources of secondary data are annual report of EBL, HBL, GBIME, NABIL and RBB bulletin and reports of concerned bank, materials published in newspapers and magazines, other related journals, periodicals, books and booklets and website of concerned banks. Various data obtained through different sources can't be used directly for the analysis in their original form. So, they will be rechecked, re-evaluated, edited and tabulated to bring them into appropriate form for the analysis purpose.

3.4 Method of Analysis

In this research work, descriptive and casual comparative model have been implied to get the meaningful result of the collected data and to meet the research objectives. This section deals with financial and statistical tools used for measuring the comparative financial analysis and to draw inferences on the study area. The collected data has been organized, tabulated, processed and analyzed by using various statistical and financial tools which are described as follows:

Financial Tools

To make rational interpretations, keeping with the objectives of the study, various analytical financial tools have been used in the study. The financial analysis tools are used to determine the performance of the banks within the limitations of loan management by the banks. Following key ratios are used to analyze the relevant components in terms of financial ratios:-

Non-performing Loan Ratio (NPLR)

This ratio determines the non-performing assets in the total loan and advances portfolio. Greater ratio implies the bad quality of loan of the bank. Hence lower non-performing assets to loans and advances ratio are preferable. As per international standard only 5% NPL is allowed but in the context of Nepal 10% NPL is acceptable. It is calculated by using the following model:

$$\text{Non-Performing Loan Ratio} = \frac{\text{Total non-performing loan}}{\text{Total loans and advances}} \times 100$$

Where,

Total Non-Performing loan (NPL) = Sub Standard Loan + Doubtful Loan + Bad Loan

Total Loan & Advances = Total Performing Loan + Total Non-Performing Loan

Capital Adequacy Ratio (CAR)

The ratio is important to every business firm. Similarly, commercial banks must evaluate this ratio. Capital is important for an organization to maintain every facility. Holding excess capital that required may have higher holding cost and low return from investment, similarly, holding too little capital may have inefficiency in paying liabilities of a firm. Capital adequacy ratio can be derived by applying following formula:

$$\text{Total Capital Adequacy Ratio} = \frac{\text{Total Capital}}{\text{Risk Weighted Assets}} \times 100$$

Where,

Total capital = Tier I capital + Tier II capital

Total risk weighted assets (RWA) = On Balance Sheet Risk Weighted Items + Off Balance Sheet Risk Weighted Items

The minimum percentage for CAR required by Nepal Rastra Bank is 10%.

TIER I CAPITAL = (paid up capital + statutory reserves + disclosed free reserves) - (equity investments in subsidiary + intangible assets + current and b/f losses).

TIER II CAPITAL = Undisclosed Reserves + General Loss reserves + hybrid debt capital instruments and subordinated debts where risk can either be weighted assets or the respective national regulator's minimum total capital requirement.

Gross Domestic Product Growth Rate (GDP)

The Gross Domestic Product (GDP) growth rate is a key economic indicator that measures the rate at which a country's economy is growing or shrinking over a specific period, typically a quarter or a year. It represents the percentage change in the value of all goods and services produced in an economy from one period to another, adjusted for inflation to reflect real growth. A positive GDP growth rate indicates economic expansion, suggesting increased production, employment, and income, while a negative rate signals a contraction in economic activity. Monitoring GDP growth is crucial for policymakers, businesses, and investors as it provides insights into the overall economic health and helps guide decisions regarding monetary policy, investment, and fiscal measures.

It is calculated by using the following model:

$$\text{GDP growth Rate} = \frac{\text{GDP}_{\text{current}} - \text{GDP}_{\text{previous}}}{\text{GDP}_{\text{previous}}} \times 100$$

Where,

$\text{GDP}_{\text{current}}$ = GDP for the current period

$\text{GDP}_{\text{previous}}$ = GDP for the previous period

Size of the Bank (SZ)

Size of the bank is a natural logarithm of total assets. In this study, size has been taken as bank specific internal independent variable as it influence the performance of the finance companies. In the study it has been concluded conclude that a large size of companies reduces costs due to economies of scale that this entails, large finance companies can also raise capital at a lower cost. It is calculated by using the following model:

Natural logarithm of the value of total assets is taken as size of the bank for this study.

Inflation Rate (INF)

According to the recent theory of information asymmetry in the credit market an increase in the rate of inflation drives down the real rate of return not just on money, but on assets in general (Athanasoglou et al., 2008). The implied reduction in real returns exacerbates credit market frictions. Since these market frictions lead to the rationing of credit, credit rationing becomes more severe as inflation rises. As a result, the financial sector makes fewer loans, resource allocation is less efficient, and intermediary activity diminishes with adverse implications for capital/long term investment. The inflation rate can be calculated as the percentage change in the CPI from one period to the next. It is calculated by using the following model:

$$\text{Inflation Rate} = \frac{\text{CPI}_{\text{current}} - \text{CPI}_{\text{previous}}}{\text{CPI}_{\text{previous}}} \times 100$$

Where,

$\text{CPI}_{\text{current}}$ = Consumer price index for the current period

$\text{CPI}_{\text{previous}}$ = Consumer price index for the previous period

Return on Assets (ROA)

This ratio is related to net profit after tax (NPAT) and total assets. How efficiently are the assets of a firm able to generate more profit are measured by this ratio is calculated by dividing NPAT by Total Assets. This ratio provides the foundation necessary for a company to deliver a good return on equity. It is calculated by using the following model:

$$\text{Return on Assets} = \frac{\text{Net Income After Tax}}{\text{Total Assets}} \times 100$$

Return on Equity (ROE)

Ratio of Return on Equity (ROE) is an internal performance measure of shareholder value, and it is by far the most popular tool. Return on equity is the return to shareholders on their equity. Return on equity can be described as a measures a

corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. The amount of net income returned as a percentage of shareholders equity. Net income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock). It is calculated by using the following model:

$$\text{Return on Equity} = \frac{\text{Net Income After Tax}}{\text{Shareholder's Equity}} \times 100$$

Statistical Tools

Mean

The arithmetic means or average is the sum of total values to the number of observations in the sample. It represents the entire data which lies almost between the two extremes. For this reason, an average is frequently referred to as a measure of central tendency. It is calculated as follows:

$$\text{Mean } (\bar{X}) = \frac{\sum X}{n}$$

Where,

\bar{X} = Arithmetic Mean return

$\sum x$ = Sum of given Observation

n = Total number of Observations

Standard Deviation

The standard deviation is the absolute measure of dispersion in which the drawback presents in other measure of dispersion as it satisfied most of the requisites of a good measure of dispersion. It indicates the ranges and size of deviance from the middle or mean. Dispersion measures the variation of the data from the central value. So, higher the value of standard deviation the higher the variability and vice versa. It is calculated as follows:

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

Where,

\bar{X} = arithmetic mean

X = given observation

N = total number of observations

Correlation Analysis

Out of several mathematical method of measuring the Karl Pearson correlation is popularity known as Pearson's Coefficient of Correlation widely used in practice to measure the degree of relationship between variables. This tool is used for measuring the intensity or the magnitude of linear relationship between series. It measures correlation coefficient between two variables X and Y is usually denoted by 'r' and can be obtained as:

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

Where,

n = Number of fiscal years in series X and Y

$\sum X$ = Sum of observation in series X

$\sum Y$ = Sum of observation in series Y

$\sum X^2$ = Sum of squared observation in series X

$\sum Y^2$ = Sum of squared observation n series Y

$\sum XY$ = Sum of the product of observations in series X and Y

Value of r lies between -1 and +1

r = 0 means that the variables are not correlated

r = -1 implies that there is a perfect negative correlation between the variables

r = +1 implies that there is a perfect positive correlation between the variables

Regression Analysis

Multiple linear regression attempts to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data. Every value of the independent variable x is associated with a value of the dependent variable y . On this regression analysis, banks' profitability variables (dependent) return on assets (ROA) and return on equity (ROE) will be tested for their relationship with explanatory variables. The linear regression model is used in this study to examine the financial performance of commercial bank. From the conceptual framework, the function of dependent variables (i.e. bank profitability) has been formulated as follows:

$$\text{Bank Profitability} = f(\text{NPLR}, \text{CAR}, \text{GDP}, \text{SZ}, \text{INF})$$

More specifically, the given model has been segmented into the following models:

Model 1

$$\text{ROA} = \alpha + \beta_1\text{NPLR} + \beta_2\text{CAR} + \beta_3\text{GDP} + \beta_4\text{SZ} + \beta_5\text{INF} + e$$

Model 2

$$\text{ROE} = \alpha + \beta_1\text{NPLR} + \beta_2\text{CAR} + \beta_3\text{GDP} + \beta_4\text{SZ} + \beta_5\text{INF} + e$$

Where,

ROA = Return on Assets (Dependent Variable)

ROE = Return on Equity (Dependent Variable)

NPLR = Non-performing loan ratio (Independent Variable).

CAR= Capital adequacy ratio (Independent Variable)

GDP = Gross domestic product growth (Independent Variable)

SZ = Size of bank (Independent Variable)

INF = Inflation rate (Independent Variable)

e = Error term

α is the constant term and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the beta coefficients of variables

3.5 Research Framework and Definition of the Variables

From the theoretical and empirical literature reviews, the following conceptual framework of the study has been developed.

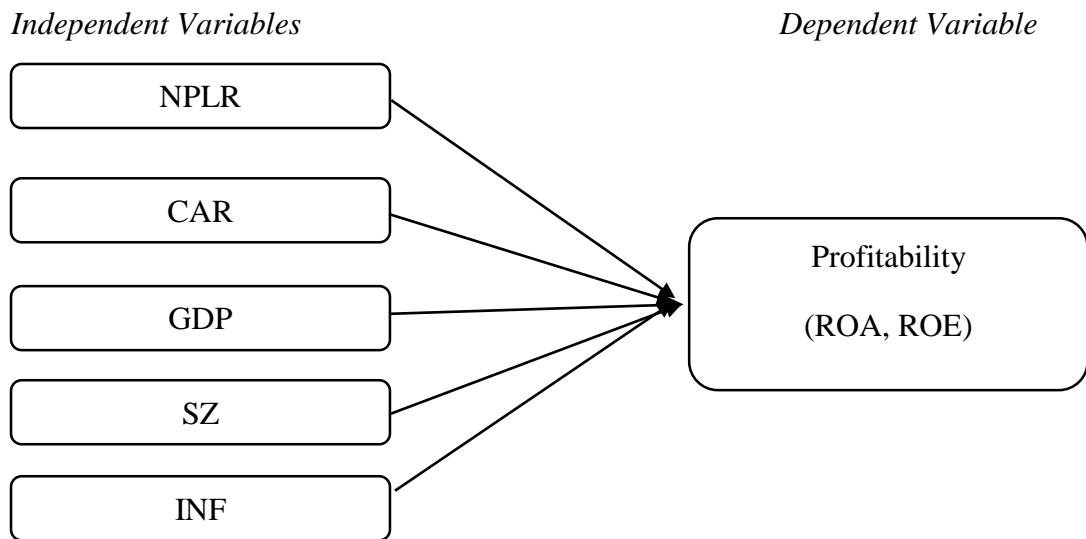


Figure 1: *Theoretical framework*

(Source: Adapted from Risal & Poudel, 2020)

Table 2

Definition of Variables

Variable	Legend	Measurement
Return on (Total) Assets	ROA	Net Profit After Tax/ Total Assets
Return on Equity	ROE	Net Profit After Tax/ Shareholders' Equity
Non-performing Loan Ratio	NPLR	{(Total non-performing loan/ Total loans & advances) *100
Capital Adequacy Ratio	CAR	Total Capital (T1+T2) /Total Risk Weighted Assets
Gross Domestic Product Growth Rate	GDP	Rate of change in annual GDP
Size of Bank	SZ	Natural logarithm of total assets
Inflation Rate	INF	Annual gross inflation rate

Return on Total Assets (ROA)

ROA is a financial ratio that gives the percentage of return (profit) that a company is producing in relation to its overall resources (total assets). The return on assets (ROA) is the net income for the year divided by total assets, usually the average value over the year. The ROA reflects the ability of a finance company's management to generate profits from the finance company's assets employed for the business. This is probably the most important single ratio in comparing the efficiency and operating performance of finance companies as it indicates the returns generated from the assets that finance company owns. It shows the efficient management at using assets to generate earnings. Siraj and Pillai (2012) found that the ratio of net income to total assets measures the return on total assets (ROA) after interest and taxes. This ratio is calculated as net profit after tax divided by the total assets.

Return on Equity (ROE)

Ratio of Return on Equity (ROE) is an internal performance measure of shareholder value, and it is by far the most popular tool. Return on equity is the return to shareholders on their equity. Siraj and Pillai (2012) describes that Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. The amount of net income returned as a percentage of shareholders equity. Net income is for the full fiscal year (before dividends paid to common stock holders but after dividends to preferred stock).

Non-performing Loan Ratio (NPL)

Among various indicators of credit risk and financial stability, non-performing loan ratio (NPLR) holds critical importance as an increase in NPLR is regarded as the failure of credit policy in finance companies, a reduction in finance company's earnings and a major reason for the financial crisis (Saba et al., 2012). It is also viewed a measure of how finance companies manage their credit assessment as NPLR indicates the proportion of nonperforming loan to total loan portfolio. A nonperforming loan is often characterized as late payment rather than default loan if the borrower is still undertaking the loan.

Capital Adequacy Ratio (CAR)

The capital adequacy ratio (CAR) is a measure of a finance company's capital. It is expressed as a percentage of a finance company's risk weighted credit exposures. Capital is one of the finance company specific factors that influence the level of finance company profitability. Capital is the amount of own fund available to support the finance companies' business and act as a buffer in case of adverse situation. In Nepalese context, Poudel (2012) found significant negative association between capital adequacy ratio and financial institution performance. Capital adequacy ratio is calculated dividing capital fund by total assets. As per the NRB guideline, commercial banks and finance companies in Nepal must maintain the capital adequacy ratio above 11 percent.

Gross Domestic Product Growth Rate (GDP)

The GDP is the measure of total economic activity within the economy of a country for the given year and it is widely used economic indicator. In this study we have employed the GDP growth rate as a measure of macroeconomic conditions. Growth rate of GDP is the rate of change in annual GDP. Gautam (2018) found that there was positive relationship of return on assets and gross domestic product. Shrestha (2014) found highly positive significant relationship between profitability and gross domestic product. Athanasoglou et al. (2008) found that a growth in GDP has a significant and positive effect on the profitability (ROA) of the banks. This means that it is expected that growth in GDP will have a positive influence on the profitability of commercial banks.

Size of the Bank (SZ)

Size of the bank is a natural logarithm of total assets. In this study, size has been taken as bank specific internal independent variable as it influence the performance of the finance companies. Kosmidou and Zopounidis (2006) found that the negative effect of size on performance. The authors point out that, the bigger the size of companies, the more difficult to manage it. In contrast, Masood and Ashraf (2012) had found a positive impact of size of the companies on performance. In the study it has been concluded conclude that a large size of companies reduces costs due to economies of scale that this entails, large finance companies can also raise capital at a lower cost.

Inflation Rate

According to the recent theory of information asymmetry in the credit market an increase in the rate of inflation drives down the real rate of return not just on money, but on assets in general (Athanasoglou et al., 2008). The implied reduction in real returns exacerbates credit market frictions. Since these market frictions lead to the rationing of credit, credit rationing becomes more severe as inflation rises. As a result, the financial sector makes fewer loans, resource allocation is less efficient, and intermediary activity diminishes with adverse implications for capital/long term investment. In turn, the amount of liquid or short term assets held by economic agents including finance companies rise with the rise in inflation (Dhungana & Pradhan, 2017). To proxy inflation the annual gross inflation rate was used.

CHAPTER IV

RESULTS AND DISCUSSION

The main objective of this study is to examine the current status of loan management in commercial banks in Nepal and the interrelationship among their variables, as the researcher described in the earlier chapters. As a result, there are three sections in this chapter, which deals with the findings' analysis and results. The first section portrays the descriptive analysis like ratio analysis, mean and standard deviation whereas the second section presents inferential analysis such as correlation analysis and regression analysis based on multiple linear regression models, and finally the third section i.e. discussion part explores the result that has been derived from such analysis. The third chapter of the paper describes how to carry out the analysis to get the designated results. Based on the formulas and models that were given in the previous chapter, this chapter seeks to introduce the mechanics of data analysis and interpretation. For further statistical analysis, the ratio of the stated dependent and independent variables has been determined using the data analysis techniques used for ratio scale measurement. The statistical software SPSS has been used to analyze the data that has been collected.

4.1 Results

Results of Descriptive Analysis

A descriptive analysis is a form of summary statistics that quantifies or summarizes the characteristics of a set of data. In this study, the mean is calculated as a measure for central tendency, and the standard deviation serves as a measure of the variability among the different research variables, including those related to the study, like non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm, inflation rate, return on assets and return on equity. Ratio analysis, which incorporates techniques for computing and analyzing financial ratios in order to evaluate the firm's performance and condition, is the most frequently used instrument for financial analysis. The firm's revenue and expense statement and balance sheet for the analyzed periods serve as the fundamental inputs for ratio analysis. The descriptive statistics of the variables used in the study have been presented in table 3. The result shows that the minimum and maximum of performance measure in terms of profitability indicators ROE and ROA along with other independent variables of commercial banks

in Nepal.

Table 3
Descriptive Statistics of Variables of Sample Banks

Variables	Minimum	Maximum	Mean	Std. Dev.
Non-performing loan ratio (NPLR)	0.98	2.88	1.77	0.76436
Capital adequacy ratio (CAR)	10.11	13.63	12.32	0.98920
GDP growth rate (GDP)	0.40	7.50	4.8990	2.19764
Size of bank (SZ)	18.21	19.77	18.95	0.50606
Inflation rate (INF)	3.60	9.94	6.45	2.23321
Return on assets (ROA)	1.07	2.01	1.63	0.34071
Return on equity (ROE)	9.51	25.62	17.32	5.28134

(Source: Appendix II – SPSS data)

Table 3 shows the descriptive statistics generated from ten years' annual data of the commercial banks operating in Nepal. The descriptive statistics for the non-performing loan ratio (NPLR) in the sampled banks show a minimum value of 0.95%, a maximum of 2.88%, with a mean of 1.77% and a standard deviation of 0.76%. The mean NPL ratio of 1.77% is higher than the industry average of 1.36% in FY 2021/22, but it is close to the average of 1.74% in FY 2020/21, indicating a relatively consistent trend in the loan performance of the banks in the sample. The standard deviation of 0.76% reflects moderate variation in NPL ratios across the banks, suggesting differing loan quality management practices within the sector. The NPL ratio is a critical indicator of the health of a bank's loan portfolio, with higher values potentially pointing to increased credit risk. In the Nepalese banking context, the relatively higher average NPL ratio compared to the industry average suggests that the sampled banks may be facing challenges in managing loan defaults, which could affect their profitability and capital adequacy, ultimately influencing their overall financial stability.

The descriptive statistics for the capital adequacy ratio (CAR) in the sampled commercial banks show a minimum value of 10.11%, a maximum of 13.63%, with a

mean of 12.32% and a standard deviation of 0.98%. The average CAR of 12.32% indicates that, on average, the banks in the sample maintain a healthy buffer of capital to absorb potential losses and comply with regulatory requirements. In the Nepalese banking context, where the regulatory minimum CAR is 10% (NRB, 2020), the mean value suggests that these banks are operating well above the minimum threshold, which is a positive indicator of financial stability. The relatively low standard deviation of 0.98% points to consistency in maintaining capital adequacy across the banks, reducing the likelihood of sudden fluctuations in capital levels. A higher CAR is generally considered a sign of a bank's ability to withstand financial stress, which is particularly important in managing loan portfolios and mitigating risks, such as non-performing loans.

The descriptive analysis of the GDP growth rate (GDP) in Nepal over the study period shows a minimum value of 0.40% and a maximum of 7.50%, with an average (mean) GDP growth rate of 4.89% and a standard deviation of 2.19. This indicates that, while Nepal experienced periods of strong economic growth reaching as high as 7.5%, it also faced years of slower growth, as low as 0.4%, likely influenced by external economic shocks, political instability, and other domestic factors. The mean GDP growth rate of 4.89% reflects moderate economic expansion over the period, aligning with the country's developing economy status. The relatively high standard deviation suggests significant fluctuations in annual growth, highlighting the volatility of Nepal's economic environment, which may impact the banking sector's loan management practices and overall financial stability.

The descriptive statistics for the size of the bank (SZ), measured as the natural logarithm of total assets, reveal a minimum value of 18.21 and a maximum of 19.77, with a mean of 18.95 and a standard deviation of 0.50. This range indicates a moderate variation in the asset size among the sampled commercial banks in Nepal. The average bank size (18.95) suggests a consistent asset base within the Nepalese banking sector, while the relatively low standard deviation of 0.50 signifies that most banks operate within a close range of asset size. This homogeneity could be reflective of Nepal's banking sector structure, where a few dominant commercial banks hold a significant share of assets. The consistency in bank size could influence loan management practices, as larger asset bases typically allow for greater diversification and risk

absorption, which can impact profitability indicators such as ROA and ROE.

The descriptive statistics for the inflation rate (INF) in Nepal during the study period show a minimum value of 3.60%, a maximum of 9.94%, with an average (mean) inflation rate of 6.45% and a standard deviation of 2.23. This suggests that inflation in Nepal has experienced some degree of volatility over the past decade, with periods of relatively lower inflation (3.60%) and others with higher inflation (9.94%). The mean inflation rate of 6.45% indicates moderate inflationary pressure, which can influence the purchasing power of consumers and the cost of borrowing. The relatively high standard deviation of 2.23 highlights significant fluctuations in inflation, which may have affected the banking sector's ability to manage loan portfolios effectively, impacting both loan performance and profitability. In the Nepalese context, inflationary trends can have considerable implications on interest rates, consumer spending, and loan repayment behaviors, making it an important factor in loan management strategies.

The descriptive statistics for return on assets (ROA) in the sampled commercial banks show a minimum value of 1.07%, a maximum of 2.01%, with a mean of 1.63% and a standard deviation of 0.34%. The mean ROA of 1.63% indicates that, on average, the banks in the sample generate a modest return relative to their total assets. In the Nepalese banking context, where average ROA tends to be lower than in more developed economies due to factors like market competition and limited diversification opportunities, the mean value suggests reasonable profitability. The minimum ROA of 1.07% and maximum of 2.01% reflect some variation in banks' ability to generate returns from their assets, with certain banks performing at the lower end of the spectrum. The standard deviation of 0.34% indicates that this variation is relatively small, suggesting that the sampled banks exhibit somewhat consistent profitability in relation to their asset base. ROA is an important indicator of a bank's efficiency in utilizing its assets to generate profit, and the observed values suggest a moderate level of operational efficiency across the Nepalese banking sector.

The descriptive statistics for return on equity (ROE) in the sampled commercial banks show a minimum value of 9.51%, a maximum of 25.62%, with a mean of 17.32% and a standard deviation of 5.28%. The mean ROE of 17.32% indicates that, on average,

the banks in the sample generate a solid return on their equity, which is a key measure of profitability and efficiency for bank shareholders. In the Nepalese banking context, where ROE typically ranges between 10% and 20%, the mean value suggests healthy profitability for most banks in the sample. The minimum ROE of 9.51% and the maximum of 25.62% reflect significant variation, with some banks delivering much higher returns on equity than others. The relatively high standard deviation of 5.28% signals substantial variability in profitability among the banks, which may be attributed to factors such as differing management practices, risk-taking behaviors, or capital structures. Overall, the high ROE values are indicative of strong financial performance in Nepal's commercial banking sector, but the variability also highlights the diverse operational strategies across different banks.

Result of Inferential Analysis

Correlation Analysis

Out of several mathematical method of measuring correlations, Pearson's coefficient of correlation widely used in practice to measure the degree of relationship between variables. Each cell in the table shows the correlation between two corresponding variables. A correlation matrix is used as a way to summarize data. The coefficient is a statistical indicator of the strength of the relationship between the relative movements of two variables out of which at least one variable is the independent variable and at least one variable is dependent variable. This tool is used for measuring the intensity or the magnitude of linear relationship between series. This allows us a glance of which variables have correlation in which level of strength and significance.

Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship) and a correlation coefficient of zero, indicates that there is no linear relationship between the two variables. Correlation matrix has been presented as following in table.

In this study, since loan factor (NPLR, CAR, GDP, SZ and INF) are independent variables and profitability (ROA and ROE) are the dependent variables, we will try to find whether the changes in the indicator of loan factor affects the profitability or not. If yes, then what is the degree of impact of these variables over profitability?

Table 4

Pearson's Correlation Coefficients of Study Variables

	NPLR	CAR	GDP	SZ	INF	ROA	ROE
NPLR	1						
CAR	-.667 (.035)	1					
GDP	-0.046 (.900)	0.235 (.513)	1				
SZ	-0.269 (.452)	.652 (.041)	-0.067 (.855)	1			
INF	.657 (.039)	-.769 (.009)	-0.532 (.113)	-0.37 (.293)	1		
ROA	-0.017 (.963)	-0.204 (.572)	0.391 (.264)	-.839 (.002)	-0.033 (.927)	1	
ROE	0.258 (.472)	-0.523 (.121)	0.109 (.765)	-.938 (.000)	0.383 (.275)	.846 (.002)	1

(Figures in parenthesis are p-values)

(Source: Appendix III – SPSS data)

Table 4 gives a clear picture of correlation like non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm, inflation rate, return on assets and return on equity, since the correlation coefficient among each and every variables have been plotted in the table. Return on assets and return on equity as dependent variables being an indicator of profitability of banks and non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate, being the indicator of loan factors, altogether have been plotted in the table. This matrix shows the correlation coefficient between each of these variables.

From the table 4, It has been observed that correlation coefficient between ROA and indicators of loan factor i.e. NPLR, CAR, GDP,, SZ and INF as -0.017, -0.204, 0.391, -0.839 and -0.033 respectively and p-values as 0.963, 0.572, 0.264, 0.002 and 0.927 respectively at 5 percent (2-tailed) level of significance.

Hence, ROA is negatively associated with non-performing loan ratio ($r = -0.017$, $p = 0.963 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant negative

changes in the dependent variable (ROA). This means that the ratios increase, ROA will decrease and vice versa.

Similarly, ROA is negatively associated with capital adequacy ($r = -0.204$, $p = 0.572 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant negative changes in the dependent variable (ROA). This means that the ratios increase, ROA also will decrease and vice versa.

Whereas ROA is positively associated with GDP growth rate ($r = 0.391$, $p = 0.264 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant positive changes in the dependent variable (ROA). This means that the ratios increase, ROA will also increase and vice versa.

Further ROA is negatively associated with size of the bank ($r = -0.839$, $p = 0.002 < 0.05$) and the relationship is statistically significant based on p value. This means that a change in independent variable will cause a significant negative changes in the dependent variable (ROA). This means that the ratios increase, ROA will decrease and vice versa.

Similarly ROA is negatively associated with inflation rate ($r = -0.033$, $p = 0.927 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant negative changes in the dependent variable (ROA). This means that the ratios increase, ROA will decrease and vice versa.

Moreover, It has been observed that correlation coefficient between ROE and indicators of loan factor i.e. NPLR, CAR, GDP, SZ and INF as 0.258, -0.523, 0.109, -0.938 and 0.383 respectively and p-values as 0.472, 0.121, 0.765, 0.000 and 0.275 respectively at 5 percent (2-tailed) level of significance.

Hence, ROE is positively associated with non-performing loan ratio ($r = 0.258$, $p = 0.472 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant positive

changes in the dependent variable (ROE). This means that the ratios increase, ROE will also increase and vice versa.

Whereas, ROE is negatively associated with capital adequacy ($r = -0.523$, $p = 0.121 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant negative changes in the dependent variable (ROE). This means that the ratios increase, ROE will decrease and vice versa.

Whereas ROE is positively associated with GDP growth rate ($r = 0.109$, $p = 0.765 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant positive changes in the dependent variable (ROE). This means that the ratios increase, ROE will also increase and vice versa.

Further ROE is negatively associated with size of the bank ($r = -0.938$, $p = 0.000 < 0.05$) and the relationship is statistically significant based on p value. This means that a change in independent variable will cause a significant negative changes in the dependent variable (ROE). This means that the ratios increase, ROE will decrease and vice versa.

On the other hand ROE is positively associated with inflation rate ($r = 0.383$, $p = 0.275 > 0.05$) and the relationship is statistically insignificant based on p value. This means that a change in independent variable will cause an insignificant positive changes in the dependent variable (ROE). This means that the ratios increase, ROE also will increase and vice versa.

Regression Analysis

Multiple linear regression attempts to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data. Every value of the independent variable x is associated with a value of the dependent variable y . On this regression analysis, banks' profitability variables (dependent) return on assets (ROA) and return on equity (ROE) will be tested for their relationship with explanatory variables.

The linear regression model is used in this study to examine the financial performance of commercial banks. From the conceptual framework, the function of dependent variables (i.e. bank profitability) has been formulated as follows:

$$\text{Bank Profitability} = f(\text{NPLR}, \text{CAR}, \text{GDP}, \text{SZ}, \text{INF})$$

More specifically, the given model has been segmented into the following models, i.e. regression equation of Y (Bank profitability) on CAR, CDR and NPLR:

Model 1

$$\text{ROA} = \alpha + \beta_1\text{NPLR} + \beta_2\text{CAR} + \beta_3\text{GDP} + \beta_4\text{SZ} + \beta_5\text{INF} + e \dots \text{Eqn. (I)}$$

Table 5

Model summary of regression analysis on ROA

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.972 ^a	.945	.875	.12023

a. Predictors: (Constant). NPLR, CAR, GDP, SZ, INF
(Source: Appendix IV - SPSS Data)

Table 5 shows the R-statistic, R-squared statistic and the adjusted R-squared statistics of the model. The coefficient of R-squared (multiple regression) is a summary measure that tells how well the sample regression line fits the data. In other word, the R-squared statistic tells us the proportion of variance in the dependent variable that is accounted for by the independent variables. In this case, the model fits (accounts) for 94.5 percent of the variance in the dependent variable, i.e. return on assets. The adjusted R-squared is 87.5 percent indicating 87.5 percent of the variance is accounted for by the model. The result indicates that the changes in the independent variables explain 87.5 percent of the changes in the dependent variables. That is non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate explain 87.5 percent of the changes in return on assets. The remaining part of the changes is explained by other factors, which are not included in the model. The strength of variables relationship (multiple correlation coefficient) is based on the value of R-statistic which is 97.2 percent, indicated that there is a strong relationship between study variables. This implies that the return on assets is strongly influenced by its independent variables.

Table 6

Analysis of Variance (ANOVAa)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.987	5	.197	13.656	.013 ^b
	Residual	.058	4	.014		
	Total	1.045	9			

a. Dependent Variable: ROA

b. Predictors: (Constant), NPLR, CAR, GDP, SZ, INF

(Source: Appendix IV - SPSS Data)

An examination with ANOVA (F-value) explains the most possible combination of predictor variables that could contribute to the impact of dependent variables. Results show significant impact of performance indicator (ROA). On the F- values of 13.656 ($p = 0.013 < 0.05$) for non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate as return on assets proxy, it clearly shows that there is a significant relationship between the dependent variable (ROA) and the independent variables (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate).

Table 7

Regression Coefficient analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	13.701	1.878		7.297	0.002		
NPLR	-0.002	0.086	-0.004	-0.019	0.985	0.369	2.707
CAR	0.201	0.088	0.584	2.281	0.085	0.211	4.739
GDP	0.037	0.026	0.236	1.393	0.236	0.481	2.078
SZ	-0.783	0.118	-1.163	-6.66	0.003	0.454	2.204
INF	0.017	0.039	0.114	0.448	0.677	0.215	4.659

a. Dependent Variable: ROA

(Source: Appendix IV - SPSS Data)

Regression results of non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate on ROA have been plotted in table 7. P-value (sig.)

indicates at what percentage or precession level of each variable is significant. Tolerance indicates the percent of variance in the independent variable that cannot be accounted for by the other independent variable while variance inflation factor (VIF) is the inverse of tolerance. Since the value of variance inflation factor (VIF) is less than 10 and tolerance value is higher than 0.1, there is no multicollinearity and that's why the regression model can be further analyzed and developed.

By substituting the value of α and β (from table 7) in model (I) above, we can derive a resulting regression model as follows:

$$\text{ROA} = 13.70 - .002\text{NPLR} + .201\text{CAR} + .037\text{GDP} - .783\text{SZ} + .017\text{INF} + e \dots \text{Eqn. (II)}$$

The results of regression shows that the non-performing loan ratio (NPLR) has a negative relationship with return on assets (ROA) indicated by a coefficient of -0.002. This means that remaining all of the other independent variables constant, one percent increases in non-performing loan ratio results 0.2 percent decrease in profitability. Further p-value of non-performing loan ratio is 0.985, which indicate that it is statistically insignificant at 5 percent level of significance. This means non-performing loan ratio has insignificant negative impact on return on assets within sample bank.

The results of regression shows that the capital adequacy ratio (CAR) has a positive relationship with return on assets (ROA) indicated by a coefficient of 0.201. This means that remaining all of the other independent variables constant, one percent increases in capital adequacy ratio results 20.1 percent increase in profitability. Further p-value of capital adequacy ratio is 0.085, which indicate that it is statistically insignificant at 5 percent level of significance. This means capital adequacy ratio has insignificant positive impact on return on assets within sample bank.

The results of regression further shows that the GDP growth rate (GDP) has a positive relationship with return on assets (ROA) indicated by a coefficient of 0.037. This means that remaining all of the other independent variables constant, one percent increases in GDP growth rate results 3.7 percent increase in profitability. Further p-value of GDP growth rate is 0.236, which indicate that it is statistically insignificant at 5 percent level of significance. This means GDP growth rate has insignificant positive impact on return on assets within sample bank.

Whereas, the results of regression shows that the size of bank (SZ) has a negative relationship with return on assets (ROA) indicated by a coefficient of -0.783. This means that remaining all of the other independent variables constant, one percent increases in size of bank results 78.3 percent decrease in profitability. Further p-value of size of bank is 0.003, which indicate that it is statistically significant at 5 percent level of significance. This means size of bank has significant negative impact on return on assets within sample bank.

Similarly, the results of regression further shows that the inflation rate (INF) has a positive relationship with return on assets (ROA) indicated by a coefficient of 0.017. This means that remaining all of the other independent variables constant, one percent increases in inflation rate results 1.7 percent increase in profitability. Further p-value of inflation rate is 0.677, which indicate that it is statistically insignificant at 5 percent level of significance. This means inflation rate has insignificant positive impact on return on assets within sample bank.

Results of Hypothesis Testing

Now, we check the hypothesis that we have already developed, as follows:

H1: The non-performing loan ratio has significant impact on profitability of sample banks.

H2: The capital adequacy ratio has significant impact on profitability of sample banks.

H3: The inflation has significant impact on profitability of sample banks.

H4: The GDP growth has significant impact on profitability of sample banks.

H5: The bank size has significant impact on profitability of sample banks in Nepal.

From the above test, the relationship between the indicators of loan factor (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate) and indicators of profitability (return on assets) has been either found positive or negative and the relation of individual p-values also showed a mixed result on significance of dependent variable with each of the independent variables. So, it has been tried to test it separately based on individual test values of each of the variables. For the purpose of better convenience, the hypothesis that already have been

developed and the result of the calculation and status of acceptance/ rejection and been plotted in the following table and has been explained hereafter.

Table 8

Summary of Hypothesis Testing

Variables Hypothesized	P-value	Result
Non-performing loan ratio (H ₁)	.985	Rejected
Capital adequacy ratio (H ₂)	.085	Rejected
GDP growth rate (H ₃)	.236	Rejected
Size of bank (H ₄)	.003	Accepted
Inflation rate (H ₅)	.677	Rejected

(Source: SPSS Output)

Since the P-value of Non-performing loan ratio (NPLR) shows a value more than 0.05 i.e. 0.985 which shows the association to be insignificant, the first hypothesis (H_1): The non-performing loan ratio has significant impact on profitability of sample banks, is rejected. On the other hand, P-value of Capital adequacy ratio (CAR) shows a value higher than 0.05 i.e. 0.085 which shows the association not to be significant, the second hypothesis (H_2): The capital adequacy ratio has significant impact on profitability of sample banks, is rejected. Further, P-value of GDP growth rate (GDP) shows a value more than 0.05 i.e. 0.236 which shows the association to be insignificant, the third hypothesis (H_3): The inflation has significant impact on profitability of sample banks, is rejected. Similarly, P-value of Size of bank (SZ) shows a value less than 0.05 i.e. 0.003 which shows the association to be significant, the fourth hypothesis (H_4): The GDP growth has significant impact on profitability of sample banks, is accepted. Whereas, P-value of Inflation rate (INF) shows a value higher than 0.05 i.e. 0.677 which shows the association not to be significant, the fifth hypothesis (H_2): The bank size has significant impact on profitability of sample banks in Nepal, is rejected.

Model 2

It has been used to test the relationship between independent variables and ROE:

$$\text{ROE} = \alpha + \beta_1\text{NPLR} + \beta_2\text{CAR} + \beta_3\text{GDP} + \beta_4\text{SZ} + \beta_5\text{INF} + e \dots \text{Eqn. (III)}$$

Table 9

Model summary of regression analysis on ROE

Model	R	R square	Adjusted R square	Std. Error of the Estimate
1	.972 ^a	.946	.878	1.84828

a. Predictors: (Constant), NPLR, CAR, GDP, SZ, INF

(Source: Appendix V - SPSS Data)

Table 9 shows the R-statistic, R-squared statistic and the adjusted R-squared statistics of the model. The coefficient of R-squared (multiple regression) is a summary measure that tells how well the sample regression line fits the data. In other word, the R-squared statistic tells us the proportion of variance in the dependent variable that is accounted for by the independent variables. In this case, the model fits (accounts) for 94.6 percent of the variance in the dependent variable, i.e. return on equity. The adjusted R-squared is 87.8 percent indicating 87.8 percent of the variance is accounted for by the model. The result indicates that the changes in the independent variables explain 87.8 percent of the changes in the dependent variables. That is non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate explain 87.8 percent of the changes in return on equity. The remaining part of the changes is explained by other factors, which are not included in the model. The strength of variables relationship (multiple correlation coefficient) is based on the value of R-statistic which is 97.2 percent, indicated that there is a strong relationship between study variables. This implies that the return on equity is strongly influenced by its independent variables.

Table 10

Analysis of Variance (ANOVAa)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	237.368	5	47.474	13.897	.012 ^b
	Residual	13.665	4	3.416		
	Total	251.033	9			

a. Dependent Variable: ROE

b. Predictors: (Constant), NPLR, CAR, GDP, SZ, INF

(Source: Appendix V - SPSS Data)

An examination with ANOVA (F-value) explains the most possible combination of predictor variables that could contribute to the impact of dependent variables. Results show significant impact of performance indicator (ROE). On the F- values of 13.897 ($p = 0.012 < 0.05$) for non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate as return on assets proxy, it clearly shows that there is a significant relationship between the dependent variable (ROE) and the independent variables (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate).

Table 11

Regression Coefficient analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	191.688	28.865		6.641	0.003		
NPLR	0.166	1.326	0.024	0.125	0.906	0.369	2.707
CAR	2.608	1.356	0.489	1.924	0.127	0.211	4.739
GDP	0.348	0.404	0.145	0.86	0.438	0.481	2.078
SZ	-11.339	1.807	-1.087	-6.274	0.003	0.454	2.204
INF	0.988	0.595	0.418	1.659	0.173	0.215	4.659

a. Dependent Variable: ROE

(Source: Appendix V - SPSS Data)

Regression results of non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate on ROE have been plotted in table 11. P-value (sig.) indicates at what percentage or precession level of each variable is significant. Tolerance indicates the percent of variance in the independent variable that cannot be accounted for by the other independent variable while variance inflation factor (VIF) is the inverse of tolerance. Since the value of variance inflation factor (VIF) is less than 10 and tolerance value is higher than 0.1, there is no multicollinearity and that's why the regression model can be further analyzed and developed.

By substituting the value of α and β (from table 11) in model (III) above, we can derive a resulting regression model as follows:

$$\text{ROE} = 191.68 + 0.166\text{NPLR} + 2.608\text{CAR} + 0.348\text{GDP} - 11.339\text{SZ} + 0.988\text{INF} + e \dots \text{Eqn. (IV)}$$

The results of regression shows that the non-performing loan ratio (NPLR) has a positive relationship with return on equity (ROE) indicated by a coefficient of 0.166. This means that remaining all of the other independent variables constant, one percent increases in non-performing loan ratio results 16.6 percent increase in profitability. Further p-value of non-performing loan ratio is 0.906, which indicate that it is statistically insignificant at 5 percent level of significance. This means non-performing loan ratio has insignificant positive impact on return on equity within sample bank.

The results of regression shows that the capital adequacy ratio (CAR) has a positive relationship with return on equity (ROE) indicated by a coefficient of 2.608. This means that remaining all of the other independent variables constant, one percent increases in capital adequacy ratio results 260.8 percent increase in profitability. Further p-value of capital adequacy ratio is 0.127, which indicate that it is statistically insignificant at 5 percent level of significance. This means capital adequacy ratio has insignificant positive impact on return on equity within sample bank.

The results of regression further shows that the GDP growth rate (GDP) has a positive relationship with return on equity (ROE) indicated by a coefficient of 0.348. This means that remaining all of the other independent variables constant, one percent increases in GDP growth rate results 34.8 percent increase in profitability. Further p-value of GDP growth rate is 0.428, which indicate that it is statistically insignificant at 5 percent level of significance. This means GDP growth rate has insignificant positive impact on return on equity within sample bank.

Whereas, the results of regression shows that the size of bank (SZ) has a negative relationship with return on equity (ROE) indicated by a coefficient of -11.339. This means that remaining all of the other independent variables constant, one percent increases in size of bank results 1133.9 percent decrease in profitability. Further p-value of size of bank is 0.003, which indicate that it is statistically significant at 5 percent level of significance. This means size of bank has significant negative impact

on return on equity within sample bank.

Similarly, the results of regression further shows that the inflation rate (INF) has a positive relationship with return on equity (ROE) indicated by a coefficient of 0.988. This means that remaining all of the other independent variables constant, one percent increases in inflation rate results 98.8 percent increase in profitability. Further p-value of inflation rate is 0.173, which indicate that it is statistically insignificant at 5 percent level of significance. This means inflation rate has insignificant positive impact on return on equity within sample bank.

Results of Hypothesis Testing

Now, we check the hypothesis that we have already developed, as follows:

H1: The non-performing loan ratio has significant impact on profitability of sample banks.

H2: The capital adequacy ratio has significant impact on profitability of sample banks.

H3: The inflation has significant impact on profitability of sample banks.

H4: The GDP growth has significant impact on profitability of sample banks.

H5: The bank size has significant impact on profitability of sample banks in Nepal.

From the above test, the relationship between the indicators of loan factor (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate) and indicators of profitability (return on equity) has been either found positive or negative and the relation of individual p-values also showed a mixed result on significance of dependent variable with each of the independent variables. So, it has been tried to test it separately based on individual test values of each of the variables. For the purpose of better convenience, the hypothesis that already have been developed and the result of the calculation and status of acceptance/ rejection and been plotted in the following table and has been explained hereafter.

Table 12

Summary of Hypothesis Testing

Variables Hypothesized	P-value	Result
Non-performing loan ratio (H_1)	.906	Rejected
Capital adequacy ratio (H_2)	.127	Rejected
GDP growth rate (H_3)	.428	Rejected
Size of bank (H_4)	.003	Accepted
Inflation rate (H_5)	.173	Rejected

(Source: SPSS Output)

Since the P-value of Non-performing loan ratio (NPLR) shows a value more than 0.05 i.e. 0.906 which shows the association to be insignificant, the first hypothesis (H_1): The non-performing loan ratio has significant impact on profitability of sample banks, is rejected. On the other hand, P-value of Capital adequacy ratio (CAR) shows a value higher than 0.05 i.e. 0.127 which shows the association not to be significant, the second hypothesis (H_2): The capital adequacy ratio has significant impact on profitability of sample banks, is rejected. Further, P-value of GDP growth rate (GDP) shows a value more than 0.05 i.e. 0.428 which shows the association to be insignificant, the third hypothesis (H_3): The inflation has significant impact on profitability of sample banks, is rejected. Similarly, P-value of Size of bank (SZ) shows a value less than 0.05 i.e. 0.003 which shows the association to be significant, the fourth hypothesis (H_4): The GDP growth has significant impact on profitability of sample banks, is accepted. Whereas, P-value of Inflation rate (INF) shows a value higher than 0.05 i.e. 0.173 which shows the association not to be significant, the fifth hypothesis (H_2): The bank size has significant impact on profitability of sample banks in Nepal, is rejected.

4.2 Major Findings

The major findings of study are as follows:

From the descriptive statistics generated from the ten years' annual data of the sample commercial banks in Nepal, the mean NPL ratio of 1.77% which is higher than the industry average of 1.36% in FY 2021/22, but being close to the average of 1.74% in FY 2020/21, indicates a relatively consistent trend in the loan performance of the banks in the sample, and the standard deviation of 0.76% reflects moderate variation

in NPL ratios across the banks, suggesting differing loan quality management practices within the sector.

commercial banks are seen to have managed to maintain enough capital to protect themselves from insolvency with a minimum value of 10.11%, a maximum of 13.63%, with a mean of 12.32% and a standard deviation of 0.98%. The average CAR of 12.32% indicates that, on average, the banks in the sample maintain a healthy buffer of capital to absorb potential losses and comply with regulatory requirements where the regulatory minimum CAR is 10% (NRB, 2020). The relatively low standard deviation of 0.98% points to consistency in maintaining capital adequacy across the banks, reducing the likelihood of sudden fluctuations in capital levels.

The descriptive analysis of the GDP growth rate (GDP) in Nepal over the study period, shows a minimum value of 0.40% and a maximum of 7.50%, with an average (mean) GDP growth rate of 4.89% and a standard deviation of 2.19, indicates that, while Nepal experienced periods of strong economic growth reaching as high as 7.5%, it also faced years of slower growth, as low as 0.4%, likely influenced by external economic shocks, political instability, and other domestic factors. The mean GDP growth rate of 4.89% reflects moderate economic expansion over the period, aligning with the country's developing economy status, whereas the relatively high standard deviation (2.19) suggests significant fluctuations in annual growth.

The descriptive statistics for the size of the bank (SZ), a minimum value of 0.40% and a maximum of 7.50%, with an average (mean) GDP growth rate of 4.89% and a standard deviation of 2.19, indicates a moderate variation in the asset size among the sampled commercial banks in Nepal. The average bank size (18.95) suggests a consistent asset base within the Nepalese banking sector, while the relatively low standard deviation of 0.50 signifies that most banks operate within a close range of asset size. This homogeneity could be reflective of Nepal's banking sector structure, where a few dominant commercial banks hold a significant share of assets.

The descriptive statistics for the inflation rate (INF) in Nepal during the study period shows that the inflation in Nepal has experienced some degree of volatility over the past decade, with periods of relatively lower inflation (3.60%) and others with higher inflation (9.94%). The mean inflation rate of 6.45% indicates moderate inflationary

pressure, which can influence the purchasing power of consumers and the cost of borrowing. The relatively high standard deviation of 2.23 highlights significant fluctuations in inflation, which may have affected the banking sector's ability to manage loan portfolios effectively, impacting both loan performance and profitability.

As it can be seen from the above table, Nepalese commercial banks are able to make the most out of their assets. The average mean value of financial performance as measured by ROA during the study period was about 1.63% with the minimum 1.07% and the maximum 2.01%. Similarly, the standard deviation of ROA is 0.34.

In same line with ROA, ROE shows that the Nepalese commercial banks attained, on average, a good performance over the period of last ten years. Though there is a high fluctuation of the higher value and lower value of ROE of with a standard deviation of 9.10, sample commercial banks were able to maintain the minimum value of 9.51% and maximum 25.62% while the mean return was 17.32%. This indicates that the commercial banks have been able to generate profits for their shareholders by utilizing their equity capital.

It has been observed that correlation coefficient between ROA and indicators of loan factor i.e. NPLR, CAR, GDP, SZ and INF as -0.017, -0.204, 0.391, -0.839 and -0.033 respectively and p-values as 0.963, 0.572, 0.264, 0.002 and 0.927 respectively at 5 percent (2-tailed) level of significance. Hence, ROA is insignificant positively associated with GDP growth rate; insignificant negatively associated with non-performing loan ratio, capital adequacy ratio and inflation rate; and significant negatively associated with size of bank. Moreover, it has been observed that correlation coefficient between ROE and indicators of loan factor i.e. NPLR, CAR, GDP, SZ and INF as 0.258, -0.523, 0.109, -0.938 and 0.383 respectively and p-values as 0.472, 0.121, 0.765, 0.000 and 0.275 respectively at 5 percent (2-tailed) level of significance. Hence, ROE is insignificant positively associated with non-performing loan ratio, GDP growth rate and inflation rate; insignificant negatively associated with capital adequacy ratio; and significant negatively associated with size of bank.

The result of regression based on model 1 indicated that unstandardized coefficient beta (β) for independent variables i.e. non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate are -0.002, 0.201, 0.037, -0.783

and 0.017 respectively, with P value (significance) of 0.985, 0.085, 0.236, 0.003 and 0.0677. While the result of ANOVA shows the F-values of 13.656 with p-value of 0.013 (significance). It has been found value of R-statistic 97.2 percent, value of R-squared 94.5 percent, value of adjusted R-squared is 87.5 percent and std. error of the estimate is 0.12023. Hence, ROA is insignificant positively associated with capital adequacy ratio, GDP growth rate and inflation rate; insignificant negatively associated with non-performing loan ratio; and significant negatively associated with size of bank.

Further, the result of regression based on model 2 indicted that unstandardized coefficient beta (β) for independent variables i.e. non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate are 0.166, 2.608, 0.348, -11.339 and 0.988 respectively, with P value (significance) of 0.906, 0.127, 0.438, 0.003 and 0.173. While the result of ANOVA shows the F-values of 13.897 with p-value of 0.012 (significance). It has been found value of R-statistic 97.2 percent, value of R-squared 94.6 percent, value of adjusted R-squared is 87.8 percent and std. error of the estimate is 1.84828. Hence, ROE is insignificant positively associated with non-performing loan ratio, capital adequacy ratio, GDP growth rate and inflation rate; and significant negatively associated with size of bank.

4.3 Discussions

Loan management is critical for commercial banks, as effective management can minimize NPLs and ensure a stable return on assets (ROA) and equity (ROE) (Kumar et al., 2023). Questions have been raised concerning how a loan management within the organization (Shrestha & Mishra, 2022) affect the profitability of a commercial bank. The effect of several loan variables on profitability has been examined in this research within a model that incorporates conceptual model. In Nepal, factors such as capital adequacy, GDP growth, inflation, and firm size all play pivotal roles in loan performance and overall bank health. In this study, we have conducted different types of descriptive and statistical tests to examine the impact of loan variables on financial performance in Nepalese commercial banks. In this section, we will individually discuss and interpret the results of these tests.

It has been observed the correlation coefficient (Pearson's) of ROA and ROE with the

indicators of NPA at 5 percent (2-tailed) level of significance. The result suggest that ROA is negatively associated with non-performing loan ratio and the relationship is statistically insignificant based on p value. This conclusion is in the line with Areghan (2023) and Poudel (2018). The result suggests that ROA is negatively associated with capital adequacy and the relationship is statistically insignificant based on p value. This conclusion is in the line with Berhe (2020) and is inconsistent with the findings of Chhetri (2023). Further, ROA is positively associated with GDP growth rate and the relationship is statistically insignificant based on p value. Further, ROA is negatively associated with size of bank and the relationship is statistically significant based on p value. This conclusion is in the line with Bhattarai (2020) conclusion and is inconsistent with the findings of Al Eitan and Bani Khalid (2019). Further, ROA is negatively associated with inflation rate and the relationship is statistically insignificant based on p value. On the other hand, the result suggest that ROE is positively associated with non-performing loan ratio and the relationship is statistically insignificant based on p value. This conclusion is in the line with Risal and Poudel (2020). The result further suggests that ROE is negatively associated with capital adequacy and the relationship is statistically insignificant based on p value. This conclusion is in the line with Singh et al. (2021). Further, ROE is positively associated with GDP growth rate and the relationship is statistically insignificant based on p value. Further, ROE is negatively associated with size of bank and the relationship is statistically significant based on p-value. This conclusion is in the line with Bhattarai (2020) conclusion. Further, ROE is positively associated with inflation rate and the relationship is statistically insignificant based on p value.

The results of regression model 1 indicated that non-performing loan has insignificant negative impact on return on assets within sample bank. This is consistent with the findings of Poudel (2018) and Risal and Poudel (2020). Whereas, capital adequacy ratio has insignificant positive impact on return on assets within sample bank. This conclusion is consistent with the findings of Chhetri (2023). Similarly GDP growth rate has insignificant positive impact on return on assets within sample bank. This conclusion is inconsistent with the findings of Shrestha (2016). Whereas, size of bank has significant negative impact on return on assets within sample bank. This conclusion is inconsistent with the findings of Chhetri (2023) and inconsistent with the findings of Al Eitan and Bani Khalid (2019). Further, inflation rate has

insignificant positive impact on return on assets within sample bank. The P-values from ANOVA table suggests that there is a significant relationship between the dependent variable (ROA) and the independent variables (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate). This findings are in line with the findings of Ahmadyan (2020), Ndubuisi et al. (2020), Elemu (2021) and Nuhu (2021) conclusion and is inconsistent with the findings of Al-hawatmah and Shaban (2020). Model summary of regression analysis on ROA implies that the ROA is strongly influenced by its independent variables.

The results of regression model 2 indicated that non-performing loan has insignificant positive impact on return on equity within sample bank. This is consistent with the findings of Risal & Poudel (2020). Whereas, capital adequacy ratio has insignificant positive impact on return on equity within sample bank. Similarly GDP growth rate has insignificant positive impact on return on equity within sample bank. Whereas, size of bank has significant negative impact on return on equity within sample bank. This conclusion is consistent with the findings of Bhattarai (2020). Further, inflation rate has insignificant positive impact on return on equity within sample bank. The P-values from ANOVA table suggests that there is a significant relationship between the dependent variable (ROE) and the independent variables (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate). This findings are in line with the findings of Elemu (2021) and Nuhu (2021) conclusion. Model summary of regression analysis on ROA implies that the ROA is strongly influenced by its independent variables.

CHAPTER V

SUMMARY AND CONCLUSION

The entire study is summarized in this chapter. The three sections that comprise this chapter are summary, conclusion, and implication. The summary is covered in the first part. The second one includes the key study findings, and the third one discusses the study's implications. This serves as a brief introduction to each study chapter as well as the general summary from the examination of pertinent material. The results of the data analysis, which was done using the SPSS software and a variety of financial and statistical tools, are shown in chapter iv of this report. The study's conclusions and recommendations are provided below, along with a summary of the findings.

5.1 Summary

The study had been undertaken to examine and evaluate the current status of loan management, and literally to examine the relationship between loan variables and profitability in Nepalese commercial banks. The main objectives of this study is to examine the relationship between loan variables (non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate) and profitability (ROA and ROE) of sample banks; and to analyze the effect of non-performing loan ratio, capital adequacy ratio, inflation rate, GDP and bank size on profitability of sample banks. This study has covered ten years data from 2013/14 to 2022/23 of sample banks. In this section, the researcher has tried to summarize the financial analysis of sample banks as well. Descriptive and casual comparative research designs have been employed to make the study more genuine and credible. Population for the study consists of twenty two commercial banks in Nepal, out of that five banks namely Everest bank limited (EBL), Himalayan bank limited (HBL), Global IME bank limited (GBIME), NABIL bank limited (NABIL) and Rastriya Banijya bank (RBB), have been selected as the sample for the study. Variables identified as independent are non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate, whereas variables identified as dependent are return on assets and return on equity. Five sets of hypothesis has been developed to address the research question. Study is mainly based on secondary data. The data relating to the risk weighted assets, tier 1 capital, tier 2 capital, non-performing loan, total loans and advances, net profit after tax, total assets, shareholders' equity have been obtained from the balance sheet and profit and loss account presented in annual reports of sample banks, and inflation

rate and GDP growth rate for the relevant years have been obtained from NRB and IMF reports of the relevant fiscal years. Supplementary data and information are collected from number of institutions and regulating authorities like Nepal Rastra Bank, college library and different other websites. The study has used different financial ratios namely non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate and statistical tools namely mean, standard deviation, correlation analysis, regression analysis for the study of the sample banks. The descriptive statistics generated from ten years' annual data of the sample banks shows the statistics presented hereinafter.

The descriptive statistics for the non-performing loan ratio (NPLR) in the sampled banks show a minimum value of 0.95%, a maximum of 2.88%, with a mean of 1.77% and a standard deviation of 0.76%. The result of capital adequacy ratio shows a minimum value of 10.11%, a maximum of 13.63%, with a mean of 12.32% and a standard deviation of 0.98%. The descriptive analysis of the GDP growth rate (GDP) in Nepal over the study period shows a minimum value of 0.40% and a maximum of 7.50%, with an average (mean) GDP growth rate of 4.89% and a standard deviation of 2.19. The descriptive statistics for the size of the bank (SZ), measured as the natural logarithm of total assets, reveal a minimum value of 18.21 and a maximum of 19.77, with a mean of 18.95 and a standard deviation of 0.50. The descriptive statistics for the inflation rate (INF) in Nepal during the study period show a minimum value of 3.60%, a maximum of 9.94%, with an average (mean) inflation rate of 6.45% and a standard deviation of 2.23. The descriptive statistics for return on assets (ROA) in the sampled commercial banks show a minimum value of 1.07%, a maximum of 2.01%, with a mean of 1.63% and a standard deviation of 0.34%. The descriptive statistics for return on equity (ROE) in the sampled commercial banks show a minimum value of 9.51%, a maximum of 25.62%, with a mean of 17.32% and a standard deviation of 5.28%.

It has been observed that correlation coefficient between ROA and indicators of loan factor i.e. NPLR, CAR, GDP, SZ and INF as -0.017, -0.204, 0.391, -0.839 and -0.033 respectively and p-values as 0.963, 0.572, 0.264, 0.002 and 0.927 respectively at 5 percent (2-tailed) level of significance. Moreover, it has been observed that correlation coefficient between ROE and indicators of loan factor i.e. NPLR, CAR, GDP, SZ and INF as 0.258, -0.523, 0.109, -0.938 and 0.383 respectively and p-values as 0.472,

0.121, 0.765, 0.000 and 0.275 respectively at 5 percent (2-tailed) level of significance. Let's have a look over result of regression analysis. Based on model 1 summary, it has been found value of R-statistic 97.2 percent, value of R-squared 94.5 percent, value of adjusted R-squared is 87.5 percent and std. error of the estimate is 0.12023. While the result of ANOVA shows the F-values of 13.656 with p-value of 0.013 (significance). When we check the regression coefficient, beta coefficient (constant) has been found to be 13.701. unstandardized coefficient beta (β) for independent variables i.e. non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate are -0.002, 0.201, 0.037, -0.783 and 0.017 respectively, with P value (significance) of 0.985, 0.085, 0.236, 0.003 and 0.0677. Further, based on model 2 summary, it has been found value of R-statistic 97.2 percent, value of R-squared 94.6 percent, value of adjusted R-squared is 87.8 percent and std. error of the estimate is 1.84828. While the result of ANOVA shows the F-values of 13.897 with p-value of 0.012 (significance). When we check the regression coefficient, beta coefficient (constant) has been found to be 191.688. Unstandardized coefficient beta (β) for independent variables i.e. non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate are 0.166, 2.608, 0.348, -11.339 and 0.988 respectively, with P value (significance) of 0.906, 0.127, 0.438, 0.003 and 0.173.

5.2 Conclusion

Effective loan management is crucial to the financial health of banks, especially in emerging markets where economic volatility can impact loan repayment and bank profitability. The findings indicate that factors such as capital adequacy, inflation, and GDP growth significantly influence loan performance, particularly non-performing loans (NPLs). Moreover, the study highlights the need for stricter risk management policies to mitigate the adverse effects of fluctuating economic conditions on banks' loan portfolios. These findings contribute to the growing body of literature on loan management and offer practical recommendations for improving risk management frameworks in Nepal's commercial banking sector. The research examined the above issues with respect to three commercial banks (EBL, HBL, GBIME, NABIL and RBB) in Nepal for a period of 2013/14 to 2022/23.

From the descriptive statistics, it has been found that the maximum, minimum and mean value of CAR shows that all of the sample banks have maintained a good levels of capital adequacy ratio and a low standard deviation points to consistency in

maintaining capital adequacy across the banks, reducing the likelihood of sudden fluctuations in capital levels. The descriptive result of non-performing loan ratio shows it is much higher than the industry average which doesn't seem to be satisfactory. The mean GDP growth rate reflects moderate economic expansion over the period, aligning with the country's developing economy status, whereas the relatively high standard deviation suggests significant fluctuations in annual growth. The homogeneity factor in size of bank could be reflective of Nepal's banking sector structure, where a few dominant commercial banks hold a significant share of assets with a consistent asset base. The mean inflation rate of 6.45% indicates moderate inflationary pressure, which can influence the purchasing power of consumers and the cost of borrowing. Regarding profit, it has been found that Nepalese commercial banks are able to make the most out of their assets and have been able to generate profits for their shareholders by utilizing their equity capital.

In conclusion, the study's findings on loan management in Nepalese commercial banks based on Karl Pearson's correlation coefficient reveal varying relationships between Return on Assets (ROA) and key loan indicators. The results show weak or insignificant correlations, particularly with NPLR, CAR, and INF, as indicated by their high p-values. However, the negative correlation between ROA and SZ at a significant level suggests that larger firms tend to have lower returns on assets, which could be indicative of inefficiencies in managing larger loan portfolios. The positive correlation with GDP implies that broader economic growth may contribute to better loan performance. Overall, while some correlations were not statistically significant, the study provides valuable insights into the complex dynamics of loan management in Nepal's banking sector, particularly the impact of economic factors and bank size on profitability. Further, the study highlights the complex relationships between loan management factors and the financial performance of Nepalese commercial banks, specifically focusing on Return on Equity (ROE). While some correlations were found, many were not statistically significant, suggesting that factors such as non-performing loans, capital adequacy, and inflation may have a limited direct impact on ROE. The study did, however, identify a significant negative correlation with firm size, indicating that larger banks may face challenges in achieving higher equity returns, possibly due to inefficiencies in managing their loan portfolios. These findings contribute to the understanding of loan management in Nepal's banking sector, suggesting that future research could explore additional factors or refine the analysis

to better capture these dynamics and their impact on bank performance.

In conclusion, the regression analysis conducted in this study which was based on ROA as the indicator of profitability, highlights the complex relationships between various loan management factors and the financial performance of Nepalese commercial banks. The model reveals that while some variables, such as capital adequacy and GDP growth rate, exhibit weak correlations with the performance indicator (ROA), others, like firm size, demonstrate a more significant influence. The high R-squared and adjusted R-squared values suggest that the model explains a substantial portion of the variance in bank performance, while the significant ANOVA results underscore the overall validity of the model. These findings provide valuable insights into the factors influencing bank profitability in Nepal, suggesting that improvements in loan management and a deeper understanding of macroeconomic factors could enhance the financial stability of Nepalese banks. Further, the regression analysis based on the second model which was based on ROE as the indicator of profitability, highlights that specific loan management factors have varying levels of impact on bank performance (ROE), with some demonstrating a statistically significant influence. The ANOVA results confirm the overall significance of the model, while the high R-squared and adjusted R-squared values suggest that the model effectively explains a large portion of the variance in bank performance. This analysis underscores the importance of factors like capital adequacy and firm size in shaping profitability, indicating that effective loan management and a strategic focus on these variables can enhance financial outcomes for Nepalese commercial banks. The findings provide a foundation for further research and support the development of policies to improve stability and profitability in the banking sector.

5.3 Implications

The study's findings from this research on loan management in Nepalese commercial banks offer several important implications for banking practices and policy development.

- **Enhancing Capital Adequacy:** The regression results highlight the significant impact of capital adequacy on bank performance, emphasizing the need for commercial banks to maintain strong capital buffers. This suggests that regulatory bodies should enforce stringent capital requirements to help banks absorb shocks,

especially during economic downturns, improving both stability and resilience. By focusing on capital adequacy, banks can better safeguard against the risks associated with non-performing loans and bolster their financial health.

- **Addressing Challenges of Bank Size:** The negative correlation between firm size and profitability indicates potential inefficiencies in managing larger loan portfolios, which could be due to operational complexities as banks grow in scale. Larger banks may need to adopt innovative loan management technologies, such as advanced data analytics, to improve oversight and streamline processes. This implication is particularly important for larger financial institutions seeking to optimize their returns on assets and equity through more effective portfolio management.
- **Leveraging Economic Conditions:** While GDP growth and inflation rates showed weaker direct impacts on profitability, these factors are nonetheless relevant for strategic planning. Banks could enhance their performance by anticipating macroeconomic trends and adjusting their loan management strategies accordingly. For instance, in times of economic growth, banks might increase lending to capture new market opportunities, while during inflationary periods, they might tighten lending criteria to manage risk exposure.
- **Focusing on Internal Performance Factors:** The findings from Pearson's correlation analysis reveal that internal, bank-specific factors are often more influential than external, macroeconomic variables in determining profitability. This suggests that banks should focus on refining internal policies—such as risk assessment, loan approval processes, and portfolio management practices to improve financial outcomes. Policymakers and bank management may prioritize these internal performance drivers over broader economic indicators when developing policies and setting strategic goals.
- **Informing Future Policy and Research Directions:** The overall statistical significance of the models and high explanatory power as indicated by R-squared values underscore the reliability of the model in explaining bank performance. This offers a valuable framework for policymakers to base future research and policy measures on empirically validated models. Further studies could explore additional factors that were not part of this study but may still impact loan management

efficiency and profitability in the context of Nepal's evolving banking sector.

- Further Studies: Further studies can be conducted by increasing sample size, no. of observations econometric and other mathematic models.

These implications highlight the need for targeted strategies in capital management, operational efficiency, and macroeconomic adaptability to enhance the financial sustainability of Nepalese commercial banks.

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APPENDIX –I

Non-performing loan in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	911515	470404	1241112	1256075	3626598
2014/15	1783953	367164	1122251	1220819	4163256
2015/16	851376	264422	1149018	889035	2183682
2016/17	661808	198905	1296574	722433	3821533
2017/18	1218340	187716	717438	613813	4015000
2018/19	1098579	177258	622521	985044	5739770
2019/20	1083582	265715	3520708	1492155	7092387
2020/21	635852	158549	3422237	112018	5926164
2021/22	985365	199845	3477639	125425	6324343
2022/23	11972089	1331506	11787867	11570035	4800922

(Source: Annual Reports of concerned banks)

Total loans and advances in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	46449328	48450305	43018763	56203077	57293326
2014/15	55428007	55363519	50226650	67161671	72079281
2015/16	67745979	68911543	59219297	77730402	81778175
2016/17	77798236	78986723	79467170	92471341	102161552
2017/18	86160213	94182248	92352355	113625155	121460144
2018/19	97470071	112007182	113032241	133558736	146560482
2019/20	106726542	119069238	198008889	153890439	155254601
2020/21	132093946	135173248	239018603	206622987	193305056
2021/22	155844979	155047381	269102477	311440027	226717548
2022/23	237989493	167556175	368126972	339406229	242942012

(Source: Annual Reports of concerned banks)

Risk Weighted Assets in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	63729135	56780162	54985594	73854239	61521111
2014/15	72183722	63451114	62313066	87766261	74841287
2015/16	90507190	79711762	75934081	104039643	85779466
2016/17	103796763	88929577	101537944	118827902	105671317
2017/18	115140220	110005455	117890246	143877441	104261254
2018/19	125984230	123391101	140948148	153445171	129606079
2019/20	137875246	132882211	237628876	192207826	164895505
2020/21	168346336	152955307	278717946	252598948	211091480
2021/22	197211335	155262354	326987908	287251365	256370338
2022/23	293852537	198639377	460065457	450729110	262762495

(Source: Annual Reports of concerned banks)

Total Capital (Tier I + Tier II) in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	7155579	6328487	6805537	8259651	2843234
2014/15	8041967	8457023	7908636	10154456	7603519
2015/16	9815199	10094804	9381258	12203614	8969052
2016/17	12613817	13063702	11543266	14752639	10982753
2017/18	14349498	15616670	13523391	18710876	13962000
2018/19	15871587	16955638	17350622	21245471	20303387
2019/20	16210311	17780357	29661282	25114471	20846575
2020/21	23446805	19089321	36802618	32247252	28416448
2021/22	24152365	21254365	41422902	34251365	34062536
2022/23	36168068	26415974	61367535	46074234	33939254

(Source: Annual Reports of concerned banks)

Net Profit after Tax in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	959106	1549699	974036	2319632	1836696
2014/15	1112287	1574331	960608	2093813	4643868
2015/16	1935908	1730207	1382224	2819334	2355388
2016/17	2281774	2118022	2061239	3702383	2776309
2017/18	1875610	2581682	2101363	3981893	3659267
2018/19	2763848	3054122	2761954	4238854	5046520
2019/20	2586723	2516244	2908664	3463241	4377316
2020/21	2998623	1770940	4165152	4527553	3423628
2021/22	2482137	2546060	5206457	4972755	4292822
2022/23	1562817	3362115	6694357	6404936	3595127

(Source: Annual Reports of concerned banks)

Total Assets in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	74718814	71323363	61357915	88788741	122560787
2014/15	84753328	100033859	70600537	117652434	139560807
2015/16	99863008	114841482	87701310	128924822	166432086
2016/17	108063252	116946280	117893945	144017861	173544760
2017/18	116462301	144811151	125847432	160978071	197642635
2018/19	133151142	170077534	151653562	201138822	226410178
2019/20	155884919	185023190	273876591	237680030	266766261
2020/21	178490926	211650249	345423260	291066223	309987457
2021/22	216291872	224300220	357690065	416170239	330242804
2022/23	332392900	250090490	526882562	481203547	394021729

(Source: Annual Reports of concerned banks)

Shareholders' Equity

in '000

YEAR	HBL	EBL	GBIME	NABIL	RBB
2013/14	6083411	5457148	6126297	9012286	8588972
2014/15	6958900	6890377	7323494	9485591	8588972
2015/16	8823769	8514088	8705717	11593059	8588972
2016/17	12328146	13207514	12376433	16699184	8588972
2017/18	14138897	16134507	13578678	20586357	19070771
2018/19	15994798	17625063	16332170	23188612	21585804
2019/20	17589254	18637356	28834396	25855659	23029538
2020/21	20132713	20683605	32720417	33858106	28674300
2021/22	22112176	22694200	37148364	52583693	32678938
2022/23	33630369	25371669	59053710	56912678	50738307

(Source: Annual Reports of concerned banks)

Inflation Rate

in %

YEAR	
2013/14	9.10
2014/15	8.36
2015/16	9.94
2016/17	4.50
2017/18	4.20
2018/19	4.64
2019/20	6.15
2020/21	3.60
2021/22	6.32
2022/23	7.74

(Source: IMF and NRB)

GDP growth rate

in %

YEAR	
2013/14	5.00
2014/15	6.01
2015/16	0.40
2016/17	7.50
2017/18	6.30
2018/19	7.10
2019/20	2.28
2020/21	4.20
2021/22	5.80
2022/23	4.40

(Source: IMF and NRB)

Appendix –II

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Nonperforming Loan Ratio	10	.98	2.88	1.7700	.76436
Capital Adequacy Ratio	10	10.11	13.63	12.3260	.98920
GDP Growth Rate	10	.40	7.50	4.8990	2.19764
Size of Bank	10	18.21	19.77	18.9510	.50606
Inflation Rate	10	3.60	9.94	6.4550	2.23321
Return on Assets	10	1.07	2.01	1.6320	.34071
Return on Equity	10	9.51	25.62	17.3230	5.28134
Valid N (listwise)	10				

Appendix –III

Correlations

		Nonperforming Loan Ratio	Capital Adequacy Ratio	GDP Growth Rate	Size of Bank	Inflation Rate	Return on Assets	Return on Equity
Nonperforming Loan Ratio	Pearson Correlation	1	-.667*	-.046	-.269	.657*	-.017	.258
	Sig. (2-tailed)		.035	.900	.452	.039	.963	.472
	N	10	10	10	10	10	10	10
Capital Adequacy Ratio	Pearson Correlation	-.667*	1	.235	.652*	-.769**	-.204	-.523
	Sig. (2-tailed)	.035		.513	.041	.009	.572	.121
	N	10	10	10	10	10	10	10
GDP Growth Rate	Pearson Correlation	-.046	.235	1	-.067	-.532	.391	.109
	Sig. (2-tailed)	.900	.513		.855	.113	.264	.765
	N	10	10	10	10	10	10	10
Size of Bank	Pearson Correlation	-.269	.652*	-.067	1	-.370	-.839**	-.938**
	Sig. (2-tailed)	.452	.041	.855		.293	.002	.000
	N	10	10	10	10	10	10	10
Inflation Rate	Pearson Correlation	.657*	-.769**	-.532	-.370	1	-.033	.383
	Sig. (2-tailed)	.039	.009	.113	.293		.927	.275
	N	10	10	10	10	10	10	10
Return on Assets	Pearson Correlation	-.017	-.204	.391	- .839**	-.033	1	.846**
	Sig. (2-tailed)	.963	.572	.264	.002	.927		.002
	N	10	10	10	10	10	10	10
Return on Equity	Pearson Correlation	.258	-.523	.109	- .938**	.383	.846**	1
	Sig. (2-tailed)	.472	.121	.765	.000	.275	.002	
	N	10	10	10	10	10	10	10

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

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

Appendix –IV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.972 ^a	.945	.875	.12023	.945	13.656	5	4	.013

a. Predictors: (Constant), Inflation Rate, Size of Bank, GDP Growth Rate, Nonperforming Loan Ratio , Capital Adequacy Ratio

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.987	5	.197	13.656	.013 ^b
	Residual	.058	4	.014		
	Total	1.045	9			

a. Dependent Variable: Return on Assets

b. Predictors: (Constant), Inflation Rate, Size of Bank, GDP Growth Rate, Nonperforming Loan Ratio , Capital Adequacy Ratio

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	13.701	1.878		7.297	.002		
	Nonperforming Loan Ratio	-.002	.086	-.004	-.019	.985	.369	2.707
	Capital Adequacy Ratio	.201	.088	.584	2.281	.085	.211	4.739
	GDP Growth Rate	.037	.026	.236	1.393	.236	.481	2.078
	Size of Bank	-.783	.118	-1.163	-6.660	.003	.454	2.204
	Inflation Rate	.017	.039	.114	.448	.677	.215	4.659

a. Dependent Variable: Return on Assets

Appendix –V

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.972 ^a	.946	.878	1.84828	.946	13.897	5	4	.012

a. Predictors: (Constant), Inflation Rate, Size of Bank, GDP Growth Rate, Nonperforming Loan Ratio , Capital Adequacy Ratio

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	237.368	5	47.474	13.897	.012 ^b
	Residual	13.665	4	3.416		
	Total	251.033	9			

a. Dependent Variable: Return on Equity

b. Predictors: (Constant), Inflation Rate, Size of Bank, GDP Growth Rate, Nonperforming Loan Ratio , Capital Adequacy Ratio

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta				Tolerance	VIF
1	(Constant)	191.688	28.865			6.641	.003		
	Nonperforming Loan Ratio	.166	1.326	.024		.125	.906	.369	2.707
	Capital Adequacy Ratio	2.608	1.356	.489		1.924	.127	.211	4.739
	GDP Growth Rate	.348	.404	.145		.860	.438	.481	2.078
	Size of Bank	-11.339	1.807	-1.087		-6.274	.003	.454	2.204
	Inflation Rate	.988	.595	.418		1.659	.173	.215	4.659

a. Dependent Variable: Return on Equity

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ABSTRACT This dissertation examines the impact of relationship between loan variables and profitability in Nepalese commercial banks, where Everest Bank Limited, Himalayan Bank Limited, Global IME Bank Limited, NABIL Bank Limited and Rastriya Banijya Bank have been chosen as the sample for the study. The main objectives of this study is to examine the relationship between loan variables and profitability of sample banks. This istudy ihas icovered iten iyears idata ifrom i2013/14 ito i2022/23 iof isample ibanks. iDescriptive iand icasual icomparative iresearch idesigns ihave ibeen iemployed ito imake ithe istudy imore igenuine iand icredible. iFive isets iof ihypothesis ihas ibeen ideveloped ito iaddress ithe iresearch iquestion. iStudy iis imainly ibased ion isecundary idata, iwhich iare iobtained ifrom ithe ibalance isheet iand iprofit iand iloss iaccount ipresented iin iannual ireports iof isample ibanks, iand iother irelevant idata ihave ibeen iobtained ifrom iINRB iand iIMF ireports iof ithe irelevant ifiscal iyears. Variables identified as independent are non-performing loan ratio, capital adequacy ratio, GDP growth rate, size of firm and inflation rate, whereas variables identified as dependent are return on assets and return on equity. The study has used different financial ratios and statistical tools namely mean, standard deviation, correlation analysis, regression analysis for the study of the sample banks. It ihas ibeen ifound ifrom iKarl iPearson's icorrelation ianalysis ithat iROA iis iinsignificant ipositively iassociated iwith iGDP igrowth irate; iinsignificant inegatively iassociated iwith inon-performing iloan iratio, icapital iadequacy iratio iand iinflation irate; iand isignificant inegatively iassociated iwith isize iof ibank. iFurther, iROE iis iinsignificant ipositively iassociated iwith inon-performing iloan iratio, iGDP igrowth irate iand inflation rate; insignificant negatively associated with capital adequacy ratio; and significant negatively associated with size of bank. The results of regression indicated that ROA is insignificant positively associated with capital adequacy ratio, GDP growth rate and inflation rate; insignificant negatively associated with non-performing loan ratio; and significant negatively associated with size of bank. Further, ROE is insignificant positively associated with non-performing loan ratio, capital adequacy ratio, GDP growth rate and inflation rate; and significant negatively associated with size of bank. Keywords: Loan, Profitability, Commercial Bank, Correlation, Regression

CHAPTER I INTRODUCTION

1.1 Background of the Study

Loan management can also be used by companies that deal in products which are generally expensive. These companies have to supplement the sale by offering suitable financing options to customers in order to make the sale. Not only companies can make a sale (for a value which was normally out of customer's reach) but also it can