# CREDIT RISK AND PROFITABILITY OF NEPALESE MICROFINANCE COMPANIES

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial fulfilment of the requirements for the Degree of Masters of Business Studies

**by**


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I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**CREDIT RISK AND PROFITABILITY OF NEPALESE MICROFINANCE COMPANIES**" The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

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

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## REPORT OF RESEARCH COMMITTEE

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Researcher

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# ABBREVIATIONS

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

# ABSTRACTS

The major objectives of the study was to examine the effect of credit risk on profitability of the First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta. The study uses the secondary data to fulfill its objectives. Secondary data are those data that are collected by someone else or used already and made available to other in the form of published statistics such as annual reports, periodicals, newspapers, magazines etc. While evaluating the performance of the sample MFIs and comprehending the influence of independent variables on dependent variables, namely Return on Assets (ROA) and Return on Equity (ROE), several notable observations emerge. The analysis reveals a nuanced relationship between independent variables and the financial performance of the sample MFIs. Non-Performing Loan Ratio (NLPR) exhibits a positive correlation with ROA, suggesting that higher Non-Performing Loan Ratios might be linked to increased Return on Assets, indicating a potential trade-off between risk and return in Credit Risk Management. However, this relationship lacks significance in predicting Return on Equity. Cash Reserve Ratio (CRR) displays a negative correlation with both ROA and ROE, implying that higher cash reserves may be associated with diminished profitability. This observation aligns with the concept that maintaining greater liquidity, while enhancing stability, may come at the cost of returns. Capital Adequacy Ratio (CAR) showcases a negative correlation with both ROA and ROE, implying that higher capital adequacy could be linked to reduced returns. The statistically significant negative coefficients underscore the notion that conservative capital structures might negatively affect profitability, highlighting the delicate balance between risk and capitalization. In the context of Credit Risk Management, these findings underscore the critical importance of maintaining a delicate balance between risk and capitalization. While conservative measures such as higher capital adequacy and increased liquidity contribute to stability, they may concurrently limit returns.

Key words: Capital Adequacy Ratio, Net Loan-to-Deposit Ratio, Capital Adequacy Ratio, Net Interest Margin, Total Loans to Equity, Return on Equity, Return on Assets

# CHAPTER I

# INTRODUCTION

## 1.1 Background of the Study

Credit risk management is the process of identifying, measuring, monitoring, and controlling the risk of potential losses due to the failure of borrowers or counterparties to meet their contractual obligations. Credit risk management is essential for the stability and profitability of financial institutions, especially banks, as credit is one of their main sources of income. Credit risk management involves the use of various techniques and tools, such as credit rating, credit scoring, credit portfolio analysis, credit risk mitigation, and credit risk transfer, to reduce the exposure and impact of credit risk. (Bhatt et al., 2023)

Coyle (2000) defines credit risk as losses from the refusal or inability of credit customers to pay what is owed in full and on time. It arises mainly from direct lending and certain off-balance sheet products such as guarantees, letters of credits, foreign exchange, forward contracts and derivatives and also from the bank's holding of assets in the form of debt securities. It may take the form of delivery or settlement risk. It is critical to bank survival or failure because microfinance companies traditionally earn their huge profits from interest on their risk exposures. The management of credit risk is a critical component of a comprehensive approach to risk management and is essential to the long-term success of a microfinance companies.

Capital requirement (capital adequacy) is the amount of capital a bank or other financial institution has to hold as required by its financial regulator. This helps to ensure that institutions are not involving in or holding investments that amplify the risk of default. In addition, to guarantee that microfinance companies have enough capital to sustain operating losses while honoring withdrawals. Basel Committee on banking supervision (1988) has introduced a capital measurement system which is generally referred to as the Basel Accord. This framework has been replaced by new and significantly more complex capital adequacy framework known as Basel II. Whilst Basel II considerably changes the calculation of the risk weights, it sets aside the calculation of capital alone. Basel II is based on a three pillars concept, which helps in boosting stability in the financial system: First pillar-minimum capital requirements (addressing risk), Second pillar- supervisory review and Third pillar- market discipline.

Non-performing loans ratio (NPLR) reflects the bank's credit quality and is considered as an indicator of credit risk management. NPLR, in particular, indicates how microfinance companies manage their credit risk because it defines the proportion of loan losses amount in relation to total loan amount. NPLR has been used as the default rate on total loan and advances. Non-performing loan ratio (NPLR) is the major indicator of microfinance companies' credit risk. They find that NPLR which measures the extent of credit default risk sustained by the microfinance companies showed a statistically significant large negative effect on profitability measured by ROA. Since it measures the default rate, a negative relationship could be expected between non-performing loan ratio and profitability of microfinance companies. However, empirical studies produce mixed results (Jha & Hui, 2012) negative association between NPL ratio and ROA but the coefficient is statistically insignificant. Although there are conflicting evidences on this issue, in view of the theory and majority of the empirical literature, a negative relationship is expected between non-performing loan and banks performance.

The main source of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, massive licensing of microfinance companies, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Kithinji, 2010). An increase in bank credit risk gradually leads to liquidity and solvency problems. Banks and the Microfinance companies play very significant role in the economy. First and foremost is in the form of catering to the need of credit for all the sections of society. The modern economies in the world have developed primarily by making best use of the credit availability in their systems. An efficient banking system must cater to the needs of high-end investors by making available high amounts of capital for big projects in the industrial, infrastructure and service sectors. At the same time, the medium and small ventures must also have credit available to them for new investment and expansion of the existing units.

Cash reserve ratio is one of the control variables used in analyzing effect of credit risk on the performance of microfinance companies. Traditionally, cash reserve ratio (CRR) has been one of the monetary tools in the hands of the central bank. Cash reserve ratio(CRR) is a specified minimum fraction of the total deposits of customers which Microfinance companies have to hold as reserves with the central bank. By changing

CRR, the central bank can control the amount of liquidity. If the reserve requirement is raised, microfinance companies will have less money to loan out and this effectively reduces the amount of capital in the economy, therefore lowering the money supply. It will mean less money for investment and spending, and would stunt the growth of the economy. It would also mean that microfinance companies earn less interest and expect that their profitability may decline. Moreover, cash reserve requirement does not earn any income for the Microfinance companies and thus, may be viewed as a drain on the profitability of microfinance companies.

Bank size as measured by total assets is one of the control variables used in analyzing performance of the bank system. Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector. This variable controls for cost differences in product and risk diversification according to the size of the financial institution. This is included to control for the possibility that large microfinance companies are likely to have greater product and loan diversification. In most finance literature, natural logarithm of total assets of the banks is used as a proxy for bank size. The effect of bank size on profitability is generally expected to be positive (Smirlock, 2015).

The Nepal Rastra Bank (NRB) is the regulating and monitoring agency of all the microfinance companies. The capital structure, shareholding pattern, cash reserve ratio, interest rates determination, sector of investment and proportion of a Microfinance companies is totally influenced by NRB policies. Recently the Microfinance companies are suffering from the paid-up capital increment issue. The national level microfinance companies of Nepal are required to maintain the minimum paid-up capital of ten million and providence level two million until the end of fiscal year 2022/23. Most of the bank has met the requirement now; some are still working for this. Currently there are 26 Microfinance companies operating in Nepal. Out of the 26 Microfinance companies, only 25 of them are listed in NEPSE. Rastriya Banijya Bank is not listed in Nepal Stock Exchange yet.

### 1.2 Problem Statement

Today as we know that banking industry is one of the fast-growing businesses in Nepal. After the liberalization policy was adopted by government, this banking sector has been growing dramatically. However due to political instability, government couldn’t be able to pay sufficient attention in this sector. Regulation, supervision, and monitoring by government have been weekend in banking sector as like other sectors and also other

types of non-business practices might have been occurred in this sector. Due to such type of non-business practices will hamper on this sector. Ultimately it effects on its activities of this sector. Microfinance companies in Nepal have been facing various challenges and problems specially in lending. The problem in lending is rising due to an economic condition of the country, variation in government policies and due to the default borrowers (Nwude, 2018). However, the country had stepped in liberal economy and world trade organization, but still banking sectors are not able to grab the opportunities or advantages from them. In context of Nepal, many microfinance companies are facing huge loss by lending in a huge project or industry. Still there is the trend of giving consortium loan for a big project so to minimize risk. Bank confidently can give only housing loan, hire purchase loan or Overdraft of certain limit to an individual, but still it gets feared to invest in a big project solely (Otwoko& Maina, 2021). The major statements to be analyzed in this study will definitely be the credit management adopted by Nepalese microfinance companies. This study highly focused on following statements.

i. What is the current situation of credit risk management and profitability of Microfinance companies in Nepal?

ii. Is there any relationship between credit risk and profitability of Microfinance companies in Nepal?

iii. What is the impact of credit risk in the profitability Microfinance companies in Nepal?

### 1.3 Objectives of the Study

The major objectives of the study was to examine the effect of credit risk on profitability of the First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta. The specific objectives of the study are listesd below:

i. To examine the current situation of credit risk management and profitability of Microfinance companies in Nepal.

ii. To analyze the relationship between credit risk and profitability of Microfinance companies in Nepal.

iii. To analyze the impact of credit risk in the profitability Microfinance companies in Nepal.

### 1.4 Rational of the study

Credit is the major sources of income in any microfinance companies. There is no doubt that the profit earned by any bank depends on the volume of the good lending. Study on microfinance companies lending practice carry a great significance to shareholders, professionals, bankers themselves and the student eager to know about lending practices and their management. This study is based on measuring the efficiency of First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta in the practices of lending. This study no doubt will have importance to various groups of people but in particular it is directed to certain group of people which are: Importance to shareholders, Importance to management team of the bank, Importance to customers, Importance to financial institution and stock exchange, Importance to government bodies and policy makers and Importance to outside parties: investors, customers, competitors, stockbrokers, dealers and market makers.

### 1.5 Limitations of the Study

The benefits and limitations are the two faces of a same coin. Each and every research work has more or less limitations. To make this study precise, meaningful and valuable some limitations are made so that the objective of this study is achieved within limited time, resource and information. Some limitations of this study are listed below:

i. The study is limited to only three Microfinance companies of Nepal, namely First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta.

ii. The study based on only the past years periods since F/Y 2012/13 AD to F/Y 2021/22 AD.

iii. The study mainly focuses on the factors relating to credit risk and profitability.

iv. The study is based on secondary data such as annual report, financial statement etc. Inaccessibility of information which could have helped to analyze other aspects of credit functioning as well.

v. Thus, overall financial position of the banks cannot be judged by this report and this study is only helpful for credit operation only.

# CHAPTER II

# LITERATURE REVIEW

The review of literature is a crucial aspect of planning of the study. In this chapter, focus has been made on the conceptual framework and the review of literature of relevant to the credit risk management of Microfinance companies. It is based on available literature in the field of research. For this purpose, it needs to review related literatures in this concerned area which help me to gain clear ideas, opinions concepts on what other has said? what other has done? and what other have written?' these all and other related questions are reviewed which has provided useful inputs in this research work. Every possible effort has been made to grasp knowledge and information that is available from libraries, document collection center, other information managing bureaus, published –unpublished journals and reports of concerned bank.

Review of literature means to collect the information about the selected topic of the research through the different sources. Review of literature means stock taking of available literature in one's field of research. Literature review is a comprehensive review of previous works on the general and specific topics considered in the report. The literature review may also serve as a kind of bibliographic index and guide for the readers. It also demonstrates where the current study fits into the scheme of things. The objective of this chapter is to present basic concept on related topic of the Microfinance companies and various renowned writers through different books, journals and research papers. Various independents studies, unpublished previous thesis, article, journals are reviewed, in this chapter. Reviewing these all provides us background to research work, guidelines to deal with prospective below consecutively. Under this topic the following subject matter are reviewed.

i. Theoretical review

ii. Empirical Review

## 2.1 Theoretical Review

In Nepal, the inception of micro microfinance companies (Microfinance companies) and the microfinance sector traces its origins back to the mid-20th century, coinciding with the nascent stages of economic development in the country. While the roots of Microfinance companies in Nepal arenot as ancient as the global history of traditional

banking, their emergence has played a pivotal role in promoting financial inclusion and poverty alleviation.

The beginning of Nepal's microfinance journey can be associated with the post-independence period, marked notably by the establishment of Biratnagar Jute Mills in 1936 AD, a seminal event that ushered in Nepal's industrialization efforts. In 1937 AD, Nepal Bank Limited came into being, representing one of the earliest banking institutions in Nepal, with the dual objective of fostering the banking and industrial sectors. During the same period, the formulation of the first industrial act in the year was a significant step forward, aimed at bolstering industries and capital markets within Nepal.

The advent of modern microfinance institutions in Nepal gained significant traction in the latter half of the 20th century. While Nepal Bank Limited served as a cornerstone of the broader financial landscape, the necessity for localized financial services became increasingly pronounced. Microfinance institutions (Microfinance companies) emerged to fulfill this imperative, driven by the vision of extending financial services to the remote corners of the country and enhancing the overall financial system.

On Baisakh 14, 2013, that Nepal Rastra Bank (NRB) was established as the central bank under the Nepal Rastra Bank Act of 2012 B.S., assuming a pivotal role in regulating and overseeing Nepal's financial sector. NRB has since functioned as the government's banker and has made substantial contributions to the growth of the financial sector, including the expansion of microfinance services.

Rise of Microfinance Institutions: Recognizing that comprehensive and rapid development of the country necessitated the provision of competitive banking services to every nook and cranny, the government moved forward with the establishment of Rastriya Banijya Bank (RBB) on Magh 10, 2022. RBB was founded as a fully government-owned commercial bank, further extending the financial reach throughout Nepal.

In the early 1980s, under the influence of liberal and market-oriented economic policies, the government took a significant step by permitting the establishment of foreign joint venture banks (JVBs). This policy shift aimed to expedite economic activities, promote efficient banking services, facilitate economic development, and encourage industrialization. Consequently, three foreign joint venture banks—

Namely NABIL BANK (Nepal Arab Bank) Ltd. in 2042 - 03 - 29, Nepal Investment Bank (Nepal Indo – Suez Bank) in 2042-12-16, and Standard Chartered Bank (Nepal Grindlays Bank Ltd.) in 2043-10-16 came into existence, marking a substantial phase in the evolution of Nepal's financial sector.

The evolution of microfinance in Nepal has been characterized by a transition from traditional banking to more inclusive and community-centric approaches. Microfinance companies have played a pivotal role in facilitating access to financial services, encompassing credit, savings, and insurance, for marginalized and underserved populations.

The review of textbooks and other reference materials such as newspapers, magazines, research articles, journals and past thesis have been included in this topic. Under the credit management many subject matters are considered like the credit policy of the bank documentation of credit processing, approval process, disbursement of the approves loan, review process, audit of the credit administration, loan classification and provision as per NRB directives etc.

### 2.1.1 Concept of Credit

Credit is the amount of money lent by the creditor to borrower either on the basis of security or without security. Credit and advances is an important item on the asset side of the balance sheet of a microfinance companies. Microfinance companies earns interest on credits and advances which is one of the major sources of income for banks. Bank prepares credit portfolio; otherwise it will not only effect debts but also affect profitability adversely (Nwankwo, 2019).

Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return of obligation repay on specified date on demand. Bank generally grants credit on four ways: (Chhabra & Taneja, 2018)

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

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

- Business plan
- Framework for risk management
- Strategies for corporate control.

These are the basic components provide a solid foundation for managing value and risk planning, it focuses in just an operating and competing in the financial services industry. The modern strategic approach also includes a framework for risk management and strategic for completing in the component fits for the modern idea of the basic business of banking as measuring, managing and accepting risk. The bank's objective is to manage value and risk by maximizing those or eliminating those that destroy value.

The main task of a Microfinance Institution (microfinance companies) is to provide financial services, including small loans and savings opportunities, to individuals and businesses with limited access to traditional banking, aiming to promote financial inclusion and poverty alleviation among underserved populations. Doing all these activities every bank has to face so many risks. There are several types of risk prevailed in the banking industry, but the major area of the risk are widely recognized, i.e. credit risk, market risk and operating risk etc. The credit risk is the potential financial loss resulting from the failure of customers to honors fully the terms of loan or contract. On the other hand, the market risk includes balance sheet risk and trading risk such as potential risk to earning and capital resulting from changes in interest rate, liquidity conditions, impact of foreign exchange rate fluctuations etc. Meanwhile operating risk arises from the natural disasters, errors in processing and settlement of transactions safeguarding of assets, system failure, fraud and forgery (Encyclopedia, 2014).

### 2.2.2 An Overview on Credit Risk

Credit risk is defined as the possibility that a borrower will fail to meet its obligations in accordance with the agreed forms and condition. Credit risk is not restricted to lenders doing activities only but includes off balance sheet and interbank exposures. The goal of CRM is to maximize the bank risk adjusted rate of return by maintaining the CRE within acceptable parameters. For most banks, loan is the largest and most oblivious resources of credit. However, other sources of credit risk exist throughout the activities of banks including in the banking book and in the trading book and also in both on and off balance sheet. Banks are increasingly facing credit risk or counterpart risk in various financial instruments other than loans including acceptance, interbank

transactions, trade financing, foreign exchange transaction and guarantee and the settlement of transactions.

Credit is regard as the most income generating assets especially in Microfinance companies. Credit is regarded as the heart of commercial bank in the sense that, it occupies large volume of transaction. It covers the main part of investment. It is the main factor for creating profit and determining the profitability. It affects the overall economy.

In today's context, it also effects on national economy in some extent because if the bank provides credit to retailer, it will make the customer status. Similarly, it provides cash to trade and industry too. The government will get tax from them and help to increase national economy. It is also the security against depositors. It is supposed from the very beginning that Credit is the wealth maximization derivative. However, other factors can also affect profitability and wealth maximization but the most effective factor is regarded as credit risk. It is the most challenging task because it is backbone in commercial banking. Thus, effective management of credit should seriously be considered. Management is the system which helps to complete the task effectively. Credit risk management is also the system which helps to manage credit effectively, in other words, credit risk management refers the management of credit exposure arising from loans, corporate bodies, and credit derivatives. Credit exposures are the main sources of investment in commercial banks and return on such investment is supposed to be main sources of income.

### 2.1.3 Credit Risk Management

Financial environment is dynamic. In this dynamic financial environment fluctuation in interest rates, exchange rates and commodity and real estate price are not something new. These fluctuations in economic and financial variables destabilize the corporate strategies and performance of bank. Thus, it is necessary that bank has a framework of risk management. Effective credit risk management allows a bank to reduce risk ad potential non- performing assets. Once bank understand their risk and their cost they will be able to determine their most profitable business. Therefore, the bank must have an explicit credit risk strategy by organizational changes, risk measurement techniques and fresh credit processes and system. While talking about the credit risk management, five C's of creditworthiness should be considered and they are:

• **Character**

The good character and intention of the borrower is very important and thus should be seriously considered. Information about the character of the client can be gathered from his working place, reference, neighbors and other places he is associated with. This job tediously but should be carried out for secure investment.

• **Capacity**

It can be described as a customer's ability to pay. It is measured by applicants past performance records. For this an interview with applicants, customers\suppliers will further clarify the situation. The gross income, expenses and net income should be analyzed whether the borrower lives on salary\wages or any other forms of income sources. Whether the borrower has extra income source other than usual based which should be used to repay the scheduled installments should be considered.

• **Capital**

Capital provides a caution to absorb operating and assets losses that might otherwise impair debt repayment. This, in fact, is the insurance against the loans granted to the borrowers.

• **Collateral**

Sufficiency of collateral is necessary to ensure the recovery of loan. In case of default, by any cause, the collateral kept should have value enough to recover the loan granted and interest borne by it. It is recommended that only 50% of the value of collateral is granted as loan, but considering other factors like character of borrower and his credit worthiness, this percentage can be made flexible.

• **Conditions**

Borrowers may be subject to unfavorable economic conditions beyond their control. Repayment depends not only upon character, capacity and collateral but those factors over which the borrower exercise little or no control. As for example: natural calamities or drastic economic crises etc.

Risk depends upon the quality found in each 'C' and the combination of these five Cs., assuming the same conditions prevails; the following guidelines are suggested.

### 2.1.4 Credit Risk Management Techniques

As the majority of bank assets are in the form of loan, as the lending function is simple and create the value of the bank. The main danger is the chance of the borrower not to pay the loan amount. So, the proper prudent management of the credit risk is very important. Merton and Bodies have suggested three technique for the credit parameter in their article published in the journal of Banking and Finance (Addo, et al., 2018).

**• Risk Based Pricing**

It has been established that risk-based pricing required lenders to change the rate that compensates for the riskiness of the loan. The pricing procedure needs to be straight forward and not based solely an historical loan loss experience. In practice, loan pricing tends to follow the prime rate plus basis. Because the prime rate is not the lowest rate that a bank charges the credit worthiest customers can negotiate from the prime rate. The discount prime rate is what bank use to attempt to compete with open market instruments such as commercial paper and corporate bonds.

**• Assets Restriction**

Bank lenders and other creditors have a claim on the borrower's assets. As long as the market value of assets exceeds the value of liabilities, creditors are protected because proceeds from sales of assets cover the entire claim alternatively, as long as positive net worth exists, business firms are not going to turn over the creditors assets that exceeds the value of claim against them. Thus, one way for lenders to protect themselves is to try to ensure that the value of assets always exceed than value of claims. Restriction amount of debt a borrower takes on and restricting the variability of the value of assets are the basic ways of meeting this objective. Restricting covenants is long agreement and the strength of bank customer relationships are practical ways that lender impose assets restrictions or establish borrowers' incentives for compliance.

**• Monitoring**

If lender have a contractual right to monitor assets value continuously and to seize assets, than loan losses can be minimized either by auditing assets values and seizing assets before short falls exist or by requiring the posted value of collateral assets to equal or the posted value of collateral assets to equal or exceeds the promisedpayment

for private loan, which banks have considerable expertise in organization, monitoring without continuous surveillance is costly.

Before providing credit to customer, bank makes analysis of project from various aspects and angles. It will help the bank to see whether project is really suitable to invest or not. For that, bank needed to do a project appraisal. The purpose of project appraisal is to achieve the guarantee of reasonable return from the project. Project appraisal answers the following questions:

i. Is the project technically sound?

ii. Will the project provide a reasonable return?

iii. Is the project in line with the overall economic objectives of the country?

Generally, the project appraisal involves the investigation from the following aspects

- Financial aspect.
- Economic aspect.
- Management\Organizational aspect.
- Legal aspect.

### 2.1.5 Credit Risk Management Framework

Fluctuations in interest rate, exchange rate, and commodity and real estate prices are not something new. However, fluctuation in economic and financial variables destabilized the corporate strategies and performance of the banks and their client customers. Thus, it is crucial to those banks have a framework for parameter and for selling parameter services to clients. Risk management can be conducted on a bank's balance sheet through adjustments in portfolio composition, or off the balance sheet by using most of parameter weapons derived from the technology of financial engineering, there off-balance sheet tools of parameter are known as derivatives contracts of activities or simply as ' derivatives' (John, 1998).

The risk management framework rests on three pillars are summarized as follows.

- Making good investment decisions creates corporate value.

For traditional banks this means making good locus and investments and tradition banks, it means this plus making good investment decision regardingtheir non-traditional activities e.g. Investment banking, mutual funds, insurance derivatives.

- Generating enough cash flows internally is the key to making good investments.

Companies that don't generate cash flow internally tend to cut investment more substantially than their competitors do. In banking generating enough cash flow internally plays a critical role in maintaining a firm's capital adequacy. Adequate capital in turn is a pre - requisite for expansion and making good investment. With respect to cost and control, banks with inadequate capital are subject to higher deposit insurance premium greater regulatory scrutiny and possible takeover by outsiders.

- Proper and prudent look at major market indicator.

Bank should look properly at major market indicator because adverse movements in external factors such as interest rates and commodity prices can disrupt cash flow, a company ability to invest be jeopardized.

### 2.1.6 Factor Affecting Credit Policy

The credit policy of a firm provides the framework to determine whether or not to extend credit and loan such to extend. The credit policy decisions of banks have two broad dimensions; credit standards and credit analysis. A firm has to establish and use standards to making credit decision, develop appropriate sources of credit information and methods of credit analysis.

Credit risk management strategy or the credit policy is a tool for analyzing and managing the credit risk. Generally, the following factors are to be considered to make effective credit risk management. It is also called the factors of credit policy. It helps to get effective credit worthiness.

**• Industry Environment**

It determines the nature of the industry structure its attractiveness and the company's position within the industry, structural weakness of a company which is disadvantaged, theaters first way out and security value.

**• Financial Conditions**

It determines the borrower's capacity to repay through cash flow as the first way out. The strength of second way out i.e. through collateral liquidation is also assessed. Further the possibility to fall bank on income of sister concern in case of financial crunch of the company condition threatens repayment capacity.

**• Management Quality**

It determines the integrity, competence and nature of alliances of the borrower's management team. Weakness in replacements 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 man power , 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 by bank to secure the loan provided excitability of the security documents and present value of the properties mortgaged with the bank. Weakness in security threatens the bank's second way out.

## 2.2 Directives of NRB on Credit Aspect

Microfinance companies are heavily regulated than its non-bank competitors in the financial service industry. They are subjected to follow the updated regulations issued by the regulation authority. N.R.B is the regulating authority of Nepal. As per directives issued by NRB, loans and advances shall be classified into the following four categories.

**• Pass Credit**

Pass loan and advances whose principle amounts are not past due for a period up to 3 months shall be included in this category. Those are classified and defined as performing loans.

**• Substandard Credit**

All loans and advances that are past due for a period of 3 to 6 months shall be included in this category. Those are classified as non-performing loans.

**• Doubtful credit**

All loans and advances which are past due for period of 6 months to 1 year shall be included in this category. Those loans are classified as nonperforming loss.

**• Loss**

All loans and advances which are past due for a period of more than 1 year as well as advance which have at least possibility of recovery or considered unrecoverable and those having thin possibility of even partial recovery in future shall be included in this category. These loans and advances are also classified as non-performing loans. The credit loss provision for performing credit is termed as general loss provision whereas the credit loss provision for non-performing credit is termed as specific credit loss provision. Auditor has to correctly rate the credit and ensure that accurate credit loss provision has been made. The auditor should examine whether the bank has obtained the complete documentation so that the bank interest is secured. In addition, audit is made to inspect compliance of terms and condition laid down. Credit audit is required to check whether credit is given in within authority, drawing power etc. Credit audit helps the bank to adopt corrective measures where weakness has been pointed out and to focus further on strengths.

## 2.3 Empirical Review

Temba et al. (2024) examined the Tanzanian commercial banks' financial performance was impacted by the caliber of their credit risk management procedures. For the analysis, 255 observations from 2003 to 2019 were used from a balanced panel of fifteen commercial banks. The findings showed that banks' performance is favorably impacted by risk assessment and approval, the effectiveness of credit procedures and controls, the sufficiency of the recovery process, and risk supervision and monitoring, in that order, through their respective asset quality, efficient use of equity, and capital adequacy. Furthermore, risk assessment, approval, supervision, and monitoring have a detrimental impact on banks' earning capacity and liquidity. Because credit risk management techniques have a favorable impact on financial performance, the study suggests that they should be a key component of bank operations. However, as credit risk assessment, approval, monitoring, and supervision have a negative impact on banks' liquidity, care should be given to strike a balance on mix and coordination in the facilitation of all researched factors.

Natufe and Evbayiro-Osagie (2023) analyzed the credit risk management and return on equity of Nigerian deposit money banks (DMBs). The independent variables in our data set include size (SZ), non-performing loans ratio (NPLR), loan loss provision ratio

(LLP), liquidity ratio (LQR), loan-to-deposit ratio (LDR), risk asset ratio (RAR), and capital adequacy ratio (CAR). The return on equity (ROE) is the dependent variable that we have. We discovered that the important factors of ROE are SZ, NPLR, RAR, and CAR using a panel data regression analysis. We also discovered that, in order to get over the CBN's prohibition on utilizing local depositors' cash to build risk assets, Nigerian DMBs now heavily rely on offshore borrowings in the form of Eurobonds. Additionally, we discovered that during the research period, investors in risk-free assets (treasury bills) received no noticeably higher compensation for their exposure to risk than shareholders in DMBs with international banking licenses in Nigeria. Therefore, in order to reduce the likelihood that the credit life cycle of authorized loans would fail, the CBN should keep bolstering its regulatory powers by conducting frequent assessments that would force changes of the DMBs' credit risk management systems. Furthermore, it is essential to evaluate the present 37.5% regulation cash reserve level of DMBs in order to lessen their reliance on offshore capital and the foreign exchange risk that comes with it.

Adamu (2022) assessed how credit risk management affected the profitability of Deposit Money Banks in Nigeria. Ex-post facto research design is employed in this work, and panel regression analysis was performed. The analysis revealed that non-performing loans have a negative significant impact on profitability, loan to deposit ratios have a negative insignificant impact on profitability, loan loss provisions have a positive significant impact on profitability, and capital adequacy ratios have a negative insignificant impact on the profitability of deposit money banks in Nigeria. Credit risk management was measured by non-performing loans, loan to deposit ratios, loan loss provisions, and capital adequacy ratios. Profitability was measured by return on asset. According to the study's findings, Nigerian deposit money banks' profitability is significantly impacted by credit risk management. In order to reduce the number of nonperforming loans, the research advises Nigerian deposit money bank management to take precautions against the danger of adverse selection while making loan advances. Good credit evaluation practices, strong internal control frameworks, diversification, and initiatives to raise the quality of the assets on the balance sheets may all help achieve this.

Suyanto (2021) analyzed the effect of bad credit and liquidity on bank performance with the mediation of capital adequacy. The results of the research show that the effect

of bad credit and liquidity on bank performance is not significant. A high level of bad credit is associated with a low level of bank performance. Bank earnings decline along with low profitability. This relationship is not significant because banks can still cover some proportions of bad credit through capital availability. Capital adequacy as an intervening variable has mediated partially the effect of bad credit and liquidity on bank performance. Besides, capital adequacy has a strong effect on credit distribution. Agency theory says that the owner of the fund (the savers of saving account, current account, and deposit account) is called principal while the bank as the trusted institution to manage the fund is called an agent. If customers fulfill their duty, then bad credit never happens.

Nguyen and Nguyen (2020) examined the impact of credit risk management on the financial stability of Vietnamese commercial banks. The objective of the study was to examine the relationship between credit risk management and the financial stability of Vietnamese commercial banks, using data from 2010 to 2019. The research methodology empoyed was panel data regression model with fixed effects, random effects, and Hausman tests. The sample size is 28 commercial banks. In this research they found that credit risk management has a significant and positive impact on the financial stability of Vietnamese commercial banks, and that the impact varies depending on the type of bank and the level of economic development. The study also provides some policy implications and recommendations for improving credit risk management and enhancing financial stability in Vietnam.

Otwoko and Maina (2021) analyzed the effect of liquidity risk on the profitability of Deposit-taking Savings and Credit Cooperative Organizations (DT SACCOs) in Kenya. The study used a descriptive survey design and employed regression methods to model the relationship between liquidity risk and profitability of DT SACCOs. The data were analyzed at a 5% level of significance. The study findings revealed that at a 5% level of significance, liquidity risk had a statistically significant influence on the profitability of deposit-taking SACCOs. Based on the findings, DT SACCOs are encouraged to focus on enhancing the mobilization.

Effiong and Ejabu (2020) evaluated of establishing the extent of concern of consumer goods companies in the management of their liquid cash, cash defensive intervals, long term debts, and quick ratios, for the purpose of turning around their profitability. Analyses were done using multiple regression analysis methods and findings show that

long term debts, quick ratios, and cash defensive intervals have a significant effect on Earning Per Share and Return on Assets, while cash ratio and long-term debts affect Return on Capital Employed only. Specifically, it was empirically established that there exists a significant relationship between liquidity risk management and the profitability of consumer goods companies. Findings, further reveal that companies non-concerned attitude to liquidity risk management affects the profitability of consumer goods companies significantly. The study recommends that consumer goods companies should incorporate a clear liquidity risk management approach in their strategic policy framework and communicate the same to all functional units.

Abu-Alrop (2020) explored the effect of credit risk on the performance of Russian commercial banks. The study concluded that the effect of credit risk on the performance of Russian banks is not a fixed effect but a changing one from one year to another, but in cases where credit leaves an impact on performance indicators this effect is often negative and significant. The study also concluded that the quality of credit has a significant and negative impact on performance indicators, but the volume of the credit has a limited impact.

Mustafa (2020) analyzed the impact of Liquidity Shortage Risk (LSR) on the profitability of Islamic Commercial Banks (ICBs). The main findings revealed that current deposits to total deposits, total finance to total deposits and inflation negatively affected the profitability. While liquid assets to total assets have positive influence to the performance of ICBs. Monetary policy indirectly contributed to the exposure of ICBs to LSR through money supply increase. Moreover, high inflation motivated depositors to high cash withdrawal from their deposits; and, consequently exposed ICBs to LSR. The study recommends that ICBs should not wholly depend on current deposits as a source of finance, because customers′ default might lead to LSR resulting in deteriorating profitability. Moreover, diversification of financial assets (with high liquidity) protects them from LSR. As for the central bank, the contractionary monetary policy is a crucial to control inflation in order to improve the profitability of ICBs.

Winoto and Bustaman (2020) analyzed the effect of liquidity, ownership, and global financial crisis on Indonesian Banking profitability. For liquidity, liquidity ratio, loan to funding ratio, and cash ratio were used. Meanwhile ownership and global financial crisis used dummy variable. Ordinary Least Square method were used with Net Interest Margin as dependent variable, a control variable, and capital adequacy ratio. The result

finds that there is no significant connection between liquidity and ownership on profitability, while crisis has significant connection on profitability.

Al-Gamal (2019) examined the banks face many risks that must deal with sensitively in accordance with the instructions of decision makers in the banking sector. In the forefront of these risks is credit risk that considers as one of the banks' main activates, which in case of ignoring would lead to many problems to the bank or rather to bankruptcy. This study aims to highlights on credit risk management review, to find out the importance of credit risk management, to examine credit risk management techniques. The study recommended that banks have to focus on credit risk management and improve the techniques of mitigating credit risk. The objectives of the study are, to highlights the credit risk management review, to find out the importance of credit risk management. The study concluded that Credit risk management is very important in banks and it has to include many techniques to mitigate risks, therefore good Credit risk management lead to raise a bank's performance and vice versa. The study showed that the Banking industry in Yemen is considered as the weakest industry in the MENA region and the Middle East, so banks have to improve its techniques to mitigate risk.

Nwude and Okeke (2018) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria using five banks that had highest asset base. In this regard the main objective of this study is to critically evaluate the effect of credit risk management on the performance of selected Nigerian commercial banks. In line with this, the specific objectives of the study are to ascertain the impact of credit risk management on (i) total loans and advances (ii) return on assets (ROAs) (iii) return on equity (ROE) of the selected deposit money banks in Nigeria. The findings from the specific objectives of this study are that credit risk management had a positive and non-significant impact on total loans and advances, the ROA, ROE of the selected deposit money banks in Nigeria. In line with the findings of this study, we recommend bank managers need to put more efforts to the credit risk management by critically evaluating borrowers' ability to pay back. There is need to strengthened bank lending policy through effective and efficient regulatory supervision and monitoring when facility is given out especially during utilization of the facility by the borrower. Banks should try as much as possible to strike a balance in their loan pricing decisions. This will help

them to be able to cover cost associated with lending and at the same time, maintain good banking relationship with their borrowers.

Al-shakrchy (2017) investigated the impact of credit- risk exposure management on bank profitability of the major commercial banks in Sweden with special emphasis on the financial crisis of 2008. We empirically test whether risk managing in ways to substantially reducing the probability that defaulting loans and how the Swedish bank may keep out credit crisis with their credit activities. The purpose of the study was to find out the main issues arising from the bank lending activities that have had a serious impact on the banking industry and the financial instability. Furthermore, the paper explores whether credit exposure manage procedures are changed during financial crisis. We find that successful practices of credit risk management in Swedish banks are likely to improve the availability of bank credit.

Konovalova (2016) examined 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.

Kodithuwakku (2015) analyzed the impact of credit risk management on the performance of commercial banks in Sri Lanka," aimed to identify the influence of credit risk management on the performance of commercial banks in Sri Lanka. Conducting panel data analysis on eight commercial banks from 2009 to 2013 using E-views software, the study found that non-performing loans and provisions have an adverse impact on the profitability of the banks. In response, the study recommends the implementation of effective tools and techniques to mitigate credit risk and enhance the overall performance of commercial banks in Sri Lanka. These insights contribute valuable information for policymakers and practitioners in the financial sector, guiding efforts to optimize credit risk management strategies for sustained profitability.

Abiola and Olausi (2014) investigated how credit risk management influences the performance of commercial banks in Nigeria. Utilizing a panel regression model based on the financial reports of seven commercial banking firms over the period 2005 to 2011, the study yielded significant findings. Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) were identified as critical factors impacting the performance of commercial banks in Nigeria. Specifically, NPL exhibited a negative impact, whereas CAR had a positive influence on both Return on Equity (ROE) and Return on Asset (ROA). This research contributes valuable insights into the intricate dynamics between credit risk management and the overall performance of commercial banks in the Nigerian context.

Mwangi (2012) analyzed the impact of credit risk management on the profitability of commercial banks in Kenya. Employing a descriptive research design and utilizing secondary data from the annual reports of 26 commercial banks spanning 2007-2011, the study employed multiple regression analysis with return on equity (ROE) as the dependent variable and non-performing loans ratio (NPLR) and capital adequacy ratio (CAR) as independent variables. The findings indicated that both Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) significantly influenced the performance of commercial banks in Kenya. Specifically, NPL exhibited a negative impact, while CAR had a positive effect on both Return on Equity (ROE) and Return on Asset (ROA). This research contributes valuable insights into the intricate dynamics between credit risk management and the profitability of commercial banks in the Kenyan context.

Kithnhi (2010) investigated in his study titled "Credit Risk Management and Profitability of Commercial Banks in Kenya," the relationship between credit risk management and the profitability of commercial banks in Kenya. Using secondary data on credit amounts, non-performing loans, and profits from 2004 to 2008, the study employed a regression model to analyze these critical variables. The findings unveiled a fluctuating trend in credit levels, peaking in the early years of Basle II implementation and subsequently declining in 2007 and 2008. The proportion of non-performing loans to total loans showed a consistent decrease during this period. This suggests that the implementation of Basle II requirements may have played a pivotal role in enabling commercial banks to effectively manage and reduce their non-performing loans, thereby influencing the overall credit risk landscape.

**Table 1**

*Summary of Empirical Review*

| S.N | Author | Objectives | Methodology | Major Findings |
|---|---|---|---|---|
| 1 | Temba et al. (2024) | Examined the impact of credit risk management on the financial performance of Tanzanian commercial banks. | Used 255 observations from 2003 to 2019 from a balanced panel of fifteen commercial banks. | Risk assessment, approval, supervision, and monitoring positively impact asset quality, equity use, and capital adequacy but negatively impact earning capacity and liquidity. |
| 2 | Natufe and Evbayiro-Osagie (2023) | Analyzed the credit risk management and return on equity of Nigerian deposit money banks (DMBs). | Panel data regression analysis with variables like size, non-performing loans ratio, loan loss provision ratio, etc. | Size, non-performing loans ratio, risk asset ratio, and capital adequacy ratio are significant factors of return on equity. Offshore borrowings are heavily relied upon. |
| 3 | Adamu (2022) | Assessed how credit risk management affected the profitability of Deposit Money Banks in Nigeria. | Ex-post facto research design and panel regression analysis. | Non-performing loans negatively impact profitability, loan loss provisions positively impact profitability, and capital adequacy ratios have a negative insignificant impact on Profitability. |
| 4 | Otwoko and Maina (2021) | To analyzed the effect of liquidity risk on | The study used descriptive survey research design. | The study findings revealed that at a 5% level of significance, |

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| | | the profitability of Deposit-taking Savings and Credit Cooperative Organizations (DT SACCOs) in Kenya. | Primary data was collected from the sampled 223 DT. Variables: Loans to Deposits Ratio Cash Position Indicator Capacity Ratio Total deposits ratio, Returns on Assets Return on Investments Divided per Share | liquidity risk had a statistically significant influence on the profitability of deposit-taking SACCOs. Basing on the findings, DT SACCOs are encouraged to focus on enhancing the mobilization of deposits to ensure that an asset portfolio that minimizes liquidity risk is maintained. |
| 5 | Suyanto (2021) | The objective of this research is to analyze the effect of bad credit and liquidity on bank performance with the mediation of capital adequacy. | Data were provided by banking institutions listed on the Indonesia Stock Exchange from the period of 2011-2019. The analysis technique was PLS-SEM supported by an application named WarpPLS 6.0. | The results of the research show that the effect of bad credit and liquidity on bank performance is not significant. A high level of bad credit is associated with a low level of bank performance. Bank earnings decline along with low profitability. |
| 6 | Winoto and Bustaman (2020) | The purpose of the research was to analyse the effect of liquidity, ownership, and global financial crisis on | Data were retrieved from Indonesia Bank regulator which is Otoritas Jasa Keuangan's website. For liquidity, liquidity ratio, loan to funding ratio, and | The result finds that there is no significant connection between liquidity and ownership on profitability, while crisis has significant connection on profitability. |

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| | | Indonesian Banking profitability. | cash ratio were used. Meanwhile ownership and global financial crisis used dummy variable. | |
| 7 | Mustafa (2020) | The paper aims to examine the impact of Liquidity Shortage Risk (LSR) on the profitability of Islamic Commercial Banks (ICBs) in Sudan (1992-2018). | The following explanatory powers were used to indicate LSR; which include: liquid assets to total assets, total finance to total deposits, current deposits to total deposits and inflation as a control factor. | The main findings revealed that current deposits to total deposits, total finance to total deposits and inflation negatively affected the profitability. While liquid assets to total assets have positive influence to the performance of ICBs. Monetary policy indirectly contributed to the exposure of ICBs to LSR through money supply increase. |
| 8 | Abu-Alrop and Kokh (2020) | This study examined the effect of credit risk on the performance of 85 Russian commercial banks during the period (2008–2017). | This study used multiple regression to measure the effect of credit risk on the performance of Russian banks. The study found that the Performance indicators were affected by credit risk in five years out of ten. | the study found that the effect of the ratio of loan loss provisions to total loans was negative and greater than the positive impact of the ratio of total loans to total assets because the impact of credit quality is greater and more important than the impact of its volume. |

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| 9 | Effiong and Ejabu (2020) | This study was aimed at establishing the extent of concern of their liquid cash, cash defensive intervals, and quick ratios, for the purpose of turning around their profitability. | Analyses were done using multiple regression analysis methods | Findings further reveal that companies non-concerned attitude to liquidity risk management affects the profitability of consumer goods companies significantly. The study recommends that consumer goods companies should incorporate a clear liquidity risk management approach in their strategic policy framework and communicate the same to all functional units |
| 10 | Al-Gamal (2019) | The objectives of the study are, to highlights the credit risk management review, to find out the importance of credit risk management. | Multivariate regression analysis | The study showed that the Banking industry in Yemen is considered as the weakest industry in the MENA region and the Middle East, so banks have to improve its techniques to mitigate risk. |
| 11 | Nwude (2018) | The objective of this study is to critically evaluate the effect of credit | This study is based on the secondary data. The liquidity indicators are credit-deposit ratio (CDR), | The findings of this study are that credit risk management had a positive and non-significant impact on |

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| | | risk management on the performance of selected Nigerian commercial banks. | cash-deposit ratio (CADR) and assets quality (AQ), while return on equity (ROE) and return on assets (ROA) are the proxies for profitability. | total loans and advances, the ROA, ROE of the selected deposit money banks in Nigeria. |
| 12 | Al-shakrchy (2017) | The purpose of the study was to find out the main issues arising from the bank lending activities that have had a serious impact on the banking industry and the financial instability. | The regression model and Comparative Analysis | The paper explores whether credit exposure manage procedures are changed during financial crisis. We find that successful practices of credit risk management in Swedish banks are likely to improve the availability of bank credit. |
| 13 | Konovalova (2016) | 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 | This study is based on the secondary data. Data were pooled for 7 years from 2007/08 to 2013/14 for 18 commercial banks in Nepal and the data have been obtained from annual reports of respective sample banks. The ordinary | 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. |

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| | | to improve the management of banking risks. | least square method has been used. | |
| 14 | Kodithuwakku (2015) | To identify the impact of credit risk management on the performance of the commercial banks in Sri Lanka | Panel data analysis of eight commercial banks from 2009 to 2013, using E-views software | Non-performing loans and provisions have an adverse impact on the profitability of the banks. Effective tools and techniques are recommended to reduce the credit risk. |
| 15 | Abiola and Olausi (2014) | To investigate the impact of credit risk management on the performance of commercial banks in Nigeria | Panel regression model using financial reports of seven commercial banking firms for seven years (2005 – 2011) | The study found that both Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) have significant impacts on the performance of commercial banks in Nigeria. Specifically, NPL has a negative impact while CAR has a positive impact on both Return on Equity (ROE) and Return on Asset (ROA). |
| 16 | Mwangi (2012) | To establish the effect of credit risk management on the profitability of commercial banks in Kenya | The study used a descriptive research design and secondary data collected from the annual reports. The multiple regression analysis was | The study found that both Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) have significant impacts on the performance of commercial banks in Nigeria. Specifically, |

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| | | | employed to investigate the relationship between variables. | NPL has a negative impact while CAR has a positive impact on both Return on Equity (ROE) and Return on Asset (ROA). |
| 17 | Kithinji (2010) | To determine the relationship between the credit risk management and profitability of commercial banks in Kenya. | The study used secondary data on the amount of credit, level of non-performing loans, and profits from 2004 to 2008. A regression model was used to analyze the relationship between these variables. | The findings reveal that the level of credit was high in the early years of the implementation of Basle II but decreased significantly in 2007 and 2008. The level of non-performing loans given by non-performing loans to total loans decreased during the period 2004 to 2008. The requirement by the Basle II might have enabled commercial banks to control their level of non-performing loans thus reducing banks' credit risk. |

### 2.3.1 Review of Literatures in Nepalese Context

Bagale (2023) analyzed the credit risk management of Nepalese commercial banks. This study found that bank size and liquidity ratio positively affected ROE, while cash reserve ratio, capital adequacy ratio, loan loss provision ratio, and non-performing loan ratio had a negative impact. Effective credit risk management is crucial for bank stability and financial success, benefiting both employees and shareholders. The study used data from 2011 to 2020 from 15 banks, highlighting the significant influence of credit risk management on Nepali commercial banks' profitability.

Khati (2020) examined the impact of liquidity on profitability of Nepalese commercial banks and investigated the relationship between the liquidity and the profitability of commercial banks in Nepal. Ten out of Twenty-seven listed commercial banks were involved in the study covering the period from 2013 to 2019. This study was based on the secondary data, which were extracted from Bank Supervision Reports published by Nepal Rastra Bank and annual reports of the selected commercial banks. The liquidity indicators were credit-deposit ratio (CDR), cash-deposit ratio (CADR) and assets quality (AQ), while return on equity (ROE) and return on assets (ROA) are the proxies for profitability. By using Hausman test and thereafter fixed effects approach, the result showed that assets quality (AQ) had negative and significant relationship with return on assets (ROA) whereas it had positive and significant relationship with return on equity (ROE). Cash-deposit ratio (CADR) had positive and insignificant relationship with return on assets (ROA) and return on equity (ROE). However, the study revealed that credit-deposit (CDR) had positive but insignificant relationship with ROA and had negative and insignificant relationship with return on equity (ROE).

Pandey (2019) analyzed the lending system of the bank, to examine the import of growth in deposit on liquidity and lending practices, to assess Credit practice of the bank, to explore the relationship with loan and advances and net profit of the bank and to provide suggestions and recommendations for the improvement based on the findings of this study. The major findings are at the time of financial reengineering process of NBL, loan investment policy has been brought. New policy of lending focuses on cash flow lending by passing out collateral based. Liquidity Position of NBL seems strong. It is obvious that is the present situation of the country, investment potential is not favorable, so the liquidity is sufficient in bank. Most of the banks are of Nepal nowadays are focusing on consumer lending NBL also falls on the same category. This is because of loadshedding. NBL has invested money in growing credit and advances but the recovery process of the bank is slow. Efficiency in management is not satisfactory. Most of the credit customers of NBL are satisfied with the banks.

Poudel (2018) investigated the major indicators of credit risk among the Nepali commercial banks. The study is conducted using the sample of 15 commercial banks operated in Nepali economy. The analysis further confirmed that bank size and interest spread both have no any clear direction of impact on credit risk. Moving towards the GDP growth, credit risk in Nepali commercial banks is negatively fluctuates with GDP

growth, however, the statistics shows the coefficients are insignificant at 5% level. Contrarily, Inter-bank interest rate has insignificant negative impact in credit risk in Nepali commercial banks.

Silwal (2018) examined 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 2016/17. One-way Fixed Effect Model (FEM) of panel data analysis is used as a major tool of analysis. This study is conducted specially with the aim of investigating the impact of non- performing loan, bank specific variables, and macroeconomic variables on profitability of commercial banks in Nepal. The study reveals that non-performing loan ratio has the significant negative impact on profitability of commercial banks in Nepal. In addition, 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.

Malla (2017) analyzed the loan portfolio management of Nepalese BAFI, to examine the effect of the loan portfolio management in bank's performance, to examine the factors influencing loan portfolio management in Nepalese BAFI. This study found that, selected commercial banks have managed their loan portfolio as per the standard parameter of NRB directives 2073. All banks have maintained limit of Real estate loan $\leq$ 25% of total loan, Deprived sector loan $\geq$ 4.5% of total loan, Non-performing loan $\leq$ 5% of total loan, Sector wise loan portfolio $\leq$ 40% of total loan & managed credit risk. Banks Non-performing loan shows that, banks are maintaining good credit risk management practice. However, 96.41% of bank's lending is on collateral basis which indicates that, banks are conservative in lending. The power of microfinance companies especially commercial banks to create money is of great importance in business operations. Commercial banks are the major financial intermediaries in any economy and they are the major providers of credits to the household and corporate sector. They deal with both retail and corporate customers, have well diversified deposit and lending book and generally offer a full range of financial services. The policy of commercial banks to make money results in the elastic credit system that is necessary for economic progress at relatively steady rate of growth. Particularly, banks make profits by selling liabilities with one set of characteristics (a particular combination of liquidity risk and

return) and using the proceeds to buy assets with different set of characteristics i.e. asset transformation.

Bhattarai (2017) investigated the impact of credit risk on performance of Nepalese commercial banks. An unbalance panel data of fourteen commercial banks with 77 observations for the period of 2010 to 2015 have been used for the analysis. The regression model revealed that NPL has negative and statistically significant impact on bank performance. Cost per loan assets and bank size have positive and statistically significant impact on bank performance. The findings of this study indicate that the sampled commercial have poor credit risk management practices. This is evidenced by the insignificant result of 'capital adequacy ratio' and the negative coefficient of 'non-performing loan ratio.

Acharya (2017) examined the main issues arising from the bank lending activities that have had a serious impact on the banking industry and the financial instability. Furthermore, the paper explores whether credit exposure manage procedures are changed during financial crisis. We find that successful practices of credit risk management in Swedish banks are likely to improve the availability of bank credit. Data Analysis of Swedish commercial banks for pre- crisis period. This study shows that there is a significant impact of credit risk management (in terms of loan performance) on banks' profitability (in terms of ROE). Therefore, the techniques of credit risk management determine the profitability level to a considerable extent.

Upreti (2016) analyzed the functions, procedures and activities of commercial banks credit policy, to analyze the credit and advances provided by commercial bank, to analyze the recovery status of credit disbursed, to find out the strength and weakness in credit administration of commercial banks. The major findings are Average loan and advances ratio of NIBL and NIC is 0.71 and 0.78.NIC has maintained higher loan and advances to total deposit which shows that NIC seems to be strong to mobilize its total deposit as loan and advances. All banks are capable to use more than 50% of deposit on loan and advances. if maintained this, it helps to make consistency on the profitability of banks. The average interest income to loan and advances of NIB is0.05. Ratio of NIB does not show clear direction. Average interest income to loan and advances ratio of NIC is 0.041 and in terms of the average ratio of NIB has best performance.

Shrestha (2015) examined the impact of credit risk management on profitability of Nepalese commercial banks. The profitability in terms of return on assets and return on equity are selected as dependent variables. Capital adequacy ratio, non-performing loan ratio, cost per loan assets, cash reserve ratio, and assets growth ratio and leverage ratio are taken as independent variables. The result shows that capital adequacy ratio, cost per loan assets and assets growth ratio are positively related with return on assets and return on equity. This study is based on the secondary data. Data were pooled for 7 years from 2007/08 to 2013/14 for 18 commercial banks in Nepal leading to a total of 126 observations. The secondary data have been obtained from annual reports of respective sample banks, supervision report published by Nepal Rastra Bank and annual reports of respective banks. The ordinary least square method has been used to measure the relationship between bank performance and credit risk variables. The research design adopted in the study is descriptive and causal comparative. Itindicates that higher the capital adequacy ratio, higher would be the return on assets and return on equity. Similarly, increase in cost per loan assets leads to an increase in return on assets and return on equity. Likewise, higher the assets growth ratio, higher would be the return on assets and return on equity. The results also show that non-performing loan ratio, cash reserve ratio and leverage ratio are negatively related with return on assets and return on equity which reveals that increase in non-performing loan ratio leads to decrease in return on assets and return on equity.

Subedi (2013) analyzed the volume contribution made by sample banks in credit and advances, to analyze the mobilization of deposit in credit of sample Banks, to studythe relationship of deposit, loan and advances and net profit of sample banks, to provide suitable suggestions for effective credit management. The major findings are HBL has disbursed highest credit and advances than others. HBL has utilized the total deposit maximally than other banks in granting loan and advances. SCBNL has remained more effective in managing credit to gain highest interest income. The interest income on credit and advance to total assests has indicated that Credit and advances is major source of income in banks.

Gurung (2013) analyzed the trend of liquid assets maintained by the selected banks, to evaluate the cash reserve ratio maintained by the commercial banks, to analyze the credit and advances provided by the commercial banks, to find out the strength and weakness in the credit administration of the selected banks. The Major findings are the

current ratio of HBL is slightly higher than NIBL. This indicates the HBL ability to meet its obligation due in one year is better than NIBL. Similarly, the lesser SD and CV of HBL indicate that the current ratio maintained by HBL is less risky and has more uniform variability than NIBL. NIBL has always maintained a slightly higher CRR than the NRB requirements. This has resulted NIBL higher levels of CRR than compared to HBL. This indicates that liquidity maintained by NIBL is sounder than HBL. The higher SD of NIBL indicates that more CRR always come with more risk which decrease the profitability of banks. On the contrary, HBL has not maintained its CRR as NRB.

Poudel (2012) investigated various parameters pertinent to credit risk management as it affects banks' profitability. Such parameters covered in the study were; default rate, cost per loan assets and capital adequacy ratio. The result show that there is negative relationship between return on assets and cost per loan assets however, the relation is not statistically significant which indicates that there is no any relationship between cost per loan assets and performance.

Ghimire (2012) examined were to see credit practices of sample banks, to examine efficiency of selected banks, to find out strength and weakness in credit administration. The major findings are BOK has maintained higher credit and advances to total deposit. Fixed deposit is the main source of granting credit for both banks. Credit loss provisioning is in decreasing trend so, it indicates efficient credit policy. Interest rate effects amount of deposit, which is turn affect credit.

**Table 2**

*Summary of Literature Review in Nepalese Context*

| S.N. | Author | Objectives | Methodology | Major Findings |
|---|---|---|---|---|
| 1 | Bagale (2023) | To analyze the effect of credit risk indicators on profitability of Nepali commercial banks | The study used descriptive and causal comparative research design using secondary data from 15 commercial banks | The study revealed that capital adequacy and liquidity ratios significantly affect return on equity, while loan loss provision, cash reserve, and bank size have minimal impact. |

| | | | | |
|---|---|---|---|---|
| | | measured by return on equity | for the period of 2011 to 2020. A pooled OLS model of panel data. | |
| 2 | Khati (2020) | This paper seeks at investigating the relationship between the liquidity and the profitability of commercial banks in Nepal | This study is based on the secondary data. The liquidity indicators are credit-deposit ratio (CDR), cash-deposit ratio (CADR) and assets quality (AQ), while return on equity (ROE) and return on assets (ROA) are the proxies for profitability. By using Hausman test and thereafter fixed effects approach. | The result showed that assets quality (AQ) has negative and significant relationship with return on assets (ROA) whereas it has positive and significant relationship with return on equity (ROE). Cashdeposit ratio (CADR) has positive and insignificant relationship with return on assets (ROA) and return on equity (ROE) |
| 3 | Pandey (2019) | The objectives of this study are to examine the import of growth in deposit on liquidity and lending | This study is based on the secondary data. The liquidity indicators are credit-deposit ratio (CDR), cash-deposit ratio | . The major findings are at the time of financial reengineering process of NBL, loan investment policy has been brought. New policy of lending focuses on cash flow lending by passing out |

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| | | practices, to assess Credit practice of the bank. | (CADR) and assets quality (AQ). Analyses were done using multiple regression analysis methods. | collateral based. Liquidity Position of NBL seems strong. |
| 4 | Silwal (2018) | This study is conducted specially with the aim of investigating the impact of non-performing loan, bank specific variables, and macroeconomic variables on profitability of commercial banks in Nepal. | One-way Fixed Effect Model (FEM) of panel data analysis is used as a major tool of analysis. | The study reveals that non-performing loan ratio has the significant negative impact on profitability of commercial banks in Nepal. In addition, solvency ratio, interest spread rate, and inflation have the insignificant negative impact on profitability. |
| 5 | Poudel (2018) | The objectives of this study are to identify the major indicators of credit risk among the Nepali | Descriptive financial ratio analysis | The analysis confirmed that bank size and interest spread both have no any clear direction of impact on credit risk. Moving towards the GDP growth, credit risk in Nepali commercial banks is negatively |

| | | | | |
|---|---|---|---|---|
| | | commercial banks. | | fluctuates with GDP growth, however, the statistics shows the coefficients are insignificant at 5% level. |
| 6 | Acharya (2017) | This paper explores whether credit exposure manage procedures are changed during financial crisis. | Data Analysis of Swedish commercial banks for pre- crisis period. Comparative Research Approach | This study shows that there is a significant impact of credit risk management (in terms of loan performance) on banks' profitability (in terms of ROE). Therefore, the techniques of credit risk management determine the profitability level to a considerable extent. |
| 7 | Bhattarai (2017) | The objective of this study is to examine the impact of credit risk on performance of Nepalese commercial banks. | An unbalance panel data of fourteen commercial banks with 77 observations for the period of 2010 to 2015 and the regression model have been used for the analysis. | The results imply ratios employed in this study have different effects on the performance of banks in both countries, except credit and capital ratios. Operating ratio influence performance of banks in China, but this influence is not true for Malaysian banks regardless of the measure of the performance. |
| 8 | Malla (2017) | The objectives of this study is to know loan | The regression model and | This study found that, selected commercial banks have managed |

| | | | | |
|---|---|---|---|---|
| | | portfolio management of Nepalese BAFI ans to examine the factors influencing loan portfolio management in Nepalese BAFI. | Comparative Analysis | their loan portfolio as per the standard parameter of NRB directives 2073. All banks have maintained limit of Real estate loan ≤ 25% of total loan, Deprived sector loan ≥ 4.5% of total loan, Non-performing loan ≤ 5% of total loan, Sector wise loan portfolio ≤ 40% of total loan & managed credit risk. |
| 9 | Upreti (2016) | To assess credit policies, evaluate advances, scrutinize recovery, and identify strengths and weaknesses in commercial banks. | Utilized financial ratios for NIBL and NIC. Explored loan and advances to total deposit and conducted a comparative analysis. Evaluated interest income to loan and advances ratios for NIB and NIC. | The study revealed that distinct credit policies observed with NIBL and NIC having average loan and advances ratios of 0.71 and 0.78, respectively. |
| 10 | Shrestha (2015) | To examine the impact of credit risk management on the profitability of Nepalese commercial | Utilized secondary data from annual reports, supervision reports. Employed ordinary least square method for relationship | The study shows positive relationships between capital adequacy ratio, cost per loan assets, and assets growth ratio with return on assets and return on equity. |

| | | | | |
|---|---|---|---|---|
| | | banks, focusing on return on assets and return on equity. | measurement. Adopted a descriptive and causal comparative research design. | |
| 11 | Subedi (2013) | The objective of the study is to examine credit and advances, analyze deposit mobilization, study deposit-loan-profit relationship, and suggest effective credit management. | Utilized secondary data from annual reports, supervision reports and used data analysis on credit volume, deposit mobilization, and deposit-loan-profit relationship for sample banks. | The study shows that the HBL exhibited efficient credit distribution by disbursing the highest amount, utilizing total deposits for loans. SCBNL demonstrated effective credit management, resulting in the highest interest income |
| 12 | Gurung (2013) | The objective of the study was to analyze trends in liquid assets, evaluate cash reserve ratios (CRR), analyze credit and advances, and identify strengths and | Utilized secondary data from annual reports, supervision reportsand conducted analysis on current ratios, standard deviation (SD), and coefficient of variation (CV) for HBL and NIBL, | HBL exhibits a slightly higher current ratio than NIBL, indicating a better ability to meet short-term obligations. Additionally, The study revealed a negative relationship between return on assets and cost per loan assets. However, the lack of statistical significance indicates no substantial correlation between cost per loan assets and |

| | | | | |
|---|---|---|---|---|
| | | weaknesses in credit administratio n for selected banks. | comparing their CRR with NRB requirements. | profitability. HBL's lower SD and CV suggest a less risky and more consistently variable current ratio compared to NIBL |
| 13 | Poudel (2012) | The aim of the study was to explore credit risk management parameters (default rate, cost per loan assets, and capital adequacy ratio) and their impact on banks' profitability. | Utilized secondary data from annual reports, supervision reports and examined various parameters related to credit risk management, including default rate, cost per loan assets, and capital adequacy ratio. | The study revealed a negative relationship between return on assets and cost per loan assets. However, the lack of statistical significance indicates no substantial correlation between cost per loan assets and profitability. |
| 14 | Ghimire (2012) | Examine credit practices of sample banks, assess the efficiency of selected banks, and identify strengths and weaknesses in credit | Conducted analysis on credit and advances, efficiency, and credit administration for sample banks. | The study revealed that interest rates influence deposit amounts, subsequently affecting credit practices. BOK exhibits a higher credit-to-total deposit ratio, with fixed deposits being the primary source for granting credit. The decreasing trend in credit loss provisioning suggests an efficient credit policy. |

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| | administratio<br>n. |

## 2.4 Research Gap

Since the above-mentioned studies offer limited findings, more extensive testing, and adjustment of necessary variables are needed in ordered to be more conclusive about the credit management. Previous studies were directed to find the effect of the credit management of different commercial bank. Presently, this study aims to attempt to study about credit management of Microfinance companies in Nepal. The previous relevant literature related to banking business has just reviewed to support the study. In previous study, they failed to study the perfect credit management of Nepalese Microfinance companies. This study tries to fulfill this weakness. And there is also less research made in this topic especially in banking sector.

Credit management has very big role to sustain any banking business. It is equally important to identify the relation of performance of the banking business. So, it tries to assess the credit management of banking sector and by providing the proper atmosphere for the banking market in our country. The present study is based on ten years data of two Microfinance companies, which tries to achieve its objectives by analyzing secondary source of data. Thus, the earlier studies on these issues need to be updated and validated because of many changes taking place in Nepalese banking sector.

# CHAPTER III

# RESEARCH METHODOLOGY

## 3.1 Research Design

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

## 3.2 Population and Sample

At present, there are 57 micro finance institutions are operating in Nepal until the mid of 2023 (NRB, 2023). All 57 financial institutions considered as the population of the study. In addition, among fifty seven microfinance companies' three highest profit earnings microfinance companies has been choosen for the study. The sample microfinance companies are First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta Limited. In this study convenience sampling technique was used. Ten years data are taken to conduct the study from 2013/14 to 2022/23.

## 3.3 Sources of Data

Data is very reliable and effective source for research. The study uses the secondary data to fulfill its objectives. Secondary data are those data that are collected by someone else or used already and made available to other in the form of published statistics such as annual reports, periodicals, newspapers, magazines etc. Once a primary data is used, it loses its originality and becomes secondary. This study is mainly depends on the use of secondary data that consists of annual reports of the concerned bank. Besides the

annual reports various other sources of data have also been used for the purpose of the study plan documents, newspaper, magazine, economic journals, NRB reports etc.

### 3.4 Instrument of Data Collection

The research is based secondary data. Descriptive and inferential data analysis is aimed to be calculated. To collect primary data questionnaire has used and to collect the secondary data Internet web sites, annual reports of listed companies has used. For mathematical analysis, various financial and statistical tools like average (mean), standard deviation, regression, correlation and etc. has used. Similarly, SPSS, Spreadsheet, Excel and word has used to perform calculation.

Data obtained from various sources cannot be directly used in their original form as they are raw data. When data will not be presented in understandable and easier way there would be no use of conducting research study or analysis of data. Analysis part would be difficult to understand to the readers without processing the data. So, to make the study understandable at the first sight data should be processed. A presentation of data means to keep raw data into understandable form by editing, rechecking and using various tools such as tables, charts, figures and trend lines. In this study data are also presented using all the necessary tools so as to make understand the analysis part in proper and easier way.

### 3.5 Methods of Analysis

The thesis will cover and include the financial and statistical tools to analyze the data in order to reach to the conclusion of the research. In order to get the concrete results from this research, data are analyzed, by using different types of tools. As per the topic requirement, emphasis is given on statistical tools, so for this study the following statistical tools are going to be used.

#### 3.5.1 Arithmetic Mean

Mean is the value, which represent the group of value and gives an idea about the concentration of value in the central part of the distribution. An average gives us a point, which is most representative of the data. It depicts the characteristics of the whole group. The value of arithmetic mean lies in between the two extreme observation of the entire data. It is an envoy of the mass homogeneous data.The value of the AM is obtained by adding together all the items by dividing this total by the number of items.

Mathematically,

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

### 3.5.2 Standard Deviation

The standard Deviation (σ) measure the absolute dispersion. The greater the standard deviation, greater will be magnitude of the deviations of the values form their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series and vice versa.

Mathematically,

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

### 3.5.3 Correlation Coefficient (r)

When the relationship is of quantitative nature, the appropriate statistical tools for discovering and measuring the relationship and expressing it, in a brief formula is known as correlation. If the values of the variables are directly proportional than, the correlation is said to be positive. On the other hand, if the values of the variable are inversely proportional, the correlation is said to be negative, but the correlation coefficient always remains within the limit of +1 to -1 by Karl Pearson, the simple correlation coefficient (between two variables, say X and Y) is given by,

$$r_{xy} = \frac{cov(X,Y)}{\sigma Z \sigma Y}$$

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

Where, $r_y$ is the correlation between two variables X and Y, 'r' lies always between +1 and -1

When 'r' = +1, there is perfect positive correlation. When 'r' = -1, there is perfect negative correlation. When 'r' = 0, there is no correlation.

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

When ‘r’ lies between 0.5 and 0.699, there is a moderate degree of correlation. When ’r’ is less than 0.5, there is low degree of correlation.

### 3.5.6 Regression Analysis

Regression is the statistical tool, with the help of which this ressrarch can predict the unknown value of one variable from known value of any other variable. Assuming that the two variables are closely related, we can estimate the value of one variable from the value of another. The variable, whose value is given, is called independent variable and the variable whose value is to be predicted is called dependent variable. Hence, regression determines the average probable change in one variable based on a certain amount of change in another. It is a statistical tool for determining relationship between the variables by the establishment of an approximate functional relationship between them. It is used to determine that whether the dependent variable is influenced by the given independent variable or not.

Regression analysis is a branch of statistical theory that is widely used in almost all the scientific disciplines.

**Multiple Regression Model**

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

$Y = \beta 0 + \beta\ Xit + eit$

Where, Y is the dependent variable; β0 is constant; β is the coefficient of explanatory variables; Xit is the vector of explanatory variables; and eit is the error term (assumed to have zero mean and independent across the time period). By adopting the prescribed econometric model, particularly to this study, the impact of credit risk (controlling the effect of cash reserve requirement and bank size) on the performance of the Microfinance companies has been estimated with the following regression equation:

$ROA_{it,} = \beta_0 + \beta_1\ CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4\ NIM_{it} + \beta_5\ TLTE_{it} + e_{it}$

$ROEit = \beta_0 + \beta_1\ CAR_{it} + \beta_2 NPLR_{it} + \beta_3 CRR_{it} + \beta_4\ NIM_{it} + \beta_5\ TLTE_{it} + e_{it}$

Where,

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

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

$CAR_{it}$ = Capital adequacy ratio of ith bank in year t

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

$CRR_{it}$ = Cash reserve ratio of ith bank in year t

$NIM_{it}$ = Net Interest Margin of a company of ith bank in year t

$TLTE_{it}$ = Total Loan to Total Equity of a company of ith bank in year t

$B_0$ = the intercept (constant)

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

$e_{it}$ = error component

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

**Table 3**

*Variable's definition*

| No. | Abbreviation variables | Description | Measurement |
|---|---|---|---|
| 1. | CAR | Capital adequacy ratio | Tier 1 capital + Tier 2 capital/ Risk weighted Assets |
| 2. | NPLR | Non-performing loan ratio | NPAs/Total loans and advances |
| 3. | CRR | Cash reserve ratio | Cash reserve ratio of $i^{th}$ bank in year t |
| 4. | NIM | Net Interest Margin | Net Interest margin of a company of $i^{th}$bank in year t |
| 5. | TLTE | Total Loan to Total Equity | Total Loan to Total Equity of a company of $i^{th}$ bank in year t. |

### 3.6 Research Framework and Definition of Variables

The theoretical framework is the basis or foundation upon which the study is established. It is within the framework of this theory that the entire story proceeds. This framework is design to understand the effect of credit risk on profitability. In view of theories and evidence, it is expected that the profitability may be influenced by credit risk. The theoretical framework is developed to test the impacts of variables on the credit risk of Microfinance companies of Nepal.

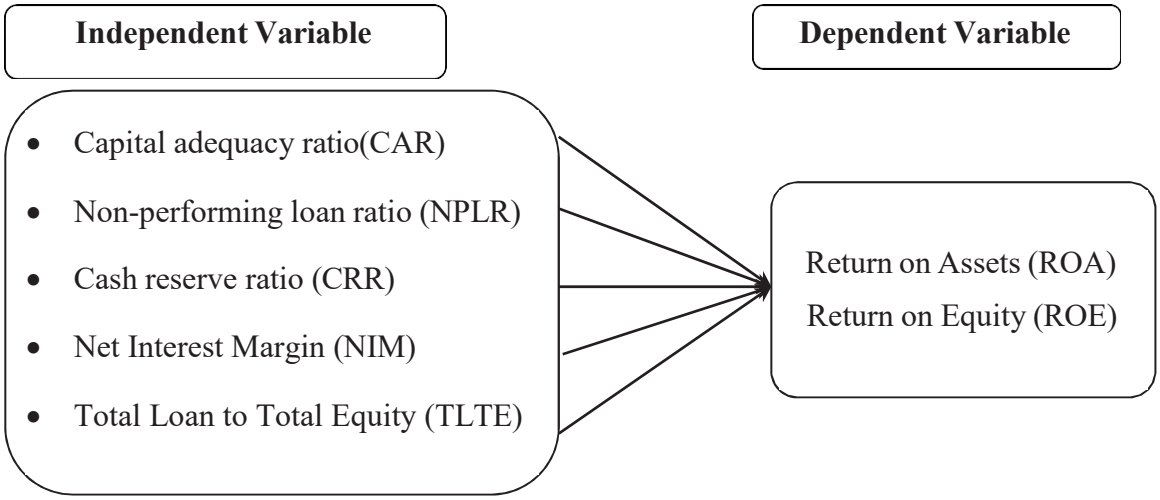


*Figure 1* Research Framework

Source: Lalon and Moeshada (2020)

**Dependent Variable**

**Return on Assets (ROA)**

Return on Assets (ROA) is a financial metric used to assess a company's or institution's profitability by measuring the efficiency of its utilization of assets in generating earnings. It is calculated by dividing the net income by the average total assets during a specific period. ROA indicates how effectively a company can generate profit from its available assets. Therefore, ROA is one of the metrics which can be used to assess the performance of the microfinance companies. The measures of bank performance may be varied and the choice of the specific performance measure depends on the objective of the study. In theoretical literature the performance measures could be found such as: traditional measures of performance (ROA - return on assets, ROE - return on equity, cost to income ratio, net interest margin), economic measure of performance (EVA- economic value added, RAROC- risk adjusted return on capital) and market-

based measure of performance (total share return, price- earnings ratio, price-to-book value, credit default swap). Thus, choice of the best measure of performance is tedious task. Moreover, studying the bank performance concept may generate different results depending on the nature of the stakeholders which analyze the term.

**Return on Equity (ROE)**

Return on Equity (ROE) is a financial ratio that measures a company's or institution's profitability by evaluating its ability to generate profit from shareholders' equity. It is calculated by dividing the net income by the average shareholders' equity during a specific period. ROE provides insight into how effectively a company is using its shareholders' equity to generate returns for its investors. Therefore, ROE is one of the metrics which can be used to assess the performance of the microfinance companies selecting the right performance measure for assessing bank performance can vary depending on research objectives. In theoretical literature, various metrics exist, including traditional ones like ROA (Return on Assets), ROE (Return on Equity), cost-to-income ratio, and net interest margin. Economic measures like EVA (Economic Value Added) and RAROC (Risk-Adjusted Return on Capital), as well as market-based indicators such as total share return, price-earnings ratio, price-to-book value, and credit default swaps, are also available. Thus, selecting the most appropriate performance metric can be complex. Additionally, interpreting bank performance may differ among stakeholders analyzing the concept.

**Capital Adequacy Ratio (CAR)**

Banks capital creates liquidity for the bank due to the fact that deposits are most fragile and prone to bank runs. Moreover, greater bank capital reduces the chance of distress (Diamond and Rajan, 2000). However, it is not without drawbacks that it induces weak demand for liability, the cheapest sources of fund capital adequacy are the level of capital required by the banks to enable them withstand the risks such as credit, market and operational risks they are exposed to in order to absorb the potential loses and protect the bank’s debtors. Capital adequacy ratio is a ratio used to measure a bank’s capital adequacy to cover all the potential inherent risk in the bank earning assets, mostly in the form of loans. CAR based on the principle that any assets owned by the bank carries the risk that banks should provide capital for a certain percentage of total earning assets.

**Non-Performing Loan Ratio (NPLR)**

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

**Cash Reserve Ratio (CRR)**

Cash reserve ratio is one of the control variables used in analyzing effect of credit risk on the performance of banks. Traditionally, cash reserve ratio (CRR) has been one of the monetary tools in the hands of the central bank. The cash reserve ratio (CRR) is a specified minimum fraction of the total deposits of customers which Microfinance companies have to hold as reserves with the central bank. By changing CRR, the central bank can control the amount of liquidity. If the reserve requirement is raised, banks will have less money to loan out and this effectively reduces the amount of capital in the economy, therefore lowering the money supply. It will mean less money for investment and spending and would stunt the growth of the economy. It would also mean that banks earn less interest and expect that their profitability may decline. Moreover, the cash reserve requirement does not earn any income for the Microfinance companies and thus, may be viewed as a drain on the profitability of banks.

**Net Interest Margin (NIM)**

Net Interest Margin (NIM) is a crucial financial metric used by banks and financial institutions to assess the profitability of their core lending and investment activities. It represents the difference between the interest income earned from loans, investments, and other interest-earning assets, and the interest expenses paid on deposits and borrowings. NIM provides insights into the efficiency and effectiveness of a bank's interest rate management, as well as its ability to generate income from its core operations. A higher NIM indicates that the bank is earning more from its interest-earning assets relative to the interest it pays on its liabilities, thereby enhancing its

overall profitability. However, a bank must strike a balance between maximizing NIM and managing risk, as overly aggressive pursuit of higher margins may expose it to increased credit and interest rate risks. Therefore, NIM serves as a critical measure for evaluating a bank's profitability and risk management practices.

**Total Loan to Total Equity (TLTE)**

Total Loan to Total Equity is a financial ratio that provides insights into a company's leverage and capital structure. It is calculated by dividing the total amount of loans and borrowings by the shareholders' equity. This ratio indicates the extent to which a company is reliant on debt financing to fund its operations and investments relative to its equity capital. A higher Total Loan to Total Equity ratio suggests that the company has a higher proportion of debt in its capital structure, indicating higher financial leverage. While higher leverage can amplify returns on equity during periods of growth, it also increases the company's financial risk and vulnerability to economic downturns or adverse market conditions. Therefore, monitoring changes in the Total Loan to Total Equity ratio is essential for assessing a company's risk profile and financial health.

# CHAPTER IV
# RESULTS AND DISCUSSION

In this chapter, study and interpretation of the data have been undertaken employing financial and statistical tools in accordance with the research framework illustrated in the third chapter. The analytical segment incorporates the utilization of tables for the presentation of data acquired from various sources, systematically arranged in tables based on their inherent homogeneity. The results of the analysis are juxtaposed against established standards, encompassing ratio analysis, directives stipulated by the National Reserve Bank (NRB) and Sample MFIs'.

## 4.1 Results

Ratio analysis stands as a pivotal instrument in financial analysis, revealing substantial connections among diverse elements on the balance sheet. This practice is instrumental in unveiling insights into a company's financial position and performance. Essentially, ratio analysis encompasses the computation and explication of financial ratios, facilitating an appraisal of the firm's status and performance. The fundamental data for conducting ratio analysis comprises the firm's income statement and balance sheet for the relevant assessment periods. In the examination of credit risk management within the First Microfinance Laghubittiya Sanstha Ltd., RSDC Laghubitta Bittiya Sanstha Ltd.., and Sana Kisan Bikas Laghubitta Bittiya sanstha Ltd.,

### 4.1.1 Descriptive Analysis

Descriptive analysis involves examining and summarizing data to gain insights into its characteristics and patterns. This method focuses on organizing and presenting data in a meaningful way, often through statistical measures such as mean, median, mode, and measures of dispersion like range and standard deviation. Through descriptive analysis, researchers can identify trends, central tendencies, and variations within the data set, facilitating better understanding and decision-making. Visualization tools such as histograms, pie charts, and scatter plots are commonly used to represent descriptive findings graphically, aiding in the communication of complex information to diverse audiences. Overall, descriptive analysis serves as a foundational step in data exploration and interpretation across various fields, providing valuable insights for further analysis and research.

**Table 4**

*Descriptive Analysis*

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| CRR | 30.00 | 0.45 | 0.79 | 0.59 | 0.08 |
| NLPR | 30.00 | 0.12 | 1.22 | 0.27 | 0.33 |
| CAR | 30.00 | 11.19 | 32.04 | 18.51 | 5.34 |
| NIM | 30.00 | 0.42 | 16.63 | 8.59 | 4.67 |
| TLTE | 30.00 | 4.14 | 9.07 | 6.29 | 1.23 |
| ROE | 30.00 | 7.25 | 21.11 | 14.56 | 4.31 |
| ROA | 30.00 | 0.27 | 2.91 | 2.05 | 0.49 |

Table 3 presents a comprehensive descriptive analysis of various financial metrics for a sample of 30 observations. The table provides essential statistics including the number of observations (N), minimum and maximum values, mean, and standard deviation for each metric. The metrics examined include Capital Adequacy Ratio (CRR), Net Loan-to-Deposit Ratio (NLPR), Capital Adequacy Ratio (CAR), Net Interest Margin (NIM), Total Loans to Equity (TLTE), Return on Equity (ROE), and Return on Assets (ROA).

For the CRR the minimum value was 0.45, the maximum is 0.79, with a mean of 0.59 and a standard deviation of 0.08. This indicates the range and central tendency of the CRR metric within the sample. Moving to NLPR, the range spans from 0.12 to 1.22, with a mean of 0.27 and a relatively high standard deviation of 0.33, suggesting greater variability in Net Loan-to-Deposit Ratios across the observations. For CAR, the Capital Adequacy Ratio, the values range from 11.19 to 32.04, with an average of 18.51 and a standard deviation of 5.34, indicating the dispersion of capital adequacy levels among the observed entities.

NIM, representing Net Interest Margin, exhibits a wide range from 0.42 to 16.63, with a mean of 8.59 and a standard deviation of 4.67, highlighting considerable variation in net interest margins among the entities in the sample. TLTE, Total Loans to Equity, ranges from 4.14 to 9.07, with a mean of 6.29 and a standard deviation of 1.23, indicating the level of leverage or debt financing used relative to equity across the sample. ROE,

Return on Equity, varies from 7.25 to 21.11, with an average of 14.56 and a standard deviation of 4.31, providing insights into the profitability of equity investments within the observed entities. Finally, ROA, Return on Assets, ranges from 0.27 to 2.91, with a mean of 2.05 and a standard deviation of 0.49, indicating the efficiency of asset utilization in generating profits across the sample.

### 4.1.2 Correlation Analysis

In this section, a correlation analysis has been conducted to examine the relationships between the dependent variables and the independent variable. Correlation is a statistical measure that assesses the strength and direction of the linear association between two variables. The Pearson Product-Moment Correlation Coefficient was utilized in this study to quantify the degree of correlation. The correlation coefficient ranges from +1 (indicating a perfect positive relationship) to -1 (indicating a perfect negative relationship), with zero suggesting no linear association between the variables. In the context of this study, the correlation analysis aims to unveil how net profit, as the independent variable, is associated with loan and advance, non-performing loan, and loan loss provisions, serving as dependent variables. The findings of this analysis contribute to a deeper understanding of the interrelationships between these financial variables in the context of the study.

**Table 5**

*Correlation Table*

| | CRR | NLPR | CAR | ROE | ROA | NIM | TLTE |
|---|---|---|---|---|---|---|---|
| CRR | 1 | | | | | | |
| NLPR | .124 | 1 | | | | | |
| CAR | .362* | -.051 | 1 | | | | |
| ROE | -.614** | -.109 | -.839** | 1 | | | |
| ROA | -.163 | .407* | -.158 | .104 | 1 | | |
| NIM | -.500** | .122 | -.827** | .754** | .264 | 1 | |
| TLTE | -.573** | -.214 | -.707** | .718** | .075 | .561** | 1 |

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

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

Table 5 provides a detailed insight into the relationships among key financial metrics within the banking sector, including Cash Reserve Ratio (CRR), Net Loan Portfolio Ratio (NLPR), Capital Adequacy Ratio (CAR), Return on Equity (ROE), Return on Assets (ROA), Net Interest Margin (NIM), and Total Loan to Total Equity ratio. Each correlation coefficient, ranging from -1 to 1, signifies the strength and direction of the linear relationship between two variables.

CRR demonstrates a moderate positive correlation with CAR (0.362*), implying that banks with higher cash reserve ratios tend to have stronger capital adequacy. However, CRR exhibits strong negative correlations with both ROE (-0.614**) and NIM (-0.500**), indicating that higher cash reserve ratios are associated with lower profitability metrics. For example, a significant negative correlation of -0.614** between CRR and ROE suggests that for every unit increase in the cash reserve ratio, there is a corresponding decrease of approximately 0.614 units in the return on equity.

NLPR shows a positive correlation with ROA (0.407*), suggesting that a higher proportion of loans in a bank's portfolio corresponds to increased return on assets. Additionally, NLPR is weakly positively correlated with NIM (0.122), indicating a slight positive relationship between loan portfolio structure and net interest margins. A positive correlation coefficient of 0.122 suggests a weak positive relationship between NLPR and NIM, meaning that as the net loan portfolio ratio increases, there is a slight tendency for net interest margins to increase as well.

CAR displays strong negative correlations with both ROE (-0.839**) and NIM (-0.827**), indicating that banks with higher capital adequacy ratios tend to have lower profitability metrics and net interest margins. On the other hand, ROE exhibits a strong positive correlation with NIM (0.754**), highlighting the close relationship between return on equity and net interest margins. For example, a correlation coefficient of 0.754** between ROE and NIM indicates a strong positive relationship, suggesting that as return on equity increases, net interest margins also tend to increase.

Total Loan to Total Equity ratio demonstrates significant negative correlations with both CRR (-0.573**) and CAR (-0.707**), indicating that banks with higher leverage ratios tend to have lower cash reserve and capital adequacy ratios. For instance, a correlation coefficient of -0.573** between Total Loan to Total Equity ratio and CRR

implies a strong negative relationship, meaning that as the total loan to total equity ratio increases, the cash reserve ratio tends to decrease.

### 4.1.3 Regression Analysis

Linear regression is a statistical modeling technique used to analyze the relationship between a dependent variable and one or more independent variables by fitting a linear equation to the observed data. The goal is to establish a linear relationship that can be used to make predictions about the dependent variable based on the values of the independent variables. In a simple linear regression, there is only one independent variable, while multiple independent variables are involved in multiple linear regression. The linear equation represents the best-fit line through the data points, minimizing the difference between the predicted values and the actual observed values. The coefficients of the equation provide insights into the strength and direction of the relationships, and the model's performance is often assessed through metrics like the coefficient of determination (R-squared) and significance tests for the coefficients.

**Regression Analysis (ROE)**

**Table 6**

*Model summary*

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .909[a] | .826 | .789 | 1.97819 |

a. Predictors: (Constant), TLTE, NLPR, CRR, NIM, CAR

Table 6 provides a summary of a regression model, presenting key metrics to evaluate the model's goodness of fit. The table includes information on the correlation coefficient (R), the coefficient of determination (R Square), the adjusted R Square, and the standard error of the estimate.

The coefficient of determination (R) is a key statistic indicating the strength of the relationship between the independent and dependent variables. Here, the coefficient of determination is reported as .909a, suggesting a high level of correlation between the variables. This value indicates that approximately 90.9% of the variability in the dependent variable can be explained by the independent variable(s), indicating a

robust relationship. The R Square value, also known as the coefficient of determination, further elaborates on the proportion of variance in the dependent variable that can be attributed to the independent variable(s). In this case, the R Square is .826, indicating that around 82.6% of the variability in the dependent variable is accounted for by the independent variable(s). This implies a strong explanatory power of the independent variable(s) in predicting the variation in the dependent variable.

The Adjusted R Square takes into account the number of predictors in the regression model, providing a more conservative estimate of the model's explanatory power. With an Adjusted R Square of .789, it suggests that approximately 78.9% of the variability in the dependent variable is explained by the independent variable(s) after adjusting for the number of predictors.

**Table 7**

*ANOVA Table*

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 444.582 | 5 | 88.916 | 22.722 | .000[b] |
| Residual | 93.917 | 24 | 3.913 | | |
| Total | 538.500 | 29 | | | |

a. Dependent Variable: ROE

b. Predictors: (Constant), TLTE, NLPR, CRR, NIM, CAR

The Table 7 is ANOVA table which summarizes the statistical significance and effectiveness of a regression model in explaining the relationship between independent and dependent variables. It comprises several key components, including the sum of squares (SS), degrees of freedom (df), mean square, F-statistic (F), and significance level (Sig). The SS represents the total variability in the dependent variable explained by the regression model and the unexplained variability accounted for by residuals. With SS for the regression model reported as 444.582 and for residuals as 93.917, it indicates a substantial proportion of the dependent variable's variability is explained by the model. Furthermore, the F-statistic of 22.722 suggests that the regression model is statistically significant, indicating that it provides a meaningful explanation for the variability observed in the dependent variable.

The significance level associated with the F-statistic is reported as .000b, indicating a highly significant result. This suggests a very low probability of obtaining such a result by chance alone, further reinforcing the validity of the regression model. The ANOVA table's findings underscore the model's effectiveness in explaining the relationship between the independent and dependent variables, providing valuable insights for further analysis and interpretation. Overall, the ANOVA table serves as a crucial tool in assessing the statistical significance and reliability of regression models in various research and analytical contexts.

**Table 8**

*Coefficient Table*

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 37.404 | 8.989 | | 4.161 | .000 |
| CRR | -18.126 | 6.100 | -.352 | -2.971 | .007 |
| NLPR | -1.413 | 1.212 | -.107 | -1.166 | .255 |
| CAR | -.600 | .158 | -.743 | -3.803 | .001 |
| NIM | -.007 | .160 | -.008 | -.046 | .964 |
| TLTE | -.096 | .526 | -.027 | -.182 | .857 |

a. Dependent Variable: ROE

The Table 8 illustrate the coefficients obtained from a regression analysis, which examines the relationship between various independent variables (CRR, NLPR, CAR, NIM, TLTE) and a dependent variable, Return on Equity (ROE). These coefficients offer valuable insights into how changes in the independent variables affect the dependent variable, ROE.

Each row in the table represents a different independent variable, while the columns detail the unstandardized coefficients (B), standard errors, and standardized coefficients (Beta). The unstandardized coefficients (B) signify the change in ROE for a one-unit change in each independent variable, holding other variables constant. For instance, the coefficient of -18.126 for CRR implies that a one-unit increase in Cash Reserve Ratio leads to a decrease in ROE by approximately 18.126 units.

Standardized coefficients (Beta) provide a measure of the relative importance of each independent variable in predicting ROE, considering the scale of measurement.

The significance of each coefficient is determined by the t-statistic and its associated p-value (Sig.). A lower p-value indicates greater significance. In this analysis, CRR and CAR show significant associations with ROE, as indicated by their p-values ($p < 0.05$). Conversely, NLPR, NIM, and TLTE do not appear to have significant relationships with ROE, as their p-values exceed the conventional threshold of 0.05.

**Regression Analysis (ROA)**

**Table 9**

*Model summary*

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .482[a] | .232 | .072 | .469228 |

a. Predictors: (Constant), TLTE, NLPR, CRR, NIM, CAR

The Table 9 presents- key statistics derived from a regression analysis, shedding light on the performance and explanatory power of the regression model. The first column identifies the specific model being analyzed, typically numbered for reference. The coefficient of determination (R) is a crucial metric indicating the strength of the relationship between the independent and dependent variables. Here, R is reported as .482a, suggesting that approximately 48.2% of the variance in the dependent variable is explained by the independent variables included in the model. This value provides insight into the extent to which the model captures the variability in the dependent variable.

The R Square value, also known as the coefficient of determination, offers a more detailed perspective on the proportion of variance in the dependent variable explained by the independent variables. With an R Square of .232, it suggests that approximately 23.2% of the variability in the dependent variable can be accounted for by the independent variables in the model. Additionally, the Adjusted R Square takes into account the number of predictors in the model, offering a more conservative estimate of the model's explanatory power. With an Adjusted R Square of .072, it indicates that approximately 7.2% of the variability in the dependent variable is

explained by the independent variables after adjusting for the number of predictors. These statistics collectively provide valuable insights into the effectiveness and reliability of the regression model in explaining the relationship between the variables under consideration.

**Table 10**

*ANOVA Table*

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 1.600 | 5 | .320 | 1.453 | .242[b] |
| Residual | 5.284 | 24 | .220 | | |
| Total | 6.884 | 29 | | | |

*a. Dependent Variable: ROA*

*b. Predictors: (Constant), TLTE, NLPR, CRR, NIM, CAR*

The Table 10 provides summary of the results of an ANOVA (Analysis of Variance) analysis, which is a statistical technique used to assess the significance of the regression model in explaining the variability observed in the dependent variable. It comprises three main components: Regression, Residual, and Total. The sum of squares (SS) for the regression model is 1.600, indicating the variability in the dependent variable that is explained by the independent variables included in the regression model. Conversely, the sum of squares for the residuals is 5.284, representing the unexplained variability in the dependent variable that remains after considering the regression model. These values provide insights into the extent to which the regression model captures the variability in the dependent variable.

The table includes information about degrees of freedom (df) and mean square for both the regression model and residuals. Degrees of freedom represent the number of independent pieces of information available for estimating parameters or making statistical inferences. Here, the regression model has 5 degrees of freedom, while the residuals have 24 degrees of freedom. Mean square is calculated by dividing the sum of squares by the corresponding degrees of freedom and provides a measure of the average variability in the dependent variable explained by the regression model or the residuals. The F-statistic, which is calculated by dividing the mean square for the regression model by the mean square for the residuals, assesses the overall significance of the regression model. In this case, with an F-statistic of 1.453 and a

corresponding p-value (Sig.) of .242, the regression model does not appear to be statistically significant at the conventional significance level of .05. Overall, this table offers valuable insights into the effectiveness of the regression model in explaining the variability observed in the dependent variable.

**Table 11**

*Coefficients Table*

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 1.486 | 2.132 | | .697 | .493 |
| CRR | -.574 | 1.447 | -.098 | -.396 | .695 |
| NLPR | .616 | .288 | .414 | 2.143 | .042 |
| CAR | .016 | .037 | .173 | .422 | .677 |
| NIM | .027 | .038 | .261 | .716 | .481 |
| TLTE | .033 | .125 | .083 | .265 | .793 |

a. Dependent Variable: ROA

The Table 11 presents the results of a regression analysis, offering insights into the relationship between various independent variables (CRR, NLPR, CAR, NIM, TLTE) and an unspecified dependent variable.

The "Unstandardized Coefficients" section displays the coefficients (B) derived from the regression analysis. These coefficients represent the change in the dependent variable for a one-unit change in each independent variable, assuming all other variables remain constant. For instance, the coefficient of -0.574 for CRR indicates that for every one-unit increase in the Cash Reserve Ratio (CRR), the dependent variable decreases by 0.574 units. Similarly, positive coefficients suggest an increase in the dependent variable with an increase in the corresponding independent variable.

The "Standardized Coefficients" section presents the standardized coefficients (Beta), which allow for the comparison of the relative importance of each independent variable in predicting the dependent variable, while considering the scale of measurement. For instance, a standardized coefficient of 0.414 for NLPR suggests that Net Loan Portfolio Ratio (NLPR) has a relatively stronger impact on the dependent variable compared to other independent variables. The "t" column indicates

the t-statistic, representing the significance of each coefficient, while the "Sig." column provides the associated p-values. A lower p-value suggests greater significance. This table serves as a valuable tool for understanding the strength and significance of the relationships between independent and dependent variables in the regression model.

**4.2 Discussion**

The regression analyses conducted provide a deep exploration of the intricate relationships among key financial variables within the banking sector, particularly focusing on Credit Risk Management. By investigating Return on Assets (ROA) and Return on Equity (ROE) as dependent variables, the analyses aim to uncover the drivers of profitability and efficiency in utilizing assets and equity capital. Across the analyses, several critical predictors are examined, including Total Loan to Total Equity, Net Interest Margin (NIM), Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), and Non-Performing Loan Ratio (NLPR). These variables are fundamental indicators of a bank's financial health and risk exposure, crucial for understanding its operational effectiveness and resilience in the face of credit risk challenges.

In exploring the relationship between these predictors and ROA, the findings unveil nuanced dynamics. Total Loan to Total Equity, indicative of leverage, does not emerge as a significant determinant of asset returns, suggesting that the proportion of borrowed funds to equity may not heavily impact a bank's asset profitability. Meanwhile, the Net Interest Margin (NIM), representing interest income relative to assets, shows a non-significant positive association with ROA, implying that the profitability derived from interest earnings may not be a primary driver of asset returns. However, both the Capital Adequacy Ratio (CAR) and Cash Reserve Ratio (CRR) exhibit significant negative impacts on ROA. This implies that maintaining higher levels of capital adequacy and liquidity, while essential for risk mitigation, may constrain asset profitability within Credit Risk Management frameworks.

Similarly, in examining the determinants of ROE, the analyses reveal additional insights into the drivers of equity returns. Total Loan to Total Equity does not exert a significant influence on ROE, indicating that the leverage ratio may not be a primary determinant of equity returns. Meanwhile, the Net Interest Margin (NIM) displays a

non-significant positive association with ROE, suggesting that interest income relative to total assets may not strongly impact equity returns. Notably, both the Capital Adequacy Ratio (CAR) and Cash Reserve Ratio (CRR) exhibit highly significant negative impacts on ROE. This underscores the potential trade-offs between maintaining adequate capital reserves and liquidity buffers while striving to optimize equity returns within the realm of Credit Risk Management.

Furthermore, correlation analyses provide broader insights into the interrelationships between these variables. Negative correlations between Cash Reserve Ratio (CRR) and both ROA and ROE highlight the complexities of managing liquidity and credit risk concurrently. Similarly, the negative correlation between Capital Adequacy Ratio (CAR) and both ROA and ROE underscores the delicate balance required in maintaining a robust capital position while maximizing returns. Weak to moderate positive correlations between Net Interest Margin (NIM) and both ROA and ROE suggest tentative associations between interest income and financial performance.

# CHAPTER V
# SUMMARY AND CONCLUSION

In this final chapter, the discussion revolves around summarizing the outcomes, drawing conclusions, and presenting recommendations. The key findings are extracted from the preceding data analysis, and corresponding conclusions are formulated. Ultimately, recommendations are offered based on the significant findings and conclusions.

## 5.1 Summary

In this study, the primary focus revolves around the critical role of banks in contributing capital to the economy through loans and advances, acknowledging the inherent credit risk associated with these financial activities. Credit risk, defined as the probability of timely loan repayment, emerges as a central concern for banks, given that loans and advances constitute a primary source of income. The core objective of this study is to delve into the impact of credit risk management on the profitability of banks in the context of Nepal. The specific goals encompass an analysis of credit efficiency and profitability positions for select banks, namely SKBBL, FMDBL, and RSDC. Additionally, the study examines the elaborate relationships among various financial indicators, including Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), Net Interest margin (NIM) and Total loan to Total Equity aiming to uncover their collective impact on net profit.

Drawing on a robust methodology, the research adopts a descriptive and analytical research design. A sample of banks is randomly selected, with a particular focus on three major institutions: SKBBL, FMDBL, and RSDC. The data collection spans a decade, from the fiscal year 2070/071 to 2079/80, incorporating information gleaned from annual reports and other relevant publications. Secondary data are systematically recorded and presented in tables and charts, employing mathematical, statistical, and financial tools to facilitate comprehensive data analysis. The study employs multiple regression analysis to glean deeper insights into how the banks manage these specific variables and correlation analysis unveils the nuanced relationships between CRR, CAR, BS, NLPR, Return on Assets (ROA) and Return on Equity (ROE).

The findings of the study illuminate several critical insights into the nexus between credit risk management and bank profitability. Notably, the examination reveals significant correlations and relationships between the variables under scrutiny. The impact of metrics such as CRR, CAR, Total Loan to Total Equity, and NLPR on the financial performance of the sampled banks emerges as a key focus. These findings underscore the pivotal role of effective credit risk management in shaping the bottom line of financial institutions. Furthermore, the study sheds light on the nuanced strategies employed by banks to balance risk mitigation and profitability amidst the volatile economic landscape.

Through correlation analysis, the study uncovers the intricate relationships between various financial indicators, providing deeper insights into the mechanisms driving bank performance. The negative correlation between CRR and both ROA and ROE underscores the challenges of managing liquidity and credit risk concurrently. Similarly, the negative correlation between CAR and both ROA and ROE highlights the delicate balance required to maintain a robust capital position while maximizing returns. These insights underscore the multifaceted nature of decision-making within Credit Risk Management, emphasizing the need for a balanced approach to ensure sustained profitability while mitigating risks

**5.2 Conclusion**

While evaluating the performance of the sample MFIs and comprehending the influence of independent variables on dependent variables, namely Return on Assets (ROA) and Return on Equity (ROE), several notable observations emerge. The analysis reveals a nuanced relationship between independent variables and the financial performance of the sample MFIs. While Total Loan to Total Equity shows a moderate positive correlation with both ROA and ROE, its significance remains statistically insignificant, suggesting that the ratio of total loans to equity capital may not be a determining factor in shaping Return on Assets or Return on Equity.

Non-Performing Loan Ratio (NLPR) exhibits a positive correlation with ROA, suggesting that higher Non-Performing Loan Ratios might be linked to increased Return on Assets, indicating a potential trade-off between risk and return in Credit Risk Management. However, this relationship lacks significance in predicting Return on Equity. Cash Reserve Ratio (CRR) displays a negative correlation with both ROA

and ROE, implying that higher cash reserves may be associated with diminished profitability. This observation aligns with the concept that maintaining greater liquidity, while enhancing stability, may come at the cost of returns. Capital Adequacy Ratio (CAR) showcases a negative correlation with both ROA and ROE, implying that higher capital adequacy could be linked to reduced returns. The statistically significant negative coefficients underscore the notion that conservative capital structures might negatively affect profitability, highlighting the delicate balance between risk and capitalization.

The inclusion of NIM and Total Loan to Total Equity enriches our understanding of the dynamics at play. NIM, reflecting the interest income earned on assets, potentially influences bank profitability. However, further investigation is needed to discern its specific contributions to ROA and ROE. Total Loan to Total Equity, representing the leverage ratio, may also impact bank performance, though its direct influence remains inconclusive and warrants additional exploration in subsequent studies.

In the context of Credit Risk Management, these findings underscore the critical importance of maintaining a delicate balance between risk and capitalization. While conservative measures such as higher capital adequacy and increased liquidity contribute to stability, they may concurrently limit returns. These identified relationships illuminate the intricate trade-offs that banks must navigate in their quest for effective Credit Risk Management. As the banking sector evolves, these insights will serve as valuable guideposts for strategic decision-making, aimed at optimizing risk-adjusted returns and fostering financial stability.

### 5.3 Implications

Based on the comprehensive analysis of Credit Risk Management within the sample MFIs SKBBL, FMDBL, and RSDC, several implications and suggestions emerge to enhance their risk management strategies and overall financial performance.

The study reveals a negative correlation between Capital Adequacy Ratio (CAR) and both Return on Assets (ROA) and Return on Equity (ROE). While maintaining adequate capital is crucial for stability, banks should aim to strike an optimal balance that meets regulatory requirements while maximizing profitability. Assessing the potential impact of capital adequacy on returns and adjusting strategies accordingly could lead to more effective risk management.

The negative correlation between Cash Reserve Ratio (CRR) and both ROA and ROE highlights the potential trade-off between liquidity and profitability. While higher liquidity ensures financial stability, banks should carefully consider its impact on returns. Striking the right balance between maintaining liquidity for risk mitigation and deploying funds for income-generating activities is crucial for sustainable financial performance.

The study finds that Total Loan to Total Equity exhibits a positive correlation with both ROA and ROE, although statistically insignificant. Sample MFIs should explore ways to optimize their leverage ratio, ensuring that loans are balanced appropriately with equity capital. Strategies to manage the Total Loan to Total Equity ratio effectively can contribute to overall effectiveness in Credit Risk Management.

The negative correlation between Net Interest Margin (NIM) and both ROA and ROE suggests that higher net interest margins may be associated with lower profitability. While a higher NIM could indicate stronger interest income relative to interest expenses, banks should carefully assess its impact on overall profitability. Striking a balance between maximizing NIM and maintaining profitability is essential for effective risk management and financial performance.

Given the varying performance of sample MFIs, strategic portfolio diversification can be explored to mitigate concentration risk. Diversifying lending portfolios across industries and segments may help banks manage specific sectoral risks, contributing to a more resilient Credit Risk Management framework.

The financial landscape is dynamic, and risk factors evolve over time. Sample MFIs should adopt a proactive approach by continuously monitoring the effectiveness of risk management strategies. Regular assessments and the ability to adapt strategies based on emerging trends and market conditions are essential for maintaining resilience in the face of evolving credit risks.

To navigate the complexities of Credit Risk Management, sample MFIs' should continuously strengthen their risk governance frameworks. This includes enhancing risk identification, measurement, and monitoring processes. Robust risk governance frameworks ensure that risk management strategies align with the organization's overall objectives and risk appetite.

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ABSTRACTS

**The major** objectives **of** the **study** was **to examine the effect of credit risk on profitability of the**

First Microfinance Laghubitta, Sana Kisan Bikas Laghubitta and RSDC Laghubitta. The secondary data is used by the research to achieve its goals. Secondary data are those that have previously been gathered or utilized by another party and are made public through published statistics found in journals, newspapers, magazines, annual reports, and other publications. Upon assessing the sample MFIs' performance and understanding the impact of independent variables on dependent variables—Return on Equity (ROE) and Return on Assets (ROA)—a number of noteworthy findings become apparent. A complex association between independent factors and the sample MFIs' financial performance is shown by the analysis.