# CREDIT RISK MANAGEMENT AND ITS EFFECT ON PROFITABILITY OF MICROFINANCE COMPANIES IN NEPAL

**A Dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree**


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## CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"CREDIT RISK MANAGEMENT AND ITS EFFECT ON PROFITABILITY OF MICROFINANCE COMPANIES IN NEPAL"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of this dissertation.

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# REPORT OF RESEARCH COMMITTEE

Mr. Rajendra Bhattarai has defended research proposal entitled **"Credit Risk Management and Its Effect on Profitability of Microfinance Companies in Nepal"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidelines of supervisor Asso. Prof. Rita Maskey submit the thesis for evaluation and viva-voce examination.

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# APPROVAL SHEET

We, the undersigned, have examined the thesis entitled **" Credit Risk Management And Its Effect on Profitability of Microfinance Companies in Nepal "** presented Rajendra Bhattarai Candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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Rajendra Bhattarai

# TABLE OF CONTENTS

# LIST OF TABLE

# LIST OF FIGURE

# ABBREVIATIONS

| | | |
|---|---|---|
| BS | : | Bikram Sambat |
| CB | : | Commercial Banks |
| CDR | : | Capital Adequacy Ratio |
| CRR | : | Cash Reserve Ratio |
| CAR | : | Capital Adequacy Ratio |
| IT | : | Information Technology |
| JVBs | : | Joint Venture Banks |
| LSIZE | : | Natural Logarithm of Bank Size or Total Assets |
| Ltd | : | Limited |
| CCBL | : | Chhimek lagubhitta bittiya Sanstha Limited |
| NUBL | : | Nirdhan utthan Lagubitta Bittya Sanstha Limited |
| SWBBL: | | Swabalamban Laghubitta Bittya Sanstha Limited |
| NPLR | : | Non performing Loan Ratio |
| NRB | : | Nepal Rastra Ban |
| NIBL: | | Nepal Investment Bank Limited |
| ROA | : | Return on Assets |
| ROE | : | Return on Equity |
| SD | : | Standard Deviation |
| SIZE | : | Bank Size or Total Assets |
| TU | : | Tribhuwan University |

## ABSTRACT

The main purpose of the study is to examine the credit risk management and its effects on profitability of Microfinance companies in Nepal during the period of 2013/14-2022/23. Correlation and multiple regression analysis are used to analyze the data. This study shows that the Microfinance company have low credit risk and lending policy of banks is sound and effective as it is acceptable up to a certain limit or below five percent. Profitability position in terms of ROA and ROE, Microfinance could manage their overall operations due to highest ratio as well as good financial performance. The correlation analysis reveals that cash reserve ratio and non-performing loan has insignificant positive relation with ROA and insignificant negative relation with ROE. Likewise, there is insignificant negative correlation between loan to deposit ratio and ROA and significant positive relationship between credit to deposit ratio and ROE. Moreover, there is significant negative relationship between bank size and ROA but there is insignificant positive relationship between bank size and ROE of the banks. The multiple regression shows that cash reserve ratio has insignificant impact on profitability (ROA and ROE) of the Microfinance companies. Then, credit to deposit ratio has significant positive impact on ROA and it has insignificant positive impact on ROE. However, non-performing loan ratio has negative impact on profitability of the sample banks and microfinance. At the same time, Capital adequacy has insignificant positive impact on ROA and significant positive impact on ROE. Finally, bank size has significant negative impact on profitability on ROA but insignificant negative impact on ROE of Microfinance in Nepal. Hence it can be concluded that credit to deposit ratio, non-performing loan, Capital adequacy ratio, cash reserve ratio and banks size are the major indicators of credit risk and its effects on profitability of Microfinance companies in Nepal.



Keywords*: Profitability, cash reserve ratio, loan to deposit ratio, capital adequacy ratio and non-performing loan.*

# CHAPTER – I
# INTRODUCTION

## 1.1 Background of the Study

Nepal has almost forty years of microfinance experience. Only microfinance programs are viewed as pro-poor and rural centered, despite the fact that several programs have been launched in Nepal to alleviate poverty. During that time, a number of donor-supported microcredit programs as well as the Deprived Sector Credit Program were introduced. The services offered through microfinance can be directed specifically towards the poor and the poorest of the poor, they can significantly improve the socioeconomic status of the targeted community, and the institutions that provide these services can grow into sustainable organizations with steadily increasing outreach in a matter of years. These factors have made microfinance a particularly effective development intervention (Nepal Rastra Bank, 2023).

Strong credit risk management prevents major losses and improves company's financial performance. Good financial success rewards both employees and shareholders for their efforts and investments. Credit risk management is a major determinant of company's profitability. As a result, loan management has a significant influence on the microfinance company's profitability. Credit risk is a type of misfortune caused by a company's loan default. Credit risk is most simply described as the possibility of a company failing to satisfy its commitments in line with agreed-upon conditions. However, a performing loan is one in which both the principle and interest payments are received on time and within the agreed-upon period, whereas a non-performing loan is one in which the loan payment is not paid on time and within the agreed-upon term (Ogboi & Unuafe, 2013). Loan management is an essential component of microfinance management since the future of the microfinance company is dependent on it. Credit risk management's major goal is to keep credit exposure manageable and to enhance the risk adjusted return rate by strengthening credit criteria. Because credit exposure is the source of both company's profits and credit risk (Ali & Dhiman, 2019).

Microfinance are financial entities that are founded under the rules and guidelines of a certain nation to lend, borrow, issue, exchange, accept deposits, safeguard, or handle money. Among their activities, credit provision is the primary product that microfinance company offer to potential company owners as a means of generating money. Microfinance must evaluate credit exposure in both credit portfolio and individual credit when practicing responsible credit management. Furthermore, its relationship with other forms of risk exposures such as liquidity risk, operational risk. and market risk must be considered. Indeed, the total risk management system of microfinance is dependent on the efficiency and efficacy of prudent credit management implementation (Bhatt et al., 2023).

Microfinance companies always study on the basis of loan analysis to ensure the loan are made on appropriate terms to client who can and will pay them back.it provides a detailed examination of a loans terms, risk, and affordability, helping both lenders and borrowers and make well informed decisions. Generally, microfinance companies always based on 5C while lending and which are character collateral, capital, capacity, condition. These all sorts of things help to mitigate risk and making a decision over lending. Banks and financial companies knows to provides the loan under the 5C to overcome the risk of losses.

Credit risk analysis is the process of determining a company's or organization's creditworthiness. When a significant corporation offers or has issued bonds, its audited financial statements may be scrutinized. Alternatively, a microfinance may examine a small business's financial accounts before providing or renewing a commercial loan. The phrase can be applied to either large or small businesses (Paudel, 2011).

Credit risk management is critical in determining whether a credit institution will succeed or fail. A comprehensive loan analysis that deals with the technique of investing those elements that cause debt nonpayment is the key to effective company financing. The effectiveness of loan decisions is determined by the officer's or

manager’s excellent judgment (Gautam D., 2004). The management of credit is one of the most important and difficult duties of a microfinance company. This is due to the fact that they collect consumer deposits and are required to pay them on demand. No consumer will accept the explanation that his money account is being paid on demand because it has been loaned to another client. As a result, appropriate loan management by microfinance institution is required (Al-Amin et al., 2021).

Credit risk management involves the process of issuing a loan, determining the conditions of the loan, and recovering the amount when it is due. This is the role inside a company or organization that controls lending rules that increase revenues while decreasing financial risks. The credit management policy's objective is to specify guidelines for any actions that are likely to cause business risk by committing financial resources. This is done in order to control and limit the risk. A risk, when properly managed, may become an opportunity (Mutua & Gekara, 2017).

Credit risk management refers to the whole lending process, from contacting potential borrowers to retrieving the loan amount. Credit management in the financial industry is involved with operations such as accepting applications, loan evaluation, loan approval, monitoring, non-performing loan recovery, and so on. As a result, the goal of this research is to evaluate the performance of microfinance company's credit management difficulties and strengths from various viewpoints in light of contemporary credit management techniques in financial institutions (Mutua & Gekara,2017).

Microfinance company must manage both the overall credit risk of the portfolio and the risk of individual credit or transactions. Proper credit administration operations are essential for the financial sector in order to reduce the total complexity of the investment portfolio. A solid credit risk management strategy avoids major downsides and improves microfinance company's financial performance. Good financial success rewards both employees and stockholders for their work environment and investment. This will motivate employees and stockholders to contribute more, which will lead to

economic development. As a result, good credit risk management is a critical component of a financial organization's long-term performance (Bhattarai, 2016).

Profits have long been recognized and regarded as a metric of company efficiency. As a result, the higher the earnings, the more efficient and lucrative the company is thought to be. This criterion has the added benefit of providing a consistent benchmark for assessing the efficiency of various microfinance companies. The profit motivation remains one of an enterprise's mainsprings and a driving force for efficiency. Profit motivation obviously drives the search for more efficient processes, lower unit costs, better organization, and higher turnover. Profitability is made up of two words: profit and capability. The term profit has already been defined, while the phrase ability refers to a company's capacity to produce profits. A company's ability also reflects its earning power or operating performance. The capacity of a particular investment to make a return from its usage is defined as profitability. Profitability is a relative term, whereas profit is an absolute term. Profit and profitability are two distinct ideas, notwithstanding their close relationship and mutual dependence. In other words, despite their general character, each of them plays a unique role in business (Dangol et al., 2021).

Profitability is a variation of the term profit that indicates how the capacity to produce a profit is essentially a measuring stick of corporate performance. Simply said, it is the fundamental test performance of every organization Profit is the difference between the amount of money sold and the amount of money spent, yet the term "profit is highly debatable and has various alternative meanings (Holmgren, 2011)

Profitability analysis is an enterprise resource planning component that enables administrators to anticipate the profitability of an application or evaluate the profitability of an existing project. Profitability analysis may forecast sales and profit potential based on market segments such as client age groups, geographic locations, or product kinds. Profitability analysis in cost accounting is an examination of the profitability of an organization's production. An organization's output might be classified as goods, customers, locations, channels, or transactions. Size, capital, risk

management, expenditure management, marketable securities, and non-performing loans are considered micro or company specific variables, whereas inflation, interest rate, GDP growth, and tax rate are considered macro variables. Company specific particular variables such as company size, capital adequacy ratio, non-performing loan and loan loss provision ratio are evaluated determinants in this study and profitability of the banks is analyzed as ROA and ROE in this study (Kawor & Adinyo,2021)

The study's major goal is to examine the link between credit risk management techniques and profitability, credit risk mitigation methods, and barriers faced by microfinance companies with client loan repayment behavior. This study can give useful information on credit risk management policies and procedures followed by Nepalese microfinance companies, which eventually helps identify situations linked to credit risks encountered by consumers and microfinance companies with cyclical and vicious impacts Nepal Rastra Bank, 2023).

Lending to a few industries would subject financial institution to credit concentration risk. As a result, the NRB has made leading to certain defined industries essential in order to boost the economy, and BFIs have been gradually diversifying their portfolios and actively lending into these areas. The NRB requires BFIs to distribute a specified percentage of their overall loan portfolio to the underprivileged sector. With the goal of gradually expanding financial access to the economy's most disadvantaged sectors, the NRB has set the loan requirement rate for BFIs at 5% (Nepal Rastra Bank, 2023).

The phrase "micro-finance" refers to financial services provided to small businesses and underprivileged groups in the areas of savings, credit, remittance, micro insurance, and other areas to assist them in creating chances for self-employment and other sources of income. The defining features of microfinance are modest loans, group lending, savings groups, small-scale enterprises, varied use, prompt payback, careful supervision, and straightforward terms and conditions on credit (without collateral) (Nepal Rastra Bank, 2023).

## 1.2 Problem Statement

Because of increased competition among financial institutions, interest rates on savings and loans are on the down. Non-performing assets have become a major issue for microfinance companies. Microfinance companies are required by NRB guidelines to set aside a specific percentage of their profits for bad loans and non-performing assets. Lending in the industrial and productive sectors is a high-risk venture. In many cases, effective business procedures will eliminate or lessen the financial risk involved with a transaction; in others, it may shift the risk to other parties through a combination of price and product design. The finance sector knows that an institution should neither conduct business in a way that puts unnecessary risk on it, nor should it absorb risk that can be effectively transferred to other players. Rather, it should only handle risks at the business level if they can be managed more efficiently there than by the market or their owners in their own portfolios (John et al., 2011).

It should make a considerable contribution to earnings since strong profits are expected to increase shareholder value. Similarly, credit policies are not structured, and there is no clear vision of policy on credit elements. Loan acceptance and credit choices in Nepal have been shown to be flexible in order to promote personal networks as well. A new client discovers that the credit-granting procedure is extremely convoluted, with certain documents submitted for loan approval being false and simple for formality purposes (Matua & Gekara,2017).

Most microfinance companies in Nepal have been shown to approve loans without sufficient inspections, potentially increasing the amount of loan defaults and non-performing loans. Furthermore, it is argued that Nepal's current credit risk management methods are insufficient to deal with the country's current credit risk concerns (Bhattarai, 2019).

In the context of Nepal, numerous micro financial institutions are incurring massive losses due to lending risk. There is still a tendency of providing a consortium financing for a large project in order to reduce risk. A microfinance can reliably provide a person with merely a house loan, a hire purchase loan, or an overdraft of a specified amount, but it is still risky to invest exclusively in a large project. The key assertions to be examined in this study are undoubtedly the credit management

practices employed by Nepalese microfinance companies. For the statement of the problem, the following research questions have been raised:

- What is the situation of company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio, loan loss provision ratio, return on assets and return on equity of microfinance companies?
- What is the relationship between company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio, loan loss provision ratio with return on assets and return on equity of microfinance companies?
- How does company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio and loan loss provision ratio effect on return on assets and return on equity of microfinance companies?

**1.3 Objectives of the Study**

The general objective of this study is to analyze the credit management and profitability of microfinance companies. The other specific objectives of the study are as follows;

- To examine the situation of company size, cash reserve ratio, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio, loan loss provision ratio, return on assets and return on equity of selected microfinance companies.
- To assess the relationship between company size, cash reserve ratio capital adequacy ratio, loan to deposit ratio, non-performing loan ratio, loan loss provision ratio with return on assets and return on equity of selected microfinance companies.
- To analyze the effect of company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio and loan loss provision ratio on return on assets and return on equity of selected microfinance companies.

**1.4 Hypothesis of the Study**

This study tried to analyze the credit risk management practice and profitability of Nepalese microfinance companies using the variables such as; company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio, loan loss provision

ratio, return on assets and return on equity of the microfinance companies. The variables have different relation with the profitability of the microfinance companies. Following are the assumption for the variables;

H1: Company size has significant effect on profitability of microfinance companies.

H2: Capital adequacy ratio has significant effect on profitability of microfinance companies.

H3: Loan to deposit ratio has significant effect on profitability of microfinance companies.

H4: Non-performing loan ratio has significant effect on profitability of microfinance companies.

H5: Loan loss provision ratio has significant effect on profitability of microfinance companies.

**1.5 Rationale of the Study**

Loans and advances are widely recognized as the mainstay of all microfinance companies. They contribute significantly to the company's gross earnings and net profit. Company's lending is critical because it allows a country to finance its agricultural, industrial, building, and commercial operations.

The health of the advances is the primary determinant of the financial system's strength and soundness. As a result, the capacity of microfinance companies to develop and implement policies and processes that increase credit quality and reduce nonperforming loans is essential for survival in a competitive environment. Inability to produce and build quality loans and creditworthy consumers leads to default risk and bankruptcy, as well as stifles a country's economic progress. However, there has been minimal research on the methods and means that enable quality loan creation and development, as well as the link between theories, ideas, and credit policies at the national and regional levels.

As a result, this study is expected to be crucial in identifying best practices and concepts for prudent lending to improve credit management performance to all microfinance company managers and policymakers, as well as to all financial institutions. Furthermore, it may serve as a baseline for scholars interested in expanding the field.

### 1.6 Limitations of the Study

The limitation of the study are as follows: (source: NRB Directives)

- Currently, there are of 55 microfinance companies in Nepal till year January 2024, only three microfinance companies i.e. Nirdhan Utthan Laghubitta Bittiya Sanstha Limited (NUBL), Chhimek Lagubhitta Bittiya Sanstha Limited (CBBL), and Swabalamban Laghubitta Bittiya Sanstha Limited (SWBBL) are taken for the proposed study and thus may not represent the whole population.

  This study concentrates only on credit management and profitability aspects.
- The study is based on secondary data collected from annual reports of the sample microfinance companies.
- The study limited to ten year's data from year 2013/14 to 2022/23.
- In this study, only selected financial and statistical tools are used for the analysis.

# CHAPTER-II
# REVIEW OF LITERATURE

This chapter is focused with a survey of literature on the issue of credit management and microfinance company's profitability. This chapter emphasizes the literature on the issue that is available to my knowledge, research effort and relevant study on this topic, review of journals, publications, and thesis already conducted.

## 2.1. Conceptual Review

The conceptual review in this section includes the basic review of credit management and profitability of the microfinance companies.

### 2.1.1 Concept of Credit Risk Management

There are many definitions given for credit management by different scholars. Among these some are here cited as follows:

Credit risk management is critical since extending credit is believed to be the same as investing in a consumer. However, debt repayment should not be delayed for too long, as late payments and bad debts cost the organization money. Thus, the efficiency and effectiveness with which each step of loan processing is performed utilizing multiple metrics has a substantial impact on credit management performance (Dahal & Dahal, 2002). Credit management, from the perspective of a debtor, is the management of money, particularly debts, so that you do not have a trail of creditors following you about. Credit management is a major duty that both the debtor and the creditor must accept. Credit management, when properly implemented, is an effective tool for a company's financial stability (John, 2003). Credit management is the implementation and maintenance of a set of policies and processes to reduce the amount of capital tied up in debtors and the business's exposure to bad debts (Hettihewa, 2007).

Credit risk management refers to the whole lending process, from contacting potential borrowers to retrieving the loan amount. Credit management in the microfinance industry is involved with operations such as accepting applications, loan evaluation, loan approval, monitoring, non-performing loan recovery, and so on. Thecredit

management process merits special attention since it has a significant impact on the success or failure of financial institutions. This means that credit should be supported by suitable and appealing credit rules and procedures that improve credit management performance and safeguard the microfinance sector from collapse (K.C., 2013).

Microfinance companies take numerous factors into account as a part of credit management when giving credit as a primary source of revenue, which allows them to limit the risk of default, which results in financial trouble and bankruptcy. This is because when financial institution provide credit, they are subject to the risk of default (risk of interest and principal repayment), which must be handled successfully in order to achieve the needed level of loan growth and performance. As a result, the success of most microfinance company is dependent on their ability to control credit risk to an acceptable level.

### 2.1.2 Credit Risk Management Techniques

Because the lending function is easy and creates the value of the microfinance companies, the bulk of company assets are in the form of loans. If the borrower is unable to repay the loan, a dangerous scenario may arise. As a result, effective responsible credit risk management is critical. In their work published in the journal of banking and finance, Merton and Bodies proposed three techniques for the credit parameter (Michel et al., 2001).

**• Risk Based Pricing**

It has been shown that risk-based pricing requires lenders to modify the interest rate to compensate for the loan's riskiness. The pricing approach must be simple and not based primarily on past loan loss history. Loan pricing in practice tends to follow the prime rate + basis. Because the prime rate is not the lowest rate a microfinance company charges, the most creditworthy clients can negotiate a lower rate. Microfinance companies employ the discount prime rate to compete with open market products such as commercial paper and corporate bonds (Dahal & Dahal, 2002).

**• Assets Restriction**

Other creditors, such as microfinance lenders, have a claim on the borrower's assets. Creditors are protected as long as the market worth of assets exceeds the value of

liabilities, because profits from asset sales pay the total claim. Alternatively, as long as a business has a positive net worth, it will not give over assets to creditors that exceed the amount of the claim against it. Lenders can protect themselves by ensuring that the value of assets always exceeds the value of claims. The fundamental means of fulfilling these objectives are to limit the amount of debt a borrower takes on and to limit the unpredictability of the value of assets. Long agreements with restrictive covenants and the strength of microfinance companies' customer relationships are practical strategies for lenders to implement asset limitations or give borrowers incentives for compliance (Aswath, 2001).

**• Monitoring**

If lenders have a contractual right to continuously monitor asset values and seize assets, loan losses can be minimized by auditing asset values and obtaining assets before short falls exist, or by requiring the published value of collateral assets to equal or exceed the promised payment for private loans, which microfinance companies have significant experience in organization, monitoring without ongoing surveillance is costly (K.C.,2013).

Before granting credit to a customer, the microfinance companies analyze the project from numerous perspectives. It will assist the microfinance companies in determining whether the project is indeed appropriate for investment. The microfinance company needs to do a project evaluation for this. The goal of project evaluation is to ensure an acceptable return on investment from the project. Project appraisal is done to analyze either the project technically sound? or not, Will the project provide a reasonable return? and is the project in line with the overall economic objectives of the country? Generally, the project appraisal involves the investigation from financial aspect. economic aspect, management/organizational aspect and legal aspect aspects (Gautam,2004).

### 2.1.3 Credit Risk Management in Microfinance Industry

Microfinance institutions face a variety of hazards since they are responsible for utilizing depositor money and circulating assets in the market. Microfinance company risks are influenced by changes in numerous elements such as interest rates, foreign currency rates, and so on. Credit risk, on the other hand, has a bigger influence on the

company's profitability and performance (Nepal Rastra Bank, 2023). The profitability- making model for banks and financial institutions is loan interest, non-interest revenue, and investment returns, with the model including the maximum percentage of loan interest in profit. Constant policy changes and increased loan demand need greater usage of funds. BFIs are controlled by the government and are also affected by profit motives, Regulators have even begun to contemplate utilizing internal credit models developed by banks to develop capital adequacy rules. As a result, funding for small and large firms is a more substantial and dependable commitment of cash with the promise of a larger return.

The effectiveness of the fund's investment is determined by numerous aspects, including staff efficiency, company policy, asset quality review, borrower assessment, and many more. Unproductive loans have a bigger influence on the performance and profitability of financial institutions (Said, 2018). However, the use of funds in the unproductive sector has unanticipated and significant delays. Bad loans are followed by increased loan loss provisions, liquidity issues, and reputation issues, ultimately leading to the loss of important clients and large sections of the company's profitability. Credit risk management is a critical function of banking and financial institutions since it primarily lends and borrows money from shareholders and depositors (Treacy & Carey, 2000).

Apart from that, BFIs play a key role in the economy by moving money through loans and sponsoring business ventures. Risk develops when loans are extended. Loans and timely loan repayments impact the company's performance and profit, as well as the loss it must face; the more the debt, the greater the provision for debt (Bhattarai, 2016). It is critical for every financial institution to regulate and maintain credit limits since BFIs are key sources of money injection into the economy; hence, losses caused by credit risk mismanagement have an opposite effect on the economy.

### 2.1.4 Concept of Profitability

Profit can have various distinct interpretations. Profit can refer to a company's remuneration for its managerial functions. Normal profit is defined as the minimal amount required to keep a company in operation. Profit might be viewed as a reward for genuine entrepreneurial function. It is the entrepreneur's compensation for taking

the risk. It's called supernormal profit analysis. Profit might mean monopolistic profit. It is obtained by a business through extortion as a result of its market monopoly. It has nothing to do with any helpful specialized function. Monopoly profit is thus not a practical reward. Profit can occasionally take the form of a windfall. It is an unexpected reward earned by a firm just by mere chance, an inflationary boom (Chand, 2019).

Profit means different things to different individuals, such as company owners, accountants, legislators, workers, and economists. Profit is simply a positive gain created by business operations or investment after all expenses or costs are deducted. Profit is described in economic terms as a compensation gained by an entrepreneur for uniting the forces of production to meet the needs of individuals in an unpredictable economy. Profit, in layman's terms, is income that flows to the investor. Profit in accounting refers to the excess of income over all paid-out costs. In economics, profit is classified as pure profit, economic profit, or just profit (Nitisha, 2019).

The phrase "Profitability" is made up of two words: "Profit" and "Ability." Profit may be divided into two categories: economic and accounting profit. According to capital accountancy mathematics, the final 'accounting' profit of such firms has two components: a return representing economic rent on the value of land and a return on capital. However, there is no understanding what portion of 'accounting' profit each of these two economic parts represents. As a result, there emerges the perplexing truth that 'accounting' or 'businessman's profit' is not 'economic' profit (Gupta, 1992).

The goal of profitability measurement is to determine if a microfinance company's resources were used efficiently to accomplish its profitability goals. The profitability targets relate to the minimum profit that the firm must earn rather than the greatest profit that it can produce. The minimal profit is the profit at the lowest possible rate necessary for the specified form of microfinance investment. However, there must be enough profit not only to yield the capital in the market rate of return on money that has already been sunk in company, but also to supply extra capital required to meet the cost of being in business (Dangol et al., 2021).

Profit, according to one economist, is the payoff for taking risks in business. A labor leader may argue that it is a measure of how effectively labor has produced and that it serves as a foundation for bargaining a pay rise. And investors will see it as a measure of the return on their investment. An internal revenue agent could consider it a foundation for calculating income taxes. The accountant will simply define it as the excess of a firm's income above the cost of creating revenue in a certain fiscal quarter (Lynch & Williamson, 1989).

Every business has a unique set of objectives. The purpose of business is to maximize profits. Profitability is critical for every business. It is just as necessary as water. To pay the costs of remaining in business, such as machine replacement, furnishings, machine obsolescence, market or technical hazards, and so on. Profit is critical in terms of the self-financing principle. It gives structure and aids in lowering the cost of capital. Profitability is an attractive feature for investors. As a result, investors will put their money where there is a good chance of profit. Profit is therefore essential to secure and meet the expectations of management, owners, investors, employees, and the nation as a whole (Dangol et al., 2021).

## 2.2 Theoretical Review

Reviewing the broad ideas of credit risk management in this part helps offer a clearer sense of how microfinance companies carry out their credit risk management, notwithstanding the specific methodologies that may differ among microfinance companies. The following are credit risk management theories:

### 2.2.1 Commercial Loan Theory

The commercial loan idea, often known as the real bills concept, is the earliest banking theory. According to the commercial loan theory, microfinance company should only lend on short-term, self-liquidating commercial paper. According to Hosna and Manzura (2009) the commercial loan theory is designed to have a strong effect on both company lending and general economic activity. Adherence to this notion is supposed to function as a monetary supply to changes in overall economic activity. This theory is evidently prevalent among Nigerian Deposit-Money Banks (DMBS). Nigerian bankers feel that because their resources can be repaid quickly, depositors' funds should be used to make short-term loans.

According to Kargi (2011) the strong ties to this notion are quite conventional when considering that during the time of the theory's dominance, there were little or no secondary reserve assets that may have functioned as a liquidity buffer for the microfinance institution. This idea ignores Nigeria's developing economy's credit requirements. It has not pushed microfinance companies to lend money to buy plants, equipment, land, or homes. To assert that all loans should be liquidated in the regular course of business demonstrates that the theory fails to appreciate the greater stability of deposits. Demand deposits, on the other hand, are on demand, although not all depositors are likely to demand payment at the same time. Thus, deposit stability allows a microfinance to extend money for a fair length of time without risk of illiquidity. Despite its shortcomings, the commercial loan idea, or real bills doctrine, has been an enduring banking theory. Its traces may still be found in the organization of company regulatory institutions, company inspection methods, and many company's minds. One cannot comprehend modern banking without first comprehending our microfinance history, and one cannot comprehend banking history without first comprehending commercial loan theory.

### 2.2.2 The Shiftability Theory

According to Moti, Masinde and Mugenda (2012) assets do not have to be connected to solely self-liquidating bills, but can also be kept in other shiftable open-market assets such as government securities. It should be noted that the shiftability theory did not replace or render the commercial loan theory incorrect. The shiftability hypothesis, on other hand, takes a broader perspective of the banking business by widening the range of assets regarded appropriate for company ownership. The shiftability argument does not state that commercial loans are improper company assets, but it does state that they are not the only acceptable asset. The shiftability theory contends that a company's liquidity is determined by its ability to transfer assets to someone else at a predictable price. Thus, it would be perfectly permissible for a microfinance companies to maintain short-term open market investments in its asset portfolio.

According to Hosna and Manzura (2009) the shiftability hypothesis has a significant impact on banking procedures. It essentially shifted the focus of bankers and banking authorities away from loans and toward investments as a source of microfinance

companies' liquidity. Indeed, proponents of the thesis contended that the liquidity of short-term commercial loans was, in any event, primarily fictitious. The shiftability hypothesis, like the commercial loan theory, has a severe weakness, according to Kargi (2011). Actually, this problem did not lay so much in the theory itself-it was widely acknowledged by the numerous writers on the topic as it did in the microfinance management practices to which the theory led. The theory's flaw was simple: while one bank might generate needed liquidity by transferring assets, the same could not be said of all microfinance companies combined.

### 2.2.3 The Anticipated Income Theory

Prochnow developed a new lending theory dubbed "the Anticipated Income Theory" as a result of a detailed investigation in 1949. Afriyie and Akotey (2011) discovered in their study that: In every instance, independent of the form and character of the borrower's company, the company planned liquidation of term loans from the borrower's projected earnings. Liquidation occurs not through the sale of the borrower's assets, as in the commercial or conventional theory of liquidity, or by the transfer of the term loan to another lender, as in the shiftability theory of liquidity, but through the borrower's anticipated income. In effect, this theory assumes that companies should make loans on the basis of the anticipated income of the borrower and not on his present value. One noteworthy feature of this theory is its "future-oriented approach" to microfinance loans and advances (Kolapo et al., 2012). It is also known as the "cash flow approach" to financing. This hypothesis, when properly understood, was merely a challenger to the commercial loan theory, not the shift ability theory. It does not call into doubt the shiftability assumption that a company's primary source of liquidity is its secondary reserves. Rather, it refocused attention on the sorts of loans suitable for a microfinance companies to provide, but came to a quite different result than supporters of the commercial lending theory (Moti et al., 2012).

### 2.2.4 The Credit Risk Theory

According to Salas and Saurina (2002) credit risk is the risk that a borrower may fail to make required payments on any sort of loan. The lender bears the majority of the risk which includes lost principle and interest. Disruption loss can be whole or partial, and it can occur in a variety of conditions, such as an insolvent microfinance unable to

repay cash to a depositor. To mitigate the lender's risk, the lender may conduct a credit check on the potential borrower, require the borrower to get proper insurance, such as mortgage insurance, or seek third-party security or guarantees. In general, the higher the risk, the higher will be the interest rate that the debtors will be asked to pay on the debt (Owojori et al., 2011).

### 2.2.5 The Liability Management Theory

This argument contends that traditional standards are unneeded since reserve money may be acquired or purchased in the money market using short-term debt instruments anytime a microfinance encounters a reserve shortage. According to Shafiq and Nasr (2010) this does not imply that the company just controls its obligations and is inactive with regard to its assets. Rather, the theory continues to acknowledge that the company's asset structure plays a significant role in delivering liquidity to the microfinance. However, the theory adopts a one-dimensional view to liquidity, arguing that the microfinance may also use its liabilities to provide liquidity. A microfinance requires liquidity for deposit withdrawals as well as to accommodate reasonable loan requests from its clients. Microfinance company's loans are not only profitable, but a company that refuses or is unable to offer loans to its depositors when they want cash is unlikely to maintain those depositors for long.

## 2.3 Empirical Review

### 2.3.1 Review of International Articles

Naji and Hassan (2023) investigated credit risk management and its impact on the performance of commercial banks in pakistan. The objectuve of the study was to investigate the effect of default or credit risk management on the financial performance of banks and how factors of CRM affect each other. In this study sixteen private commercial banks have been taken into the consideration and the data from the year 2012 to 2021 were analyzed. In this study return on quuity, loan to deposit ratio, loan loss provision ratio, non-performing loan ratio and capital adequacy ratio were analyzed. In this study granger causality and impulse response were been identified and analyzed including regressiomn model. It was found that loan to deposit ratio showed Con the significant negative effect on ROE of the banks. Similarly, non-performing loan ratio has significant negative effect on ROE of the banks. On the other hand, coefficients of loan loss provision ratio and capital

adequacy ratio showed positive effect on ROE of the banks the coefficients were not significant.

Qazi et al. (2022) analyzed on credit risk management practices and banks performance in Pakistan. To investigate whether the credit risk management of Pakistan's commercial banks listed on the Pakistan Stock Exchange is linked to financial performance. In this study data of five major banks of Pakistan were analyzed. In this study non-performing loan ratio, capital adequacy ratio and profitability (ROA and ROE) of the banks were analyzed. For the data analysis linear regression model was applied. It was revealed that capital adequacy ratio has significant positive effect on profitability of the banks. Similarly, non-performing loan ratio has significant positive effect on profitability of the banks.

Yeasin (2022) examined the impact of credit risk management on financial performance: A study of commercial banks in Bangladesh. To analyze the impact of credit risk management on financial performance of commercial banks. In this study data of 6 commercial banks in Bangladesh were analyzed, ROA, non-performing loan ratio, capital adequacy ratio and loan to deposit ratio of the banks were analyzed. For the data analysis descriptive statistics and multiple regression model was used. It was found that non-performing loan ratio, capital adequacy ratio and loan to deposit ratio have significant effect on ROA of the banks. Non-performing loan ratio has significant negative effect on ROA of the banks and capital adequacy ratio has significant negative effect on ROA of the banks whereas loan to deposit ratio has no significant positive effect on ROA of the banks,

Kawor and Atinyo (2021) explored the link between credit risk and profitability of universal banks in Ghana. The study tried to analyze the effect of bank credit risk on profitability of universal banks in Ghana. This study used data of 22 universal banks of Ghana. In this study non-performing loan ratio, loan to deposit ratio, provision to loan loss ratio and ROA of the banks were analyzed. Ordinary Least Squares (OLS) was used for estimation of the relationship between credit risk and profitability. The regression analysis revealed that non-performing loan ratio, loan to deposit ratio and provision to loan loss ratio have significant effect on ROA of the banks. The results revealed non-performing loan ratio and loan to deposit ratio to have significantly

positive effects on ROA, while provision to loan loss ratio has negative effect on ROA Overall, the findings pointed out that credit risk influences firm profitability, and thus, management of universal banks in Ghana are required to take pragmatic steps towards minimizing the threats posed by credit risk.

Rahmanullah (2021) studied the effects of credit risk on the profitability of commercial banks in Afghanistan. This study tried to examine the effects of credit risk on commercial banks' profitability in Afghanistan. In this study data of six domestic private commercial banks in Afghanistan are analyzed. This study analyzed loan loss reserve to total loan ratio, total loan to total assets ratio, total loan to total deposit ratio, logarithm of total assets, ROA and ROE of the banks. This study applied the fixed effects estimator on balance panel data. The regression analysis found that credit risk indicators have significant effect on ROA. The study found significant negative effect of loan loss reserve to total loan ratio on ROA, total loan to total assets ratio has no significant negative effect on ROA, total loan to total deposit ratio has no significant negative effect on ROA and logarithm of total assets also has significant negative effect on ROA. Similarly, credit risk indicators have significant effect on ROE. There was significant negative effect of loan loss reserve to total loan ratio on ROE, total loan to total assets ratio has no significant negative effect on ROE, total loan to total deposit ratio has no significant negative effect on ROE and logarithm of total assets also has significant negative effect on ROE.

Sharma and Kaur (2021) examined the relationship between credit risk management and profitability performance of Indian public sector banks. The study explored the relationship between credit risk management and banks' profitability of Indian public sector banks. This study analyzed the data of Indian public sector banks. In this study ROA, ROE, capital adequacy ratio, non-performing loan ratio and leverage ratio of the banks were analyzed. Data analysis in the study was done with the help of descriptive statistics, correlation analysis and multiple regression analysis model. It was revealed that capital adequacy, non-performing assets ratio and leverage ratio have significant effect on ROA. There is significant positive effect of capital adequacy ratio on ROA of the banks, non-performing loan ratio has significant negative effect on ROA and leverage has no significant negative effect on ROA. Similarly, capital adequacy, non-performing assets ratio and leverage ratio have

significant effect on ROE. There is significant positive effect of capital adequacy ratio on ROE of bank, non- performing loan ratio has significant negative effect on ROE and leverage has no significant positive effect on ROE.

Kosumi and Kosumi (2021) studied on banks specific factor that determinate the profitability of commercial banks in republic of North Macedonia. This study was conducted to identify the key determinants of commercial banks' profitability by case study, Republic of North Macedonia. This study analyzed the data of 13 commercial banks of republic of North Macedonia. In this study ROA, capital adequacy, credit risk, bank size, revenue diversification, liquidity and leverage of the banks are analyzed. This study used heteroscedasticity test, serial correlation test on multiple regression analysis model to analyze the data. The study found that capital adequacy, bank size, revenue diversification, liquidity and leverage have significant effect on ROA. The effect of capital adequacy on ROA is negative, credit risk has negative effect, revenue diversification has no significant positive effect on ROA, leverage has no significant negative effect on ROA, liquidly has significant positive effect on ROA and bank size has significant positive effect on ROA.

Nugraha et al. (2021) examined the impact of non-performing loans, loan to deposit ratio and education diversity on firm performance of Indonesia banking sectors. The objective of the study was to determine the effect of non-performing loans, education diversity and loan to deposit ratio on return on assets in Indonesian banks. This study used the data of 33 companies from a population of 41 companies in Indonesia stock exchange. In this study ROA, non-performing loan, ratio loan to deposit ratio and education diversity of the companies are analyzed. For the data analysis quantitative panel data regression model was used and t-test and f-test were performed. The results showed that the non-performing loan ratio, loan to deposit ratio and education diversity simultaneously had a significant effect on return on assets. Partially, on-performing loan ratio has significant negative effect on return on assets, and the loan to deposit ratio and educational diversity have significant positive effect on return on assets.

Al-Amin et al. (2021) researched on effects of non-performing loan on financial performance: A hypothetical evaluation on all scheduled banks in Bangladesh. The objective of the study was to determine the impact of non-performing loans on the

financial performance of all Bangladeshi listed banks. This study used the data of all Bangladeshi listed banks for the analysis. In this study ROA, non-performing loan ratio, capital adequacy ratio, inflation rate and provision maintenance ratio of the banks are analyzed. In this study descriptive statistics, correlation analysis and multiple regression model were used for the data analysis. The study revealed that non- performing loans ratio capital adequacy ratio, provision margin ratio and inflation rate have significant effect on return on assets of the banks. It was found that non-performing loan ratio has significant negative effect on ROA of the banks, capital adequacy ratio has significant negative effect on ROA, inflation rate has significant positive effect on ROA and provision maintenance ratio has significant positive effect on ROA of the banks.

Akomeah et al. (2020) examined on credit risk management and financial performance of listed banks in Ghana. The purpose of this study was to investigate how credit risk management affected the performance of a few Ghanaian listed commercial banks. The study included many independent variables for credit risk management, including non- performing loans, loan loss provision, and capital adequacy. The controlling variable was bank size. The dependent variable, which examined the financial performance of commercial banks, was return on asset. Standard descriptive statistics and a fixed effect model were used to analyze the data and test hypotheses. This study discovered a substantial correlation between the credit risk management variables (NPL, CAR, and SIZE) and the profitability of listed banks in Ghana, based on the test performed on the gathered data and the analysis of the findings. In general, banks must maintain an optimal level of CAR in accordance with regulatory requirements in order to avoid financial difficulties in fulfilling their responsibilities, be prepared to withstand potential financial shocks, safeguard the investments of their depositors, and thereby support the stability of the financial system. Ravi Kumar et al. (2020) analyzed credit risk and financial performance-evidence from the commercial banks of Oman listed in Muscat securities market. To investigate the quantifiable effect of credit risk on the performance of listed banks in the sultanate of Oman. This study was based on secondary data extracted from the Muscat Securities Market (MSM). In this study ROA, ROE, bank size, assets quality, credit risk, oil prices and capitalization of the bank are analyzed. Panel data has been

employed in this study and random effect model was used to analyze the time series data. It was found that ROA of the banks are significantly affected by bank size, assets quality, credit risk, oil prices and capitalization of the banks. The effect of bank size on ROA was positive, assets quality (NPL/TA) has significant negative effect on ROA, credit risk (NPL/TL) has significant negative, oil price has no significant positive effect on ROA and capitalization has significant positive effect on ROA of the banks. Similarly, ROE of the banks are significantly affected by bank size, assets quality, credit risk, oil prices and capitalization of the banks. The effect of bank size on ROE was positive, assets quality (NPL/TA) has significant negative effect on ROE, credit risk (NPL/TL) has significant negative, oil price has significant positive effect on ROE and capitalization
has significant positive effect on ROE of the banks.

Ali and Dhiman (2019) examined the impact of credit risk management on profitability of public sector commercial banks in India. This study tried to explore an empirical association between the credit risk management and banks' financial performance. In this study data of public sector commercial banks of India are analyzed. In panel model equation, non-performing loan ratio, loan loss provision ratio, capital adequacy ratio, assets quality, management, earnings, liquidity and ROA of the banks were analyzed in this study. The panel data regression was applied for the purpose of analysis of data. The results of the research revealed that credit risk management indicators have a significant influence on the financial performance of selected public sector banks in India. The empirical findings indicate that ROA (profitability) is positively affected by capital adequacy ratio, management quality and earnings ability have significant positive effect in ROA of the banks, whereas liquidity has no significant positive influence on ROA.

Robert and Mary (2018) analyzed on effect of credit risk management practices on performance of commercial banks in Kenya. The purpose of the study was to determine how Kenyan commercial banks' performance was impacted by their credit risk management strategies. The study specifically looked at how Kenyan commercial banks' financial performance was affected by loan assessment, lending criteria, credit management instruments, and the loan recovery procedure. The multiple regression

approach with panel data was applied in this investigation. According to the study, the loan recovery procedure, lending requirements, credit management instruments, and loan evaluation was significantly and favorably correlated with Kenya's commercial banks' financial performance. Commercial banks must clearly define a procedure for authorizing new credit and refinancing current credit, as well as set overall credit limitations for specific borrowers. Additionally, it's important to check up with borrowers on their payment plans and to remind clients before they mature.

Daniele and Vito (2018) studied on dynamic approach merging network theory and credit risk techniques to assess systemic risk in financial networks. Using the PD model, a dynamic model that integrates credit risk methodologies with a contagion mechanism on the network of exposures across banks, the study attempted to estimate systemic risk. A multi-period Monte Carlo simulation that takes into account the banks' probability of default (PD) and inclination to fail during the same time period yields a possible loss distribution. It was discovered that there was a significant contagion regime emerging, with reduced bank default correlation correlated with bigger losses. The benefits of diversification that are typically associated with normal credit risk models are not supported by this. As a result, banks and regulators may underestimate the capital required to weather a crisis, adding to the instability of the financial system.

Ndoka and Islami (2016) studied the impact of credit risk management in the profitability of Albanian commercial banks during the period 2005-2015. The main objective of the study was to study if it exists a relationship between credit risk management and profitability of commercial banks in Albania. In this study data of 16 banks operating in the Albanian banking system are analyzed. ROA, ROE, NPL ratio and CAR are analyzed in this study. Descriptive statistics and OLS model were tested in this study. The study found that capital adequacy ratio and non-performing loan ratio have significant effect on ROE. Non-performing loan ratio has significant negative effect on ROE while capital adequacy ratio has on significant negative effect on ROE. Similarly, capital adequacy ratio and non-performing loan ratio have significant effect on ROA. Non-performing loan ratio has significant negative effect on ROA while capital adequacy ratio has on significant negative effect on ROA.

| S.N. | Author(s) Years | Title | Objectives | Methodology | Major Findings |
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| 1 | Naji &, Hassan, (2023). | Credit risk management and its impact on the performance of commercial bank in Pakistan, an application of penal var approach | The major objective for this study was to investigate the effect of credit risk management of the financial performance of bank and how factor of CRM affect each other. | In this study sixteen private commercial banks have been taken into the consideration and the data from the year 2012 to 2021 were analyzed. In this study return of equity, loan to deposit ratio, loan loss provision ratio, non-performing loan ratio and capital adequacy ratio were analyzed. In this study granger causality and impulse response where been identified and analyzed including regression model. | t was found that loan to deposit ratio showed the significant negative effect on ROE of the banks. Similarly, non-performing loan ratio has significant negative effect on ROE of the banks. On the other hand, coefficients of loan loss provision ratio and capital adequacy ratio showed positive effect on ROE of the banks the coefficients re not significant. |
| 2 | Qazi et al. (2022). | Credit risk management practices and banks | To investigate whether the credit risk | In this study data of five major banks of Pakistan were analyzed. In | It was revealed that capital adequacy ratio has significant |

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| | | performance in Pakistan. | management of Pakistan's commercial banks listed on the Pakistan Stock Exchange is linked to financial performance. | this study non-performing loan ratio, capital adequacy ratio and profitability (ROA and ROE) of the banks were analyzed. For the data analysis linear regression model was applied. | positive effect on profitability of the banks. Similarly, non-performing loan ratio has significant positive effect on profitability of the banks. |
| 3 | Yeasin (2016) | Impact of credit risk management on financial performance. A study of commercial bank in Bangladesh. | To analyze the impact of credit risk of management of financial performance of commercial bank. | In this study data of 6 commercial bank in Bangladesh were analyzed. ROA, NPLR, CAR and LDR of the banks were analyzed. For the data analysis descriptive statistics and multiple regression model was used. | It was found that non-performing loan ratio, capital adequacy ratio and loan to deposit ratio have significant effect on ROA of the banks. Non-performing loan ratio has significant negative effect on ROA of the banks and capital adequacy ratio has significant negative effect on ROA of the banks whereas loan to deposit |

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| 4 | Kawor & Atinyo.. (2021). | The link between credit risk and profitability of universal bank in Ghana. | The study tried to analyzed the effect of bank credit risk on profitability of universal bank in Ghana. | This study used data of 22 universal banks of Ghana. In this study NPLR, LDR, PLLR and ROA of the banks were analyzed. Ordinary Least Squares (OLS) was used for estimation of the relationship between credit risk and profitability. | The results revealed non-performing loan ratio and loan to deposit ratio to have significantly positive effects on ROA, while provision to loan loss ratio has negative effect on ROA. Overall, the findings pointed out that credit risk influences firm profitability, and thus, management of universal banks in Ghana are required to take pragmatic steps towards minimizing the threats posed by credit risk. |
| 5 | Rahmanullah. | The effect of | This study | In this study data | The study found |

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| (2021). | credit risk on the profitability of commercial bank in Afghanistan. | tried to examine the effect of credit risk on commercial bank's profitability in Afghanistan.. | of six domestic private commercial banks in Afghanistan are analyzed. This study analyzed LLTTL, TLTA, TLTD, SIZE, ROA and ROE of the banks. This study applied the fixed effects estimator on balance panel data. | significant negative effect of loan loss reserve to total loan ratio on ROA, total loan to total assets ratio has no significant negative effect on ROA, total loan to total deposit has no significant negative effect on ROA and logarithm of total assets also has significant negative effect on ROA. Similarly, credit risk indicator has significant effect on ROE. There was significant negative effect on loan loss ratio on ROE. Total loan and total assets ratio has no significant negative effect on ROE. Logarithm of total assets also has significant |

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| 6 | Sharma & Kaur (2021) | The relationship between credit risk management and profitability performance of Indian public sector banks. | The study explored the relationship between credit risk management and bank profitability of Indian public sector banks. | This study analyzed the data of Indian public sector banks. In this study ROA, ROE, CAR, NPA ratio and LP of banks were analyzed. Data analyzed in the study was done with the help of descriptive statics, correlation analysis and multiple regression analysis model. | It was revealed that capital adequacy, non-performing assets ratio and leverage ratio have significant effect on ROA. There is significant positive effect of capital adequacy ratio on ROA of the banks, non- performing loan ratio has significant negative effect on ROA and leverage has no significant negative effect on ROA. Similarly, capital adequacy, non-performing assets ratio and leverage ratio have significant effect on ROE. There is significant positive effect of capital |

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| | | | | | adequacy ratio on ROE of the banks, non-performing loan ratio has significant negative effect on ROE and leverage has no significant positive effect on ROE. |
| 7 | Kosumi & kosumi (2021). | A study on bank specific factor that determined the profitability of commercial bank in republic of north Macedonia. | This study was conducted to identified the key determinants of banks profitability by case study republic of north Macedonia. | This study analyzed the data of 13 commercial banks of republic of North Macedonia. In this study ROA, capital adequacy, credit risk, bank size, revenue diversification, liquidity and leverage of the banks are analyzed. This study used heteroscedasticity test, serial correlation test on multiple regression analysis model to analyze the data. | The study found that capital adequacy, bank size, revenue diversification, liquidity and leverage have significant effect on ROA. The effect of capital adequacy on ROA is negative, credit risk has negative effect, revenue diversification has no significant positive effect on ROA, leverage has no significant negative effect on ROA, liquidly |

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| | | | | | has significant positive effect on ROA and bank size has significant positive effect on ROA. |
| 8 | Nugraga et al, (2020). | Impact of non-performing loan. Loan to deposit ratio and education of diversity on firm performance of Indonesia bank. | This study was to determine the effect of non-performing loans education diversity and loan to deposit ratio on return on assets in Indonesia bank. | This study used the data of 33 companies from a population of 41 company's in Indonesia stock exchange. In this study ROA, non-performing loan, ratio loan to deposit ratio and education diversity of the companies are analyzed. For the data analysis quantitative panel data regression model was used and t-test and f-test was performed. | The results showed that the nonperforming loan ratio, loan to deposit ratio and education diversity simultaneously had a significant effect on return on assets. Partially, on- performing loan ratio has significant negative effect on return on assets, and the loan to deposit ratio and educational diversity has significant positive effect on return on assets. |
| 9 | Al-amin et al. (2021) | Effect of non-performing | The objective of the study | The study used the data of all Bangladeshi listed bank for the analysis.in | The study reveals that non-performing loans |

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| | | loan on financial performance A hypothetical evaluation on all scheduled bank in Bangladesh. | was to determine the impact of non-performing loans on the financial performance of all Bangladeshi listed bank. | the study ROA,NPLR,CAR,INF,and PMR of the bank are analyzed.in this study descriptive stactical, correlation analysis and multiple regression modal are used in data analysis. | ratio capital adequacy ratio, provision margin ratio and inflation rate have significant effect on return on assets of the banks. It was found that non performing loan ratio has significant negative effect on ROA of the banks, capital adequacy ratio has significant negative effect on ROA, inflation rate has significant positive effect on ROA and provision maintenance ratio has significant positive effect on ROA of the banks. |
| 10 | Akomeah et al. (2020). | Credit risk management | The main objective of | This study used standard descriptive and fixed | This study found a significant |

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| | | and financial performance of listed bank in Ghana. | the study was to examine the effect of credit risk on management on the performance of selected listed banks in Ghana. | effect on model for hypothesis testing. | relationship between the credit risk management variables (NPL, CAR and SIZE) and the profitability of listed banks in Ghana. In general, banks need to maintain an optimum level of CAR as per regulatory requirement so that they will not have difficulty in meeting their financial obligations. |
| 11 | Ravi Kumar et al. (2021). | Credit risk and financial performance-evidence from the commercial banks of Oman listed in Muscat securities market | To investigate the quantifiable effect of credit risk on the performance of listed banks in the sultanate of Oman | The analysis of this study was based on secondary data extracted from the Muscat Securities Market (MSM). In this study ROA, ROE, bank size, assets quality, credit risk, oil | It was found that ROA of the banks are significantly affected by bank size, assets quality, credit risk, oil prices and capitalization of the banks. The effect of bank size on ROA was positive, |

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| | | prices and capitalization of the bank is analyzed. Panel data has been employed in this study and random effect model was used to analyze the time series date. | assets quality (NPL/TA) has Significant negative effect on ROA, credit risk (NPL/TL) has significant negative, oil price has no significant positive effect on ROA and capitalization has significant positive effect on ROA of the banks. Similarly, ROE of the banks are significantly affected by bank size, assets quality, credit risk, oil prices and capitalization of the banks. The effect of bank size on ROE was positive, assets quality (NPL/TA) has significant negative effect on |

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| | | | | | ROE, credit risk (NPL/TL) has significant negative, oil price has significant positive effect on ROE and capitalization has significant positive effect on ROE of the banks. |
| 12 | Ali & Dhiman (2019) | The impact of credit risk management on the profitability of public sector commercial banks in india. | This study tried to explore an empirical association between the credit risk management and bank financial performance. | In this study data of public sector commercial banks of india are analyzed. In panel model equation NPLR , LLPR, CAR, AQ, MEL ,and ROA of the bank were analyzed in this study. The panel regression was applied for the purpose of analysis of data. | The results of the research revealed that credit risk management indicators have a significant influence on the financial performance of selected public sector banks in India. The empirical findings indicate that ROA (profitability) is positively affected by capital adequacy ratio, |

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| | | | | | management quality and earnings ability have significant positive effect in ROA of the banks, whereas liquidity has no significant positive influence on ROA. |
| 13 | Daniele & vito (2018). | A dynamic approach merging network theory and credit risk techniques to assess systematic risk in financial networks. | To quantify systematic risk with the PD model, a dynamic modal that combine credit risk techniques with a contagion mechanism on the network of exposures among banks. | Probability of default and dynamic model analysis | It was revealed the emergence of a strong contagion regime where lower default correlation between banks corresponds to higher losses. This is the opposite of the diversification benefits postulated by standard credit risk models used by banks and regulators who could therefore underestimate the capital needed to overcome a period |

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| | | | | | of crisis, thereby contributing to the financial system instability. |
| 14 | Robert & Mary (2018). | The effect of credit risk on Management practices on performance of commercial bank in Kenya. | To establish the effect of credit risk management practices on performance of commercial bank in Kenya. | This study used panel data and multiple regression analysis. | The study found that loan appraisal, lending requirement, credit management tools and loan recovery process had a positive and significant relationship with the financial performance of commercial banks in Kenya. |
| 15 | Ndoka & Islami. (2016). | The impact of credit risk management in the profitability of Albanian commercial banks during the period 2005-2015 | To study if it exists a relationship between credit risk management and profitability of commercial banks in Albania. | In this study data of 16 banks operating in the Albanian banking system are analyzed. ROA, ROE, NPL ratio and CAR are analyzed in this study. Descriptive statistics and OLS model were tested in this study. | The study found that capital adequacy ratio and non-performing loan ratio have significant effect on ROE. Non-performing loan ratio has significant negative effect on ROE |

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| | | | while capital adequacy ratio has on significant negative effect on ROE. Similarly, capital adequacy ratio and non-performing loan ratio have significant effect on ROA. Non-performing loan ratio has significant negative effect on ROA while capital adequacy ratio has on significant negative effect on ROA. |

### 2.3.2 Review of Nepalese Articles

Bhatt et al. (2023) examined the determinants of credit risk management and their relationship with the performance of commercial banks in Nepal. This study examines the mediating role of credit risk management on the performance of commercial banks in Nepal. In this study correlation and regression model are applied for the study. It was found that there was a positive relationship between environmental risk and credit risk management. It was also found that credit appraisal measurements had

a significant effect on credit risk management. The market risk analysis had a significant effect on credit risk management. Credit risk management mediates the relationship between environmental risk, credit appraisal measurements, market risk analysis, and the performance of commercial banks.

Shrestha (2022) examined the effect of credit risk on profitability of Nepalese commercial banks. The study's objective was to investigate how credit risk affects Nepalese commercial banks' profitability. Descriptive and causal research designs were used in this study. Correlation analysis and regression analysis models were employed for the analysis using descriptive statistics. The ratios of total loan to total deposit (TL/TD), cash reserve ratio (CRR), nonperforming loan to total loan (NPL/TL), and loan loss provision to total loan (LLP/TL) were used to evaluate credit risk, while return on assets (ROA) was used to measure profitability. It was discovered that the profitability of Nepalese commercial banks was significantly impacted positively by TL/TD and negatively by NPL/TL and LLP/TL. In order to boost the profitability of Nepalese commercial banks, the bank management should raise the ratio of total loan to total deposit and lower the ratio of nonperforming loan to total loan and loan loss provision to total loan.

Chhetri (2021) examined the effect of credit risk management on financial performance of Nepalese commercial banks. The primary objective of this research was to look at how credit risk affected Nepal's commercial banks' financial performance. The data analysis methods employed in this study included regression analysis, correlation analysis, and descriptive statistics. It was discovered that non-performing loans (NPLR) significantly and negatively impacted financial performance (ROA). The bank size (BS) and capital adequacy ratio (CAR) had a negative and statistically insignificant effect on financial performance (ROA). The study found that the management quality ratio (MQR) had a positive and significant association with the financial performance (ROA) of the commercial banks in Nepal, whereas credit to deposit (CDR) had a positive but no significant relationship with ROA.

Risal and Poudel (2020) explored the role of credit risk in performance difference between A and B class banks in Nepal. This study explained the performance differences between A and B class financial institutions arising from credit risk. In

this study data of 28 commercial banks and 11 national level development banks are considered for analysis. ROA, ROE, loan loss provision to total loan ratio, non-performing loan ratio, credit deposit ratio and capital adequacy ratio, GDP and inflation rate are analyzed in this study. Descriptive statistics, stationartity test, heterogeneity test and multiple regression model are applied in this study. The regression results showed that capital adequacy ratio has significant positive effect on ROA, non- performing loan ratio has significant negative effect on ROA, loan loss provision to total loan ratio has no significant negative effect on ROA, credit deposit ratio has significant positive effect on ROA and GDP and inflation has significant negative effect on ROA. Similarly, capital adequacy ratio has significant negative effect on ROE, non- performing loan ratio has no significant negative effect on ROA, loan loss provision to total loan ratio has significant negative effect on ROA, credit deposit ratio has no significant positive effect on ROA and GDP and inflation has significant negative effect on ROA.

Budathoki and Rai (2020) administered the effect of specific factors on bank profitability: evidence from Nepalese banks. Examining the effects of asset quality, capital adequacy ratio, asset diversification, and operational efficiency on banks' profitability was the primary goal of this study. The performance of the banks was taken into consideration in this study, with ROA serving as the dependent variable. The bank- specific factors were capital adequacy, asset quality, operational revenue, and non- interest income. To examine the data, the ordinary least squares model was employed. Three predictor factors were shown to have a substantial impact on bank profitability: capital adequacy ratio, operational efficiency, and asset quality. However, there was no discernible impact of the predictor variable diversity on banks' profitability. The study's findings assist bankers and legislators in making wise decisions that will increase banks' profitability.

Pradhan and Shah (2019) studied on credit risk management of commercial banks in Nepal. The study concentrated on the methods used by commercial banks to evaluate credit risk based on borrower, asset, and internal efficiency assessments. The study's model is mostly based on an investigation of the connections between loan repayment, credit risk reduction strategies, and practices for managing credit risk. The study employed survey-based primary data and conducted a correlation analysis on

them using a descriptive research methodology. It was shown that while borrower hurdles had no discernible association with loan payback, credit risk reduction strategies and credit risk management techniques have a favorable relationship with loan repayment.

Neupane (2019) conducted a study on factors influencing profitability in Nepalese commercial banks. Examining the variables affecting Nepalese commercial banks' profitability was the study's main objective. This study has used regression analysis to look at how macroeconomic and bank-specific factors affect profitability. It was discovered that the ratio of credit to deposit had substantial impacts on net interest margin, as did the ratio of operational expenditure to operational income and non-interest income to total assets on return on assets. Nonetheless, size has had a noteworthy impact on Nepalese commercial banks' ROA and NIM. Additionally, CD has a favorable impact on ROA, indicating that higher credit and deposit flows translate into higher profitability. Ultimately, the analysis showed that the profitability of commercial banks is not significantly impacted by the capital adequacy ratio, GDP, inflation, or credit risk.

Bimali and Subedi (2018) analyzed Nepalese banking sector: performance update and outlook. This study examined the overall pattern in Nepal's banking sector while paying particular attention to the operational outcomes of 28 commercial banks. The emphasis was on how the banking sector has changed as a result of the NRB's new paid up capital requirements for BFIs. The problem was analyzed in this study using a descriptive analytic method. This analysis showed that the (undirected) aggressive expansion strategy of BFIs is projected to be curbed by regulatory action through future monetary policy. Over the last two to three years, rapid credit expansion has been driven by return pressure on additional capital, without corresponding improvements in the economy's fundamentals. If this kept up without any controls, it may have an unjustified effect on lessened by low interest rates as BFIs may more readily find buyers for mortgaged houses. The recent surge in credit growth observed in the banking sector has positively impacted bank profits. Increased loan mobilization rates also prevented the diluting impact brought on by capital infusion and retained profit accruals, helping to preserve NIMS.

Shrestha (2017) analyzed the impact of credit risk management on profitability: Evidence from Nepalese commercial banks. This study was conducted to examine the impact of credit risk management on profitability of Nepalese commercial banks. In this study data of 18 commercial banks in Nepal are analyzed. ROA, ROE, capital adequacy ratio, non-performing loan ratio, cash reserve ratio, assets growth rate and leverage ratio are analyzed in this study. Descriptive statistics, correlation analysis and linear regression model were analyzed in this study. The study found that capital adequacy ratio has significant positive effect on ROA, non-performing loan ratio has significant negative effect on ROA, cash reserve ratio has significant negative effect on ROA, assets growth rate has significant positive effect and leverage ratio has significant negative effect on ROA. Similarly, capital adequacy ratio has significant positive effect on ROE, non-performing loan ratio has significant negative effect on ROE, cash reserve ratio has significant negative effect on ROE, assets growth rate has significant positive effect and leverage ratio has significant negative effect on ROE.

Khanal (2016) studied on determinants of profitability in Nepalese commercial bank. Examining the macroeconomic and bank-specific factors that affect Nepalese commercial banks' profitability was the aim of this study. Profitability was measured using return on equity (ROE) and return on assets (ROA). Regression models and Pearson's correlation coefficients were used in this study to assess the importance and influence of macroeconomic and bank-specific factors on the profitability of commercial banks in Nepal. It was discovered that return on assets and return on equity are positively connected with equity to total assets, loan loss provision to total loan, GDP growth rate, and inflation, and negatively correlated with expense to revenue ratio, total loan to total deposit ratio, and bank size. It suggests that ROA and ROE would be higher the greater the equity to total assets, loan loss provision to total loan, GDP growth rate, and inflation. Similarly, worse ROA and ROE would result from bigger expenditure to revenue ratios, total loans to total deposits, and bank sizes.

### 2.3.3 Review of Previous Studies

Lamichhane (2022) conducted a study on non-performing loan management of commercial bank (with reference to NIBL). The objectives of this study were to assess Nepal Investment Bank Ltd.'s NPL ratio, examine the connection between loan size and non-performing loans, and investigate how non-performing assets affect

commercial banks' bottom lines. The non-performing loan management of NIBL is examined in this study using financial, statistical, and descriptive analysis approaches. The loan and advance to total deposit ratio was shown to exhibit erratic tendencies. Every year, both the mean and the ratio at the bank increase. It suggests improved deposit mobilization. A larger ratio mean indicates that the bank is lending more money in the form of advances and loans in order to generate higher returns. Throughout the research period, there has been a tendency of fluctuation in the loans and advances to total assets ratio. It is discovered that a significant share of the bank's overall assets were loans and advances. The percentage of total non-performing loans kept in provisions is high enough. It shows that there is adequate protection made by the bank against non-performing loans. The bigger the buffer against the risk of real loan loss, the higher the fraction of non-performing loans allocated against loans.

Baniya (2022) conducted a study on credit practices of commercial banks (with reference to Nabil Bank Limited (NBL), Standard Chartered Bank Limited (SCBL) and Himalayan Bank Limited). The purpose of this study was to compare the financial performance of SCBL, NBL, and HBL, as well as to look at the banks' lending efficiency and the relationship between lending activity and bank profits. According to the study, the ratio of NBL's total debt to total assets is the greatest when measuring lending strength in relative terms. The performance of the other two banks, however, has not strayed too far from the combined average and the mean ratio of NBL. Throughout the research period, NBL supplied the most loans and advances overall. The industrial and productive sectors of the economy are best served by NBL. This analysis has also shown that NBL has the best overall liquidity strength out of all the banks. The greatest likely danger, though, is the liquidity risk brought on by the NBL interest rate. Due to the market's extreme sensitivity to interest rates, NBL has historically offered lower interest rates than other banks.

Gautam (2021) studied on non-performing loan management and liquidity analysis of commercial banks in Nepal (with reference to NIBL and SCBNL). The main objectives of the study were to assess the commercial banks' maintained liquidity ratio, examine the trajectory of non-performing loans held by the chosen banks, and examine the commercial banks' loan and advance flows. In order to compare the amount of liquidity in the sample banks, the research employed statistical, financial,

and descriptive analysis techniques in the report. According to this analysis, NIBL has a smaller loan loss provision to total loans and advances than SCBNL. This suggests that NIBL had a lower percentage of nonperforming loans and hazardous assets overall. Compared to NIBL, SCBNL has a larger current ratio and a lower liquidity risk. More importantly, NIBL was better able to fulfill its obligations and meet its need for cash as needed.

According to this analysis, SCBNL was better equipped to use its long-term, highly interest-bearing deposits to provide advances and loans for financial gain. Sharma (2020) conducted a research on comparative study on credit management of commercial banks: with reference to NIBL and NIC. Analyzing commercial banks' credit policies, practices, and activities; examining the credit and advances they offer; assessing the credit disbursed and its recovery status; and identifying the bank's strengths and weaknesses in credit administration were the main goals of the study. It was discovered that non-performing loans have a significant impact on the banking industry. A rise in non-performing loans will have an impact on the banking industry as a whole. Profit declines and the provision amount would rise. Therefore, it was advised that both banks (NIC and NAB) offer loans with sincerity and pursue non-performing loans effectively. The correlation coefficient shows a somewhat unfavorable relationship between loans and non-performing loans. In other words, lowering loan management performance contributes to a reduction in non-performing loans

Dhamala (2019) conducted a study on lending practices of finance companies of Nepal. The purpose of this study was to evaluate how well finance companies performed in terms of loan volume and quality as well as how much they contributed to profitability. This study's foundation was secondary data from finance businesses about loan flow, revenue from loans (interest earnings), and the relationship between interest earnings and the company's total profit. The study's primary conclusion was that loans and advances are one of financial organizations' primary revenue streams. Since loan loss provision was a natural result of advances and loans, it increased synchronously with those two factors. The study's recommendations included an increase in financial businesses' loans and advances as well as a rise in non-

performing loans and loan loss provisions. Therefore, further measures to control over NPL should be implemented.

Roka (2018) conducted a study entitled a study on non-performing loan and loan loss provision of commercial banks: with reference to Everest Bank Ltd. and Standar Chartered Bank Nepal Ltd. The research examined and interpreted SCBNL and EBL's credit management. Numerous statistical and financial methods have been employed and examined in the analysis section. According to this analysis, there was some fluctuation in the loan and advance to total deposit ratios during the course of the investigation. Generally speaking, SCBNL has kept a larger loan loss reserve than EBL. Still, both banks have succeeded in bringing them down to 5%. The data also reveals that SCBNL has a higher percentage of non-performing loans than EBL on average. Compared to EBL, SCBNL is less adept at managing loans and advances. It may be concluded that EBL and SCBNL are excelling at managing credit.

Sharma (2017) conducted a study on comparative study of credit management of Nepalese commercial banks: with reference of Nabil Bank Ltd., Nepal Credit and Commercial Bank Ltd. and Nepal Investment Bank Ltd. The purpose of this study was to evaluate commercial banks' credit. It was discovered that bank non-performing assets (NPAs) have been rising over the course of the research period, with poor oversight, a lack of emphasis on lending policy while issuing loans, and poor management being the main causes of this rise. The component that has the least influence on the supervision and monitoring system has been identified as the average factor, and legal provision for recovery has been shown to be the reason for an increase in non- performing assets (NPA) in Nepalese banks. Simultaneously, it has been determined that commercial banks prioritize lending their resources to the commerce sector. It is then discovered that the service industry is not given much attention.

Manandhar (2016) conducted a research on credit management in commercial banks of Nepal (with reference to NABIL Bank, Standard Chartered Bank, Everest Bank and Himalayan Bank). The main objectives of this study were to examine the volume of credit and advances contributed by the sample banks, examine how the deposit base was mobilized for the benefit of the sample banks, investigate the

relationship between the deposit, loan, and advance amounts and the sample banks' net profit, and offer appropriate recommendations for efficient credit management. According to the study, SCBNL has disbursed more credit and advances than other banks, made the best use of the entire deposit when granting loans and advances, and has continued to be more successful in managing credit to generate the highest interest income. The interest income on credit and advances relative to total assets also suggests that credit and advances are a significant source of income for banks.

Tharu (2015) examined on loan and non-performing loan analysis of Everest Bank Limited. This research set out to ascertain and evaluate Everest Bank Ltd.'s non-performing loan management, evaluate bank credit performance, examine credit risk management factors, and gather feedback for efficient credit management. In order to achieve its goals, this study combined an analytical and descriptive research approach with the use of statistical techniques and certain credit-related ratios. According to the study, Everest Bank Ltd.'s loan loss provision to non-performing loan ratio was trending process. The interest downward, which has altered the parameters of the previous credit rate on advances and loans was trending upward. We may conclude that strong lending performance was indicated by a ratio that is over 50% for each fiscal year. The larger ratio of interest expenditures to interest revenue indicates that the bank's profitability was not favorable. The loan and advances policy of Everest Bank Ltd. was significantly impacted by changes in total deposits.

Bhattarai (2015) conducted a study on implementation of directives issued by Nepal Rastra Bank: a comparative study of Nepal SBI Bank Ltd. and Nepal Banglades Ltd. The study's goals were to examine the several facets of NRB guidelines, including loan provisioning, capital sufficiency, and loan categorization. According to this study, the loan categorization aids banks in keeping an eye on the quality their advances and loans and in moving forward with corrective measures to improve the credit quality of such advances and loans. The study found that the performance of banks is mostly impacted by past-due loans. The bank's profitability is negatively impacted by the NLP. Although the banks were able to adjust NPL provision over time in accordance with the instructions, managing NPLs alone through provisioning is not always the best course of action. To reduce their

potential NPL levels, banks should concentrate on improving their lending policies. According to this report, banks should use extreme caution when determining the ability of their credit consumers to make payments. If the bank was not attentive, a prolonged past due period will force it to increase its provisions, which will keep the bottom line low.

### 2.4 Research Gap

Several research studies on credit risk management and microfinance companies' profitability have been undertaken by various students, professionals, and researchers. Because prior research yielded limited results, more rigorous testing and modification of key factors are required to be more decisive regarding credit management. This study is different from the previous studied in term of sample data and time period considered for the study. This study is concentrated on the data analysis of three sample banks which has not been analyzed by previous researchers i.e. NUBL, CBBL, NMBMF, JSLBBL and SWBBL. This study analyzed the ten-year data from 2013/14 to 2022/23. For the data analysis comparative analysis as well as relationship analysis using the panel data of sample banks has been used in this study. This study covers advanced methods such as ratio analysis, correlation analysis, and co-efficient of variation, t- tests, and multiple regression analysis, which were not employed in earlier research. The use of multiple regression analysis to assess the influence of credit management factors on profitability in this study distinguishes it from earlier studies. In this study the independent variables such as; company size, capital adequacy ratio, loan to deposit ratio, non-performing loan ratio and loan loss provision ratio are used for the effect analysis on return on assets and return on equity which has not been analyzed the previous studies.

# CHAPTER-III

# RESEARCH METHODOLOGY

The Research approach used in this chapter follows a few simple but critical procedural to reach goals. The term research technique refers to the different sequential processes that can be used to evaluate the influence of credit management on the profitability of Nepalese microfinance companies.

## 3.1 Research Design

To achieve the specific objective of the study, descriptive and casual comparative research design have been carried out. Descriptive method is used to compare the credit risk management and profitability position of Nepalese microfinance companies while casual comparative research design is used for the relationship and effect analysis of credit management variables i.e. capital adequacy ratio (CAR), loan to deposit ratio (LDR), non-performing loan to total loan ratio (NPLR), loan loss provision to non- performing loan ratio (LLPR) and company size (SIZE) on profitability. This study used descriptive statistics, correlation analysis and multiple regression analysis

## 3.2 Population and Sample, and Sampling Design

Recently there were 55 micro finance companies as of January 2024. Among them 3 microfinance companies are wholesale microfinance and remaining 52 are retail microfinance companies. Total no. of microfinance companies are population of this study and for this study only five microfinance companies banks are taken as sample. The microfinance companies in the study consist of the five top ranked companies which are found to be growing companies in term of assets, equity, deposit and lending throughout the study period i.e. NUBL, CBBL, NMBMF, JSLBBL and SWBBL. The sample microfinance companies are selected using convenient sampling technique since the data related to the credit risk indicators of these companies are clearly mentioned in the financial reports and this study mainly tries to analyze the credit risk management and profitability of microfinance companies Nepal.

### 3.3 Nature and Sources of Data, and Instrument of Data Collection

Basically this study is concerned with those data and information obtained from the secondary sources. Thus, this study is mainly based on secondary data to fulfill above- mentioned objectives. The secondary data are collected from various reports of selected microfinance companies which are either published or kept into their websites. Here, in this research study the research period is taken from the year of 2013/14 to the year 22/23 to give the recent research result.

### 3.4 Method of Analysis

This study examines the credit position and financial performance of the sample microfinance companies using descriptive statistical analysis, and the connection between the variable is evaluated using correlation and regression.

#### Descriptive Statistic

Numbers that are used to summarize and characterize data are known as descriptive statistics. The term "data" describes the details that have been gathered through an experiment, a survey, a historical record, etc. The following statistical techniques are utilized in this study to more precisely analyze the data:

#### Arithmetic Mean

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

$$\text{Mean } (\bar{X}) = \frac{x_1 + x_2 + x_3 + x_4 \ldots\ldots\ldots\ldots + x_n}{n} \quad \text{Or, } \bar{X} = \frac{\Sigma x}{n}$$

Where,

$\bar{X}$ = Arithmetic Mean return

$x_1, x_2, x_3, x_4 \ldots\ldots\ldots\ldots x_n$ = Set of Observation

$\Sigma x$ = Sum of given Observation

n = Total number of Observations

**Standard Deviation**

Standard deviation is defined as the positive square root of the mean as square of the deviation takes from the arithmetic mean. It indicates the ranges and size of deviance from the middle or mean. It measures the absolute dispersion. Higher the standard deviation Higher will be the variability and vice versa. Dispersion measures the variation of the data from the central value. In other words, it helps to analyze the quality of data regarding its variability. It is calculating as:

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

**Correlation Analysis**

Out of several mathematical method of measuring correlation the Karl Pearson popularity known as Pearson's coefficient of correlation widely used in practice to measure the degree of relationship between two variables. Two variables are said to have correlation when the value of one variable is accompanied by the change in the value of the other. Therefore, it is measured by following formula using two variables. It is denoted by small 'r'.

$$\text{Correlation Coefficient (r)} = \frac{n\Sigma XY - \Sigma X \Sigma Y}{\sqrt{n\Sigma X^2 - (\Sigma X)^2}\sqrt{n\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

r = coefficient of correlation

$\Sigma XY$ = Sum of product of two series.

$\Sigma X^2$ = Sum of squared in X series

$\Sigma Y^2$ = Sum of squared in Y series

n = number of years

The value of this coefficient can never be more than + 1 or less than -1. Thus, + 1 and -1 are the limit of this coefficient. The value of r = + 1 implies the correlation between variables is positive and vice- versa. And zero denoted no correlation.

**Regression Analysis**

Multiple linear regression attempts to model the relationship between two or more explanatory variables and a response variable by fitting a linear equation to observed data. Every value of the independent variable x is associated with a

value of the dependent variable y. On this regression analysis, banks profitability variables (dependent) return on assets (ROA) and return on equity (ROE) is tested for their relationship with explanatory variables. The explanatory variables are independent variables, which are taken from bank specific (internal) factors such as cash reserve ratio (CRR), non-performing loan ratio (NPLR), credit to deposit ratio (CDR), leverage ratio (LEV), bank size (SIZE). Therefore, the following model has been employed for the study of relationship and effect of the study variables.

Model 1: $ROA_{it} = \beta_0 + \beta_1 CRR_{it} + \beta_2 CDR_{it} + \beta_3 NPLR_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + e_{it}$ (1)

Model 2: $ROE_{it} = \beta_0 + \beta_1 CRR_{it} + \beta_2 CDR_{it} + \beta_3 NPLR_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + e_{it}$ (2)

Where:

$ROA_{it}$ = Return on assets of bank $i^{th}$ for the time period t

$ROE_{it}$ = Return on equity of bank $i^{th}$ for the time period t

$NPLR_{it}$ = Non-performing ratio of bank $i^{th}$ for the time period t

$CRR_{it}$ = Cash reserve ratio of bank $i^{th}$ for the time period t

$CDR_{it}$ = Credit to deposit ratio of bank $i^{th}$ for the time period t

$LEV_i t$ = Interest spread ratio of bank $i^{th}$ for time period t

$SIZE_{it}$ = Bank size $i^{th}$ for the time period t

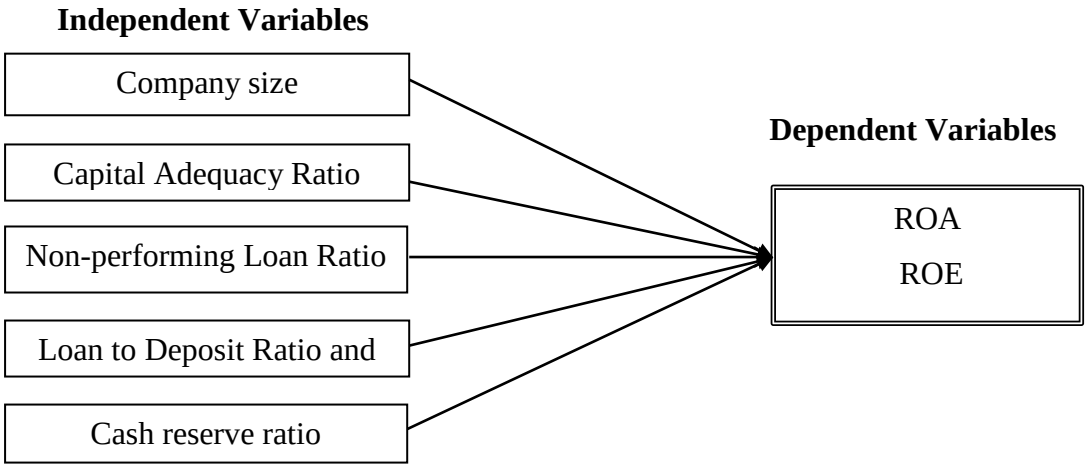
$\beta_0$ = The intercept (constant)

$\beta_1, \beta_2, \beta_3, \beta_4 \beta_5$ = Regression coefficient of independent variables.

e = error component.

### 3.5 Research Framework and Definition of Variables

The influence of credit risk management on Microfinance Company's profitability is examined in this study using correlation analysis and multiple regression analysis. The dependent variables of profitability in this study are ROA and ROE, while the independent factors of credit risk management analysis are company size (SIZE), capital adequacy ratio (CAR), loan to deposit ratio (LDR), non-performing loan to total loan ratio (NPLR) and cash reserve ratio(CRR) loan loss provision to non-performing loan ratio (LLPR). The conceptual framework for this study is; From the theoretical and empirical literature reviews, the following conceptual framework of the study is developed by the researcher.




*Source: kosumi & kosumi (2021); Amin & Raham, (2021) ;And Yeasin, (2022)*

*Figure 1* Research Framework

## Definition of Variables

### Company Size

The size can be classified according to the number of factors including its total assets, revenue, market capitalization. company's size cab be impacted by operations, management style, marketing, plans and compliance needs. The size of the microfinance companies in this research may be calculated using the natural logarithm of total assets of the company. The term "company size" refers to the idea that larger organizations are better positioned than smaller firms to capitalize on economies of scale in transactions and enjoy higher profitability (Kosumi & Kosumi, 2021).

## Capital Adequacy Ratio

An essence indicator of financial institution capacity to weather financial hardship and carry on with business operation is the capital adequacy ratio.it supports risk management, stability in the financial system and adherence to global banking laws. To hedge against possible losses and preserve the interest of depositors and the larger financial system and microfinance must maintain certain CAR threshold. And its components are tier 1 capital, tire 2 capital and risk-weighted assets. In this

research, the capital adequacy ratio refers to the amount of equity and other reserves held by the microfinance company in relation to its total assets. It is believed that there would be a considerable association between total equity ratio or capital adequacy ratio and financial performance (Amin & Rahman, 2021). The ratio is calculated as;

Capital Adequacy Ratio =Total Equity / Total Assets× 100

**Non-Performing Loans to Loan and Advances Ratio**

When a borrower fails to pay the lender the agreed upon principal and interest the loan is considered non-performing(NPLR) due to the possibility of losses and the potential impact on the banks and financial stability and these loans are great concern to financial institutions. The NRB has required all microfinance companies to set up loan loss reserves for questionable and bad loans. This ratio aids in the reduction of non-performing loans and the control of credit. Non-performing loans demonstrate management's capacity to manage non-performing loans issued by microfinance companies. As a result, the larger the ratio, the lower the quality of a company will be, with the likelihood of a problematic company increasing (Yeasin, 2022 and Nugraha et al., 2021). This ratio is calculated as;

Non-performing Loans to Loan and advance Ratio = Non-performing Loans / Loan and advances x 100

**Loan to Total Deposit Ratio**

The main sources of company's lending depend on its deposit. It is crucial indicator of banks financial health, balancing the need for profitability through the lending with the necessary of maintaining adequate liquidity. This ratio is calculated to find out how successfully the microfinance companies are utilizing their deposits on loans and advances for profit generating activities. The Loan to Deposit Ratio states how far a company has used depositors' money to provide loans to its customers (Nugraha et al., 2021). Greater ratio indicates the better utilization of total deposits. It is calculated as;

Loan and Advances to Total Deposit Ratio = Loan and Advance / Total Deposits × 100

**Loan Loss Provision to Non-Performing Loan Ratio**

The compulsion element in lending practices is loan loss provision, and the harmful factor in microfinance company is non-performing loans. This ratio calculates the percentage of provided loans that are non-performing loans. It is the compulsion component since all loans must provide provision. Rather, the difference in comparison to non-performing loans is insufficient to provide a decent return. This ratio is used by Amin and Rahman, (2021); Islam et al. (2020) and Zeleke and Sindhu (2021) in their study before and it is calculated as;

Loan Loss provision to Non-Performing Loan Ratio = Loan Loss Provision / Non-performing Loan x 100

**Cash Reserve Ratio (CRR)**

A regulatory requirement for microfinance companies is cash reserve ratio which specific the minimum proportion of total deposit that financial companies must have in cash reserve. Usually the reserve is to keep in the nation's central banks. Ensuring banks have enough liquidity to meet depositor needs and managing the money supply in the economy are the main goals of CRR. There are the crucial points of CRR which are regulatory requirement, percentage of deposit liquidity management monetary policy tools.

**Return on Assets(ROA)**

ROA is an important measure of a company's profitability reflecting how effectively and efficiently the firm's assets are used. The higher the ROA higher is the returns on equity. ROA can be improved by increasing the net income more than the assets or by using the existing assets more efficiently. The ratio is a key measure of management effectiveness. It reflects how well the microfinance company used its assets. The ratio evaluates how far the company's management has used all of its assets to generate profits. Higher ROA shows more efficiency in the use of total assets, and vice versa.

Return on Total Assets (ROA) = Net Profit After Tax / Total Assets × 100

**Return on Equity(ROQ)**

To understand the ROQ, indicates the tends over time and its performance relative to competitors. ROQ is the product of a series of ratio. This ratio measures how responsibly management has used shareholder funds to protect shareholders' interests and enhance their net value. It is a calculation of the rate of return accessible to microfinance company's' shareholders. The ratio ensures that the firm offers a decent return on equity. Net profit is divided by total equity capital to compute it.

Return on Equity (ROE) = Shareholders Equity / Net Profit After Tax × 100

# CHAPTER IV
# RESULTS AND DISCUSSION

As the researcher discussed in the previous chapters the major objective of this study is to investigate the impact of credit risk on profitability of Microfinance companies in Nepal. Therefore, this chapter deals with the results and analysis of the findings and it contains three sections. The first section presented descriptive statistic and correlation analysis on variables of the study; the second section presented fulfillment of the linear regression model assumptions; the third section laid down the discussion. The data analysis procedures used for ratio scale measurement and the ratio of the specified dependent and independent variables were calculated for further statistical analysis.

## 4.1 Results

### 4.1.1 Descriptive Statistics of Variables

Table 1 contains the descriptive statistics for the variables utilized in the study. The descriptive statistics used in the study consists of mean, standard deviation, number of observations, minimum and maximum values. The table reports bank profitability indicator is return on assets (ROA) and return on equity (ROE) and five credit risk indicators which are the cash reserve ratio (CRR), credit to deposit ratio (CDR), capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and bank size (SIZE). Looking at them, generally, the statistics indicate a wide variability exist in the indicators of credit risk and profitability of banks and financial instructions.

Table 2

Descriptive Statistics of Variable of microfinance companies

| Variables | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| CRR | 30 | 6.71 | 30.23 | 16.2800 | 6.21766 |
| CDR | 30 | 54.87 | 90.10 | 75.4307 | 9.40103 |
| NPLR | 30 | 0.12 | 30.65 | 3.9673 | 5.95495 |
| CAR | 30 | 339.65 | 22.30 | .95.70 | 64.1138 |
| LSIZE | 30 | 4.33 | 5.42 | 5.0527 | 0.27219 |
| ROA | 30 | 0.55 | 3.44 | 1.5550 | 0.69160 |
| ROE | 30 | -361.24 | 42.94 | .2470 | 70.40644 |

Source: Appendix –II

Table 2 reveals that the descriptive statistics of three sample microfinance companies in Nepal from 2013/14 to 2022/23. It shows that the mean of the cash reserve is 16.2800 with standard deviation of 6.21766 and ranges from 6.71 to 30.23 percent. Likely, the average credit to deposit ratio is 75.4307 with standard deviation of 9.40103 and minimum and maximum liquidity are 54.87 percent and 90.10 percent respectively. The mean of the non-performing loan ratio is 3.9673 with standard deviation of 5.95495 and ranges from 0.12 to 30.65 which means low credit risk of the banks and the value of non-performing can deviate on both sides by 5.95495.

In addition, the mean value of banks size is 5.0527 with the standard deviation 0.27219. The maximum value of bank size is 4.33 and 5.42. It also shows that the mean of the ROA is 1.5550 with standard deviation of 0.69160 and ranges from 0.55 to 3.44 percent. Likely, the average ROE is 0.2570 with standard deviation of 70.40644 and minimum and maximum liquidity are -361.24 percent and 42.94 percent respectively.

### 4.1.2 Correlation Analysis

A correlation matrix is a table showing correlation coefficients between variables. Each cell in the table shows the correlation between two corresponding variables. A correlation matrix is used as a way to summarize data. This allows us a glance of which variables have correlation in which level of strength and significance. In this study cash reserve ratio, credit to deposit ratio, non-performing loan ratio, leverage ratio and bank size are the independent variables and ROA and ROE are the dependent variables. Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship) and a correlation coefficient of zero, indicates that there is no linear relationship between the two variables. Correlation matrix is presented as following in Table 3.

Table 3

Pearson Correlation Coefficients of Study Variables

| | CRR | CDR | NPLR | CAR | LSIZE | ROA | ROE |
|---|---|---|---|---|---|---|---|
| CRR | 1 | | | | | | |
| CDR | -.179 | 1 | | | | | |
| NPLR | -.212 | -.600** | 1 | | | | |
| CRR | -186 | .331 | 0.24 | 1 | | | |
| LSIZE | -.217 | .770** | -.765** | .101 | 1 | | |
| ROA | .323 | -.101 | .152 | .130 | -.480** | 1 | |
| ROE | -.108 | .387* | -.198 | .966** | .225 | .118 | 1 |

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

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

Source: Appendix-III

Table 3 presents the bivariate Pearson correlation coefficients among the variables associated with all three microfinance companies for the period 2012/13 to 2021/22. It shows that cash reserve ratio (CRR) has insignificant positive relation with ROA in 5 percent level of significance and it has insignificant negative relation with ROE with correlation coefficient -0.108. Likewise, there is insignificant negative correlation between credit to deposit ratio (CDR) and ROA with correlation coefficients -0.101 and significant positive relationship between credit to deposit ratio (CDR) and ROE with coefficients 0.387. However, there is insignificant positive correlation between non-performing loan ratio (NPLR) and ROA with correlation coefficients 0.152 but insignificant negative relationship between NPLR and ROE at 5 percent level of significance with correlation coefficient -0.198. Moreover, there is significant negative relationship between bank size and ROA but there is insignificant positive relationship between bank size and ROE of the banks.

### 4.1.3 Regression Analysis

It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable (ROA and ROE) and independent variables (cash reserve ratio, credit to deposit ratio, non-performing loan ratio, leverage ratio and bank size).

Table 4

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .719[a] | .517 | .416 | .52855 |

a. Predictors: (Constant), LSIZE, CRR, CDR, NPLR

Source: Appendix-IV

R adjusted value is 0.416 in the models denote that 41.60 percent of the observed variability in ROA can be explained by the differences in the independent variables. Remaining 58.40 percent of the variance in preference is related to other variable which did not explain, because they are not depicted in the model. The R-Square which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about 51.70 percent of the variability in the ROA of banks. In this study, the multiple correlation coefficient is 0.719, indicated that there is high relationship between study variables. This implies that the ROA was highly influenced by its independent variables. Standard error of estimate is flawlessly associated with regression analysis due to small value.

Table 5

Analysis of Variance (ANOVA)

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 7.166 | 5 | 1.433 | 5.131 | .002[b] |
| | Residual | 6.705 | 24 | .279 | | |
| | Total | 13.871 | 29 | | | |

a. Dependent Variable: ROA

b. Predictors: (Constant), LSIZE, , CRR, CDR, NPLR

Source: Appendix- IV

ANOVA Table 5 depicts the overall regression model fitness for the data. It showed p-value of 0.002 which is less than 0.05 this indicates that different factors such as LSIZE, LEV, CRR, CDR, NPLR predicts the ROA considerably.

Table 6

Regression Coefficient of Independent Variables with ROA

| Variables | Coefficients | t-statistics | p-value | Collinearity Statistics | |
|---|---|---|---|---|---|
| | | | | Tolerance | VIF |
| (Constant) | 14.702 | 3.720 | .001 | | |
| CRR | .008 | .383 | .705 | .595 | 1.680 |
| CDR | .045 | 2.515 | .019 | .341 | 2.933 |
| NPLR | -.052 | -1.617 | .119 | .265 | 3.774 |
| CAR | .081 | .037 | .711 | .806 | 1.240 |
| LSIZE | -3.258 | -3.945 | .001 | .191 | 5.245 |

Source: Appendix-IV

Table 6 depicts regression results of multivariate models under the previously specified equation to show the impact of cash reserve ratio, credit to deposit ratio, non-performing loan ratio, leverage ratio and bank size on bank profitability as measured by ROA in the context of Nepalese microfinance companies. It shows that tolerance values were above 0.1 and VIF below 10. That's why, there is no multicollinearity in the model.

The coefficient of regression (β) is 0.008 for cash reserve ratio (CRR). It indicates that if cash reserve ratio (CRR) increased by one percent then ROA increased by 0.008 percent and the p value of cash reserve ratio (CRR) is 0.705 reveals that it is statistically insignificant at 5 percent level of significance. Hence, cash reserve ratio (CRR) has insignificant positive impact on ROA of commercial banks in Nepal. Then, the coefficient of regression (β) is 0.045 for credit to deposit ratio (CDR). It indicates that if credit to deposit ratio (CDR) increased by one percent then ROA increased by 0.045 percent and the p value of credit to deposit ratio (CDR) is 0.019 discloses that it is statistically significant at 5 percent level of significance. Hence, this is significant positive effect of credit to deposit ratio (CDR) on ROA. However, the coefficient of regression (β) is -0.052 for non-performing loan ratio. It indicates that if NPLR increased by one percent then ROA decreased by -0.052 percent and the p value of NPLR is 0.119 discloses that it is statistically insignificant at 5 percent level of significance. This means NPLR has insignificant impact on ROA of sample banks. Finally, the coefficient of regression (β) is -3.258 for bank size (LSIZE). It indicates

that if LSIZE increased by one percent then ROA decreased by -3.258 percent and the p value of LSIZE is 0.001 discloses that it is statistically significant at 5 percent level of significance. Hence, this is significant negative effect of LSIZE on ROA.

Table 7

Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .984[a] | .968 | .962 | 13.79765 |

a. Predictors: (Constant), LSIZE, NPLR, CRR, CDR

*Source: Appendix- V*

R adjusted value is 0.962 in the models denote that 96.20 percent of the observed variability in ROA can be explained by the differences in the independent variables. Remaining 3.80 percent of the variance in preference is related to other variable which did not explain, because they are not depicted in the model. The R-Square which is also a measure of the overall fitness of the model indicates that the model is capable of explaining about 96.80 percent of the variability in the ROA of banks. In this study, the multiple correlation coefficient is 0.984, indicated that there is high relationship between study variables. This implies that the ROE was highly influenced by its independent variables. Standard error of estimate is flawlessly associated with regression analysis due to small value.

Table 8

Analysis of Variance (ANOVA)

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 139185.953 | 5 | 27837.191 | 146.223 | .000[b] |
| | Residual | 4569.003 | 24 | 190.375 | | |
| | Total | 143754.956 | 29 | | | |

a. Dependent Variable: ROE

b. Predictors: (Constant), LSIZE, CRR, CDR, NPLR

Source: Appendix- V

ANOVA Table exhibits the overall regression model fitness for the data. It showed p-value of 0.000 which is less than 0.05 this indicates that independent variables predicts the ROE considerably.

Table 9

Regression Coefficient of Independent Variables with ROE

| Variables | Coefficients | t-statistics | p-value | Collinearity Statistics | |
|---|---|---|---|---|---|
| | | | | Tolerance | VIF |
| (Constant) | -74.519 | -.722 | .477 | | |
| CRR | .565 | 1.059 | .300 | .595 | 1.680 |
| CDR | -.731 | -1.565 | .131 | .341 | 2.933 |
| NPLR | -1.735 | -2.076 | .049 | .265 | 3.774 |
| CAR | 1.092 | 24.530 | 0.000 | 0.806 | 1.240 |
| LSIZE | 25.453 | 1.181 | .249 | .191 | 5.245 |

*Source: Appendix- V*

Table 9 depicts regression results of multivariate models under the previously specified equation to show the impact of cash reserve ratio, credit to deposit ratio, non-performing loan ratio, and bank size on bank profitability as measured by ROE in the context of Nepalese banks and microfinance companies. It shows that tolerance values were above 0.1 and VIF below 10. That's why, there is no multicollinearity in the model.

The coefficient of regression (β) is 0.565 for cash reserve ratio (CRR). It indicates that if cash reserve ratio (CRR) increased by one percent then ROE increased by 0.565 percent and the p value of cash reserve ratio (CRR) is 0.300 reveals that it is statistically insignificant at 5 percent level of significance. Hence, cash reserve ratio (CRR) has insignificant positive impact on ROE of commercial banks in Nepal. Then, the coefficient of regression (β) is -0.731 for credit to deposit ratio (CDR). It indicates that if credit to deposit ratio (CDR) increased by one percent then ROE decreased by -0.731 percent and the p value of credit to deposit ratio (CDR) is 0.131 discloses that it is statistically insignificant at 5 percent level of significance. Hence, this is insignificant negative effect of credit to deposit ratio (CDR) on ROE. At the meantime, the coefficient of regression (β) is -1.735 for non-performing loan ratio. It

indicates that if NPLR increased by one percent then ROE decreased by -1.735 percent and the p value of NPLR is 0.049 discloses that it is statistically significant at 5 percent level of significance. This means NPLR has significant negative impact on ROE of sample banks and microfinance companies. Hence, this is significant positive effect of leverage ratio (LEV) on ROE. Finally, the coefficient of regression (β) is 25.453 for bank size (LSIZE). It indicates that if LSIZE increased by one percent then ROE increased by 25.453 percent and the p value of LSIZE is 0.249 discloses that it is statistically insignificant at 5 percent level of significance. Hence, this is insignificant positive effect of LSIZE on ROE.

**4.2 Discussion**

The main purpose of this study is to investigate the impact of credit risk on profitability of Nepalese Microfinance companies. A balance panel data of three Microfinance companies with 30 observations for the period of 2013/14 to 2022/23 have been used for the analysis. The correlation analysis found that cash reserve ratio (CRR) is found to have positive and insignificant relationship with ROA of banks which is consistent with the finding of Shrestha (2022) which observed that there is insignificant relationship between cash reserve ratio and ROA of the banks but opposite to the finding of Nugraha et al. (2021). At the meantime, cash reserve ratio has insignificant negative relationship with return on equity which is similar with the findings of Shrestha (2017) concluded that CRR had negative relationship with ROE of the banks but it does not consistent with the prior study of Sharma and Kaur (2021). Then, there is significant negative correlation between credit to deposit ratio and ROA which is similar with the prior study of Shrestha (2022) and significant positive relationship between credit to deposit ratio and ROE which is not consistent with the previous study of akomeah.et (2020). At the meantime, NPLR has insignificant positive relationship with ROA of the commercial banks. This finding is similar with the findings of Nugraha et al. (2021). However, it contradicts with the finding of Shrestha (2017) which observed that non-performing loan had significant positive relationship with ROA of the banks but it has insignificant negative relationship with ROE. Finally, bank size has significant positive relationship with ROA of the banks and negative relationship with ROE which is not consistent with the finding of Akomeah.et al. (2020) mentioned that bank size had positive

association with ROA of the banks. Likely, it contradicts with the finding of Neupane (2019) found that bank size had positive relationship with ROA.

The regression analysis shows that cash reserve ratio (NPLR) has insignificant positive impact on ROA of banks and microfinance companies. This is consistent with the finding of Qazi et.al (2022); Qazi et.al (2020) concluded that insignificant positive impact of cash deposit ratio on ROA of the banks but opposite to the finding of Shrestha (2017). At the same time, credit to deposit ratio has significant positive impact on ROA of Microfinance in Nepal. The result is consistent with Risal and Poudel (2020); Yeasin (2022). However, it contradicts with the finding of Gautam (2021); Shrestha (2021) mentioned that loan to deposit ratio has negative effect on profitability (ROA) of commercial banks. NPLR is found to have negative and insignificant impact on ROA in Nepalese commercial banks. This is also consistent with Bhatt arai (2016); Pradhan and shah et al. (2019); Singh and Sharma (2018) and akomeah.et (2020); Al nugraha.et (2021) which found that NPLR has negative effect on ROA. However, it contradicts with the finding of Annor and Obeng (2017) concluded that there is positive and significant impact of NPLR on ROA of the banks. Ayim and Agyemang (2021) but it is not consistent with finding of Shrestha (2017). The effect of bank size (LogSize) on ROA is significant negative of the banks. This is similar with the finding of Otieno, and Nyagol (2016) which observed that bank size had negative impacts on ROA of the banks. However, it contradicts with the finding of Bhatt.et al (2023) concluded that bank size had positive impact on ROA of the banks.

The regression analysis also shows that CRR is found to have positive and insignificant effect on ROE of banks. This is consistent with the finding of Akomeah et.al (2020) concluded that insignificant positive impact of cash reserve ratio on profitability of the banks but it is not consistent with the prior study of Shrestha (2017) concluded that there is negative and significant effect of CRR on ROE of banks. Likewise, credit to deposit ratio has insignificant negative impact on ROE which is consistent with the findings of prior empirical studies of Pradhan and shah et al. (2019) mentioned that credit to deposit ratio had negative impact on ROE of the banks. However, it contradicts with the finding of Risal and Poudel (2020). Further, non-performing loan ratio (NPLR) has negative and statistically significant impact on

ROE. This is consistent with Ali and Dhiman (2019); Poudel (2018); Qazi et.al.(2022). However, it is not consistent with the finding of (2020) which concluded that there is positive effect of NPLR on ROE of the banks. This study also found that leverage ratio has statistically significant positive effect on ROE of banks which is consistent with the finding of (2020) but opposite to the finding of Shrestha (2017). Finally, the effect of bank size (LogSize) on ROE is insignificant positive of the banks. This is similar with the finding of Kawor and atinyo (2021); Rahmanullah (2020) concluded that bank size had positive and insignificant positive impact on ROE of the banks. However, it contradicts with the finding of Ndoka and Islami (2018) which observed that bank size had negative impacts on ROE of the banks.

# CHAPTER V
# SUMMARY AND CONCLUSION

## 5.1 Summary

For a financial institution to be profitable and thrive, especially Microfinance, credit risk is essential. Credit risk remains an issue despite the best efforts of microfinance companies, as seen by the rising marginal losses that result from defaulted loans. Although microfinance face a variety of difficulties, credit risk management, directly or indirectly, is the main contributor. By limiting risk exposures to acceptable levels, credit risk management aims to maximize an entity's risk-adjusted rate of return. Both the risk associated with specific credits and transactions as well as the overall portfolio credit risk must be managed by banks. Both the risk associated with specific credits and transactions as well as the overall portfolio credit risk must be managed by banks. Inability to fulfill responsibilities, insufficient oversight, and a high number of defaulters, among other issues, has been complained about. In order to identify a way to increase business profitability through sound credit risk management, it is necessary to look at how different aspects of credit risk impact the profitability of financial information. The purpose of this study is to ascertain how credit risk affects bank profitability in Nepal.

The main objective of the study is to analyze the impact of credit risk management on profitability of Microfinance in Nepal. The other specific objectives are to examine the position and capital adequacy of credit risk and profitability in Nepalese commercial banks, to analyze the relationship between non-performing loan ratio loan loss provision ratio along with credit risk and profitability of banks in Nepal and to assess the impact of credit risk factors on profitability of Microfinance companies in Nepal.

This study employed descriptive and causal research design. The position and condition of credit risk and the profitability of the banks are examined using a descriptive design. The influence of the loan to deposit ratio, cash reserve ratio non-performing loan ratio, capital adequacy ratio and bank size on the profitability of Nepalese banks is evaluated using a causal comparative study methodology. There

are 55 Microfinance companies currently operating in Nepal (till July, 2023). Three Microfinance companies, CBBL, NUBL, and SWBBL, are chosen from among them as the sample for the credit risk study using the judgmental or purposive sampling method. This analysis is based on secondary data that was extracted from connected microfinance' annual reports during the ten-year period between 2013/14and 2022/23. Multiple regressions, correlation analysis, and descriptive analysis are used in this study using SPSS version 26. The dependent variables in this study were ROA and RE, whereas the explanatory variables were the cash reserve ratio, credit to deposit ratio, non-performing loan, leverage ratio, and bank size.

This study shows that the microfinance has low credit risk and lending policy of banks is sound and effective as it is acceptable up to a certain limit or below five percent. Profitability position in terms of ROA and ROE, Microfinance companies could manage their overall operations due to highest ratio as well as good financial performance. The correlation analysis reveals that cash non-performing loan has insignificant positive relation with ROA and insignificant negative relation with ROE. Likewise, there is insignificant negative correlation between credit to deposit ratio and ROA and significant positive relationship between credit to deposit ratio and ROE. Moreover, there is significant negative relationship between bank size and ROA but there is insignificant positive relationship between bank size and ROE of the banks. The multiple regression shows that Non performing loan has insignificant impact on profitability (ROA and ROE) of the banks. Then, credit to deposit ratio has significant positive impact on ROA and it has insignificant positive impact on ROE. However, non-performing loan ratio has negative impact on profitability of the sample banks. Finally, bank size has significant negative impact on profitability on ROA but insignificant negative impact on ROE of microfinance companies in Nepal. Hence it can be concluded that loan to deposit ratio, non-performing loan, loan loss provision ratio and banks size are the major indicators of credit risk and its' impact on profitability of Microfinance in Nepal.

### 5.2 Conclusions

Based on major findings, descriptive statistics concluded that credit risk position of the microfinance in term of non-performing loan ratio during the study period is less than five percent on average which denotes that banks are quit efficiently, managing

their loan and the credit risk of the banks is low. On the other hand, there is higher variation found in non-performing loan ratio since the standard deviation is high. At the meantime, profitability position of Microfinance companies is strong means good financial performance.

The correlation analysis concluded that cash reserve ratio (CRR) has insignificant positive relation with ROA and it has insignificant negative relation with ROE. Likewise, there is insignificant negative correlation between credit to deposit ratio (CDR) and ROA and significant positive relationship between credit to deposit ratio (CDR) and ROE. However, there is insignificant positive correlation between non-performing loan ratio (NPLR) and ROA but insignificant negative relationship between NPLR and ROE. Moreover, there is significant negative relationship between bank size and ROA but there is insignificant positive relationship between bank size and ROE of the banks.

The regression analysis also concluded that cash reserve ratio has insignificant impact on profitability (ROA and ROE) of the banks. Then, loan to deposit ratio has significant positive impact on ROA and it has insignificant positive impact on ROE. However, non-performing loan ratio has negative impact on profitability of the sample banks. Finally, bank size has significant negative impact on profitability on ROA but insignificant negative impact on ROE of microfinance companies in Nepal.

### 5.3 Implications

Based on the analysis, the following implications are made;

- This study found that the Loan to deposit ratio and bank size have significant effect on ROA. On the other hand, non-performing loan have significant effect on ROE. Therefore, this result gives information to the management of the Microfinance companies and policy makers to improve credit risk management and to have an effective role in achieving better performance (ROA and ROE).
- The negative coefficient of ‘non-performing loan ratio’ with bank profitability indicates that there is higher level of loan loss provision charged against profit and eventually leads to reduce profitability (ROA and ROE). Thus,

microfinance companies and banks may follow the prevailing NRB Directive as well as Basel II Accord while managing credit risk. Compliance with the Basel II Accord means a sound approach to tackling credit risk and this ultimately improves bank performance.

- The conclusions drawn from this study are beneficial and valuable for microfinance companies in formulating the right operational policies that enable them to generate sustainable profitability.
- This research is able to deliver some of the present issues, latest information and data regarding effect of credit risk on profitability. Hence this study is significant to shareholders and depositors.
- Further, this study is also hoped to be useful to academicians as a source of knowledge for further research. The study is concentrated on only five factors and thus, further study should be carried out on the topic to point out the other factors that enhance mitigation of credit risk to improve profitability of microfinance companies in Nepal.

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