RISK AND RETURN ANALYSIS ON COMMON STOCK INVESTMENT OF MICROFINANCE INSTITUTION IN NEPAL

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

By

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Certificate of Authorship

I hereby corroborate that I have researched and submitted the final draft of the dissertation entitled **"Risk and Return Analysis on Common Stock Investment of Microfinance Institutions 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 have been acknowledge. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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Pravu Khatri

May, 2024

Report of Research Committee

Mr. Pravu Khatri has defended research proposal entitled **"Risk and Return Analysis on Common Stock Investment of Microfinance Institutions in Nepal"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Mr. Arun Neupane and submit the thesis for evaluation and viva voce examination.

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Approval Sheet

We, undersigned, have examined the thesis entitled **"Risk and Return Analysis on Common Stock Investment of Microfinance Institutions in Nepal"** presented by Pravu Khatri a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the dissertation is acceptable for the award of degree.

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Abbreviations

ANOVA	Analysis of Variance
APT	Arbitrage Pricing Theory
AQ	Assets Quality
BL	Bank Leverage
BZ/BS	Bank Size
CAPM	Capital Asset Pricing Model
CAR	Capital Adequacy Ratio
COV	Covariance
CR	Credit Risk
CRR	Cash Reserve Ratio
CV	Coefficient of Variation
DTA	Deposit to Total Assets Ratio
EPS	Earnings Per Share
i.e.	That is
INTR	Interest Rates
LDR	Loan to Deposit Ratio
LLP	Loan Loss Provision Ratio
LR	Liquidity Ratio
MPT	Modern Portfolio Theory
MR	Market Risk
NEPSE	Nepal Stock Exchange
NPL	Non - Performing Loan
NRB	Nepal Rastra Bank
OER	Operating Efficiency Ratio
OR	Operation Risk
PC	Portfolio Concentration
ROA	Return on Assets
SD	Standard Deviation
SME	Small and Medium Size Enterprises
SML	Security Market Line
US	United States

Abstracts

The main objectives of this study are to examining the impact of risk factors on the profitability of microfinance institutions in Nepal. The descriptive and causal research design has been adopted for the study. The study used secondary data from five microfinance companies for ten years i.e., 2013/2014 to 2022/2023 data has been analyzing by using different statistical tools. Data is received from the annual reports of selected microfinance institution's websites. ROA and ROE is taken as an indicator of the profitability of microfinance institutions whereas, liquidity risk, credit risk, operation risk and market risk are taken as risk factors. SPSS version 27.0 software was used to analyze the data.

In the regression analysis, there is a 0.408 R-value. R square, a coefficient to determination, stood at 0.167, which reflects that about 16.7 % of the systematic variation on return on asset (ROA) can explained by predictors and the remaining is due to the effect of the other factors. The R square was discovered to be 0.159. that indicates that the model has been explained. The predictors account for 15.9% of the variance in the dependent variable (ROE). The coefficient of LDR and DTA is 0.022 and 0.140 respectively and the p-value is 0.386 and 0.307 respectively, representing there is a positive but not statistically significant impact on return on assets by LDR and DTA. The return on assets is negatively but not statistically significantly influenced by the NPLs, OER and INTR. The impact of the capital adequacy ratio on ROA is positive and insignificant with a slope 0.556 (P = 0.556> 0.05). The coefficient of LDR and DTA is 0.047 and 0.577 respectively and the p-value is 0.788 and 0.548 respectively, representing there is a positive but not statistically significant impact on return on assets by LDR and DTA. The NPLs have a negative coefficient i.e. -0.197 and the p-value is lower than the level of significance i.e. 0.05> 0.041. The OER, INTR and CAR have a negative coefficient i.e. -0.292, -1.182 and -0.545 respectively. This means that the return on assets is negatively but not statistically significantly influenced by the OER, INTR and CAR.

Keywords: *Risk factors, Return on assets, Return on Equity, Microfinance Institutions, Correlation coefficient, Risk management*

CHAPTER – I
INTRODUCTION

1.1 Background of the Study

Financial institutions are essential in gathering unused money from the general public and companies. This money is then wisely distributed to other economic sectors, increasing both the national and local income. Banks must make sure that their fund-raising and allocation operations are carried out effectively and efficiently if they are to reach ideal profitability levels. Lending is one of the main strategies used by financial institutions to increase their profitability. Although lending is a substantial revenue stream for microfinance, it also entails inherent risks that may result in financial difficulties. Customers not meeting their repayment commitments is a regular problem in lending activities, which leads to the buildup of bad loans. One of the biggest obstacles to microfinance organizations' day-to-day operations is managing liquidity, since most of the funds they manage come from the general public and are of a short-term nature. In this sense, a bank's liquidity is its capacity to rapidly fulfill its financial obligations when they come up. This guarantees that a microfinance company can quickly supply the required funds when needed, particularly for debt settlement (Ramadhanti et al., 2019).

Risk is the possibility of suffering a financial loss, or, to put it more properly, the variation between the expected and actual returns on an asset. Higher risk has been estimated the more variable the return is (Paudel et al., 2021). Consequently, risk is the possibility that an adverse occurrence will transpire. Risk is the result of uncertainty, and the amount of uncertainty relies on how variable the cash flows are. Most individuals see risk as the possibility of losing something, as was just mentioned.

An important factor in determining the financial sector's sustainability is risk and return analysis. The basic idea of risk and return is a guiding principle in corporate finance, impacting many contemporary theories and concepts and supporting important financial choices. Investors' perception of risk and their need for compensation can be used to characterize the relationship between risk and return. Unless investors are persuaded that they will be fairly compensated for the risks involved, they are reluctant to make investments in high-risk assets. Risk is an intrinsic feature of uncertainty and is defined as the probability that actual returns will differ from predicted returns.

Risk is an important consideration when making financial decisions since its level of uncertainty is a direct result of future cash flow fluctuation. Together, risk and return act as predictors of the possibility of a loss of investment value. Due to their interdependence, risk and return must always be taken into account when making investment decisions. Risk and return have a positive connection, which means that as risk rises, so does the possibility of bigger returns (Paudel et al., 2021).

In the course of their operations, microfinance firms bear a number of risks, including those related to credit, operations, interest rates, regulations, markets, liquidity, insolvency, and foreign exchange. Taking and managing risk is more important to microfinance institutions than avoiding it (Mendoza and Rivera, 2017). But of all the risks banks face, credit risk is regarded as the most important since credit accounts for a sizable portion of bank profits due to interest paid on credit (Almekhlafi, et al., 2016).

Credit risk is the possibility that a customer won't repay their loans or the whole amount they owe the bank on time and in full (Adekunle et al., 2015). The strict credit requirements of lenders are the primary factors that contribute to credit risk, according to the Basel Committee on Banking Supervision. Since credit products are the bank's primary asset, the type of loan that a bank offers to its customers is the criterion for evaluating the security and accuracy of the bank itself. Banks with poor credit ratings are particularly susceptible to bank insolvency.

It is commonly known that there is a trade-off between risk and return, with higher risk corresponding to higher rewards. The ultimate gauge of a bank's capacity to effectively manage its inherent risk is its profitability and ability to maximize firm value. A financial institution's exposure to risks and the demands placed on it by the financial market it serves, as well as management policy, all have a significant impact on the institution's success. The actual economy suffered as a result of the institutions' collapse during the most recent financial crisis, which occurred about ten years ago. As a result, financial instability needs to be addressed because it has been shown to have serious negative effects on the economy (Agnello & Sousa, 2012).

Total return is a popular return type that investors consider because it includes both capital appreciation and income. While capital gain is the increase in investment value over the initial cost, dividend yield is the return on invested capital represented as a

percentage of the purchase price. Fixed-income securities like bonds and savings accounts provide interest income. The state of the market, economic variables (including inflation, interest rates, and economic progress), and specific investment attributes (like volatility and risk profile) can all affect the returns on investments. Net returns may also be impacted by taxes, fees, and transaction charges. Gaining an understanding of these components is crucial for evaluating investment opportunities and managing portfolio effectiveness. The expansion of the economy as a whole depends on individual participation in the dynamic trade of assets. Prospective investors must be able to assess the risk and return of individual stocks as well as portfolios in order to be eligible for consideration for this proposal. This will increase their self-assurance, which will increase market efficiency and stock investments, both of which are critical for advancing the nation's economic development (Chaudhary, 2021).

The process of determining and assessing the potential loss liability that an organization may encounter, followed by the implementation of suitable measures to mitigate that liability, is known as risk management. Banking institutions have faced a number of risks as a result of the country's erratic and unpredictable environment, including interest rate risk, operation risk, foreign exchange risk, credit risk, and liquidity risk (Ali et al., 2018).

1.3 Problem Statement

Maturity mismatches in the timing of cash inflows and withdrawals cause unexpected liquidity needs for institutions and an abrupt inability to raise liquid money. Liquidity risk is also a result of the off-balance sheet activities carried out by lending and funding companies, since these activities are not limited to the balance sheet operations of banks. Globally, banks encountered severe liquidity issues both during and after the 2007–2008 financial crisis. A number of significant setbacks were documented during the bubble-forming pre-crisis period (2004–2006), including the mismatch between assets and liabilities, trading in derivatives, banks' inability to renew short-term obligations, and the collapse of Bear Sterns, which was partially caused by excessive leverage. The international crisis has not yet ended due to unregulated financial innovations, systemic risk neglect, and inappropriate management incentives. According to Ali's (2013) research, the global financial crisis and its subsequent recurrence in Asia have confirmed that a contagion liquidity issue in one financial institution can have a negative, systemic impact on other financial institutions worldwide.

From the outset, credit is taken to be the derivative of wealth maximization. While there are other elements that can impact profitability and wealth maximization, credit risk is thought to be the most influential. Since it is the foundation of commercial banking, it is the most difficult task. Effective credit management should therefore be given careful thought. Banks give credit to borrowers with the possibility of default; hence, while they do so with the expectation that borrowers will repay their debts, some borrowers do default, which reduces bank revenue because provisions must be made for the loans. Earnings will fluctuate when commercial banks are unsure of the percentage of their borrowers who may default, putting them at further danger of seeing their profits fluctuate (Bagale, 2023).

Operational risk is only some existing risks that regulators have tagged to increase their visibility and promote a culture of self-regulation in banking operations. It is not a brand-new danger (Hemrit & Arab, 2013; Power, 2003). After Barings Bank collapsed in 1995 and the 1998 Long-Term Capital Management (LTCM) crisis, which an investigation linked to operational risk management's failure, the idea of operational risk gained traction (Peter, Gordon & Yueran 2018; Siminyu, Clive & Musiega, 2017; Hussain & Shafi, 2014).

Prior to this period, operational risk was neglected and viewed as a mere residual risk, that is, part of other risks type that falls outside the purview of market risks and credit risks (Siminyu; Clive & Musiega, 2017; Power,2003). Following these events, Basel II recognized operational risk as a separate risk class different from credit and market risk (Abdullah, Farouk & Bassam, 2018). The hype by regulators and the eventual inclusion of Operational Risk in Basel II; as one of the risk types attracting regulatory capital, drove the wide acceptance and institutionalization of operational risks (ORX, 2018).

Market risk on the other hand often arises as a result of the movements in market variables such as interest rate, foreign exchange rate, equity and commodity risk leading to risk of losses in liquid portfolio. Market risk plays a prominent role as it influences the allocation of credits and mobilization of deposits. The level of interest rate intrinsically determines consumption level which consequentially affects economic growth due to the level of investment in a country. On one hand, the interest rate is perceived by banks as either the price of deposits or the cost of borrowing on the other hand. Among several

competing demands, the major functions performed by banks involve rationalizing limited available financial resources (credit).

The Basel Committee on Banking Supervision (2001) elucidates that the economic worth of banks, which is susceptible to fluctuations in interest rates, is a common issue shared by shareholders, management, and supervisors. This is so because fluctuations in market risk pose a serious risk to the financial stability of the institution. In particular, interest rate risk was a major factor in the US banking crisis of the 1990s, known as the "Savings and Loan Crisis," which was estimated to have cost $160 billion in total (Entrop et al., 2008). Therefore, it is crucial to have a good market risk management strategy.

In Nepal, major weaknesses in the increment of stock market efficiency are due to a lack of skills, knowledge, resources and technology that hinder the analysis of risk and return of individual and portfolio stock. More specifically, the research problems are as follows:

- What is the position of risk factors and the profitability of microfinance companies?
- What is the relationship between risk factors and the profitability of microfinance companies?
- How do risk factors affect the profitability of microfinance companies?

1.4 Objectives of the Study

The main objective of this study is to explore the influence of risk factors effect on the returns of selected financial institutions. The specific objectives of the study are as follows.

- To examine the existing position of risk factors and return of microfinance companies.
- To analyze the relationship between risk factors and the profitability of microfinance companies.
- To find out the impact of risk factors on the profitability of microfinance companies.

1.5 Rationale of the Study

The primary topic of this research is how risk factors affect the profitability of microfinance firms in Nepal, which is an important consideration when making

managerial choices. The majority of the company is focused on making the best use of its resources in order to maximize profit. The majority of the corporation wants to make more money while spending less money.

The concerned microfinance organizations' financial performance will improve as a result of this study. Students, instructors, researchers, and financial practitioners will all find this useful. Customers, stock dealers, financial agencies, shareholders, depositors, and debtors may all readily identify the better institutions to deal with thanks to this research.

- Policy planners and decision-makers in the banking and other financial sectors can benefit from this research.
- This study is useful for future research and reference purposes.
- This study offers an overall background of the Nepalese financial sector and NRB regulation on microfinance companies for microfinance companies to mitigate risk.
- It analyzes how the companies are complying with various policies and legislations regulating the financial sector.
- Customers aided by this study to know best who should keep their money for them in terms of companies offering the best customer series satisfaction.
- It helps the management of various banks to know where they fall behind and where they are doing better.

1.6 Limitations of the Study

This study has the following limitations.

- This study focuses on risk and return analysis of microfinance companies in Nepal.
- This study covers ten years of data starting from 2013/2014 to 2022/2023.
- This study has been based mainly on secondary data.
- The study is only concerned with risk factors and return analysis of sample microfinance companies.
- Among the 64 microfinance companies operating in Nepal the study is only concerned with five microfinance companies.

CHAPTER - II
REVIEW OF LITERATURE

This chapter summarizes the work done in analyzing and evaluating a few relevant books and articles that have appeared in various economic bulletins, journals, websites, magazines, newspapers, and dissertation papers. In-depth examination of the conceptual framework, a survey of literature, journals, and other studies about the risk and return analysis of microfinance firms are included in this chapter. Three categories of reviews of literature can be used to study them: theoretical, conceptual, and empirical.

2.1 Conceptual Review

A conceptual review is a critical analysis and synthesis of the body of knowledge regarding a particular concept or idea, with the goal of offering a thorough grasp of its historical development, essential elements, and theoretical foundations. This kind of review focuses on examining the conceptual frameworks, definitions, and discussions surrounding the selected concept rather than just reporting empirical studies. It frequently assists researchers in defining their research topics, finding gaps in the literature, and creating a strong theoretical framework for their work (Rocco and Plakhotnik, 2009). Terms, functions, and distinctions related to literature reviews, conceptual frameworks, and theoretical frameworks.

2.1.1 Risk

Simply said, risk is an uncertainty. For the average investor, risk and uncertainty are inevitable aspects of life. Their meanings are distinct in theory. To put it simply, risk in investments is the possibility of an unfavourable event occurring or the risk of losing money. Risk implies that a decision-maker is aware of the potential outcomes of his choices and their respective livelihoods at the time of the decision. Anything that has the potential to obstruct the accomplishment of specific goals is considered risky. The reason for this could stem from either external or internal sources, depending on the kind of danger present in the specific scenario. When that risk is there, a situation may become more urgent. Identifying risks that could lead to unfavourable consequences and taking proactive steps to mitigate them are preferable approaches to handling such circumstances. To put it plainly, anticipating risk and taking proactive measures to manage it is preferable to waiting for it to happen (Safiq and Nasr, 2010).

Risk exists as a part of an environment in which various organizations operate (Tchankova, 2002). Because of its extensive exposure to uncertainty and weighty issues, banking is an industry that is typically associated with risk. One of the most crucial strategies to employ, particularly in banks, is risk management in order to obtain confidence regarding the dependability of the processes and practices being carried out. All banks are susceptible to a wide range of risks in the fast-paced world of today, including market, credit, liquidity, foreign exchange, and interest rate risk. These risks have the potential to represent a danger to a bank's continued existence and prosperity (Al-Tamimi and Al-Mazrooei, 2007).

Because of this exposure to a variety of dangers, effective risk management is necessary. Once risk has been recognized and identified, one of the most important things to do is manage it. Since there is a direct correlation between risk and return, raising one will inevitably raise the other, and vice versa. Additionally, prudent risk management results in a more balanced trade-off between reward and risk, improving position down the road (Fatemi and Fooladi, 2006).

Recently, it has also been understood that risk management in the financial industry is fundamentally more important than in any other area of the economy. Knowing that financial institutions' primary goal is to maximize profits and provide the greatest value to their shareholders by providing them with a range of financial services—particularly through risk administration—makes more sense (Al-Tamimi and Al-Mazrooei, 2007).

Adopting risk management techniques is mostly done to prevent future failures that are likely to occur. However, risk management is not a free endeavor in the real world. In terms of resources and institutional upheaval, it is costly. On the other hand, postponing or eschewing appropriate risk management may come at a high cost and result in unfavorable outcomes, such as bank failure and perhaps financial system failure (Meyer, 2000).

- **Liquidity Risk**

Liquidity risk is the possibility that banks won't be able to pay their debts from cash flow funding sources or from highly liquid assets that can be mortgaged without negatively impacting the bank's operations and financial health, as shown by the loan-to-deposit ratio (Badawi, 2017). Depending on how liquidity is defined, there are two different

approaches to liquidity management. The ability to trade assets at current prices, such stocks or bonds, is one kind of liquidity.

Financial institutions and other major enterprises fall under several definitions of liquidity. Liquidity, or a bank's capacity to meet financial commitments and guarantees without suffering significant losses, is a key factor in evaluating banks. A decline in asset profitability is correlated with increased liquidity risk. The absence of this capability will lower revenue from loan-based businesses because many bank operations are predicated on the ability to liquidate assets when necessary. Consequently, lower interest margins are a direct result of lower interest income from loans, which has a detrimental effect on banks' capacity. In addition, liquidity problems might cause a lack of customer confidence especially if withdrawal requests cannot be fulfilled (Al-Rdaydeh et al., 2017).

The ability of a bank to raise capital to meet its short-term needs without incurring undue losses is known as liquidity. A rise in liquidity risk could result from the bank's inability to provide liquidity due to a mismatch between the resource and the maturity of the liability, or from an unanticipated event that happens during that time (Maaka, 2013). In the history of Banking Theory, the fundamental function of banks has not changed. The management of risk, capital, and liabilities continues to be the core focus of the banking industry. Variations in liquidity risk can provide an early signal of a significant drop. Consequently, banks need to keep the positive amount of their loans as vital funds in an account with the reserve bank that is essentially used to collectively satisfy inter-bank obligations as lender security (Edem, 2017).

In the banking industry, high liquidity risk exists when clients unnecessarily withdraw cash from the banks. This affects the possibilities of banking success antagonistically by putting back consumers and bank-manageable purchasers. As a result, the operation of banks decreases dramatically and results in a vital income reduction (Ejoh et al., 2014). Loan Deposit ratio (LTDR) measures a bank’s ability to convert deposits into loans, a higher ratio suggests that the bank can manage with a low level of cash and tradeable investments (Murthy, 2004) and vice versa. Liquidity risk arises from maturity mismatches where liabilities have a shorter tenor than assets. A sudden rise in the demand of borrowers above the expected level can lead to a shortage of cash or liquid marketable assets (Oldfield and Santomero, 1997). The liquidity crisis in a banking institution could

lead to insolvency and bank runs. As a result, minimising the liquidity risk is one of the most important aspects of asset and liability management of banks

- **Credit Risk**

Credit risk is the possibility that the debtor or other parties won't fulfill their financial obligations to the bank. The chance that the borrower may default on the loan is known as credit risk. Failure in this sense is commonly understood to mean that the borrower has not complied with the conditions of his contractual obligations to the lender. According to Ejoh et al. (2014), credit risk poses a severe danger to bank performance and, if ignored, could lead to the bank's complete collapse.

Credit risk is considered to be the most critical risk because large sums of bank earnings come from credit as a result of interest paid on credit (Almekhlafi, et al., 2016). Credit risk is a risk resulting from the consumer's failure to pay back their loans or the money they owe to the bank on time and in full (Adekunle et al., 2015). In 2015, the South African Reserve Bank (SARB) stated that commercial banks that are not able to maintain their capital adequacy ratio will close down or merge with other banks. This policy has helped banks in the supervision of credit risk (SARB report, 2015).

Credit risk can be characterized as an obligation arising from the clients' failure to pay their debts or the amounts they were supposed to pay the bank on schedule and in full. Credit risk is the possibility that a customer won't repay their loans or the money they lent the bank on schedule and in full (Adekunle et al., 2015). But of all the hazards banks face, credit risk is thought to be the most significant because credit generates enormous profits for banks due to interest paid on loan (Almekhlafi, et al., 2016).

(Kolapo et al., 2012) also claimed that the key factors contributing to credit risk are bad management, ineffective loan policy, interest rate volatility, weak capital and liquidity rates, insufficient credit appraisal, improper lending procedures, bad lending underwriting, government intervention, and ineffective central bank regulation.

- **Operation Risk**

It is impossible to overstate the significance of operational risk management. Unpredictable financial performance can be caused by inadequate operational risk management. In addition, it can have a detrimental effect on bank profits and reduce bank net worth. But above all, it can have disastrous systemic effects, as was indicated in the role that operational risk had in the 2008 financial crisis (Muriithi and Waweru, 2017).

Effective operational risk management will lead to lower capital charges, improved decision-making, improved customer and staff satisfaction and improved regulatory compliance (Accenture, 2015). Effective management of operational risks will also assist in reducing operational losses, reduce compliance and audit costs, prompt identification of illegal activities and reduce exposure to future risks (Habib et al., 2014).

Operational risk is the risk caused by the malfunctioning of the bank's internal processes, human errors, technological system failures, or due to external problems that affect bank operations (Syafi'i and Rusliati, 2016). The banking industry is an industry that experiences a variety of risks in carrying out its operations. Operational risk is different from other types of risk because it is not directly related to efforts to produce a return.

Effective operational risk management will also help banks to identify all the risks that they are exposed to, including those that they do not have the expertise or experience to manage, thereby helping them to put frameworks in place to reduce such risks and the associated impact if it crystallizes which in turn makes them less vulnerable to systemic problems (Barbu et al., 2008).

- **Market Risk**

Market risks being the subject of this study is however, the risk of an entity resulting from movements in market prices which consists of changes in interest rates, foreign exchange rates, equity and commodity prices (Muriithi et al., 2016). The degree of deepness of market risk as it affects the performance of business organizations threw up a rhetorical question on how the risk operates. The risk can trigger losses quickly in volatile market conditions.

The chance that a company would experience losses due to a shift in the value of its assets as a result of fluctuations in interest rates, stock prices, commodity prices, foreign exchange rates, and other market risk factors is known as market risk. According to

(Ekinci, 2016), market risk, which includes interest rate, foreign exchange, equity, and commodity price risks, is the possibility of losses in a liquid portfolio resulting from changes in market prices. According to (Ekinci, 2016) and (Namesake, 2016), exposure to market risk is more erratic than exposure to credit risk due to the quick fluctuations in market circumstances that have the potential to create catastrophic financial losses and even collapse.

- **Capital Adequacy Ratio**

Bank capital adequacy refers to the minimum amount of capital that a bank must possess, as mandated by banking rules that set forth guidelines for managing capital. According to (Taswan, 2010), capital is a crucial component for a bank's commercial development and ability to absorb loss risk. The assets in the portfolio determine the amount of capital sufficiency. The capital adequacy ratio decreases with increasing investment in high-risk assets (assuming no proportional capital augmentation). Technically speaking, a specific percentage of risk-weighted assets is used to calculate the minimum capital adequacy and capital adequacy obligation.

A bank's health is indicated by its capital adequacy ratio, which rises with it (Taswan, 2010). The Bank has enough capital to meet its needs and take on the risks involved, including credit risk, if its capital adequacy is higher. Because they can make the most money possible from their core operations, banks with good capital adequacy are able to route more loans. in order for the bank's profitability to rise as a result of efficient capital management. (Akhavein, et al., 1997) verified that bank size and profitability had a positive correlation. According to Reynolds and Ratanakomut (2000), capital adequacy declines with bank size; large banks have lower capital adequacy ratios than small banks, and capital adequacy and profitability are positively correlated.

2.1.2 Return

A bank's performance, which may be examined via the financial statements the bank provides, can reveal how healthy the bank is. It is clear from these financial statements whether the bank can manage its current funding sources to generate the most profit while still operating at a high degree of efficiency. High profitability indicates a promising future for the business, which is why banks need to maintain enough extra reserves to prevent fund withdrawals from interfering with other postings on their balance sheet. But

since the deposits kept in the safe don't yield returns, having large reserves will actually lower bank earnings (Ramadhanti et al., 2019).

An investor is willing to forgo his current lifestyle in exchange for a potential gain or reward in the future. Thus, the return serves as the driving force behind investment. The difference between an investor's beginning wealth (what they invested) and terminal wealth (what they received) is known as the return. Investors' invested money may rise, fall, or stay the same in the future. There is a good return on investment if the terminal wealth exceeds the starting wealth. There is a negative return on investment if the terminal wealth is lower than the starting wealth. There is no return if the terminal wealth is the same as the starting wealth. All other things being equal, the investor's constant goal is larger returns (Sharma et al., 2018).

- **Return on Assets**

The ratio of a bank's assets to its profits is what determines its profitability; as public savings make up the majority of its assets, Return on Assets (ROA) is a more accurate indicator of a bank's profitability (Pratiwi and Wiagustini, 2015). ROA gauges a bank's capacity to make money off of its holdings. According to Capriani and Dana (2016), a company's or bank's performance improves with increasing ROA because it increases profitability.

A financial indicator called return on assets (ROA) is used to assess an organization's or company's profitability and efficiency. It evaluates a business's capacity to turn a profit on all of its assets. The ROA formula, which is commonly represented as a percentage, is computed by dividing net income by the average total assets. A higher return on assets (ROA) is a sign of improved resource and operational efficiency, and it shows how well a company is leveraging its assets to generate profits. Investors and stakeholders can evaluate the management's capacity to produce returns on their investments in the company by using ROA, which is a useful measure for evaluating the financial performance of businesses in the same industry or over time (Sharma et al., 2018).

- **Return on Equity**

The ratio of net income to total equity capital, or return on equity (ROE), represents the return to shareholders on their equity. It assesses how effectively management is turning a profit with the capital contributed by shareholders (Athanasoglou et al., 2008). One of the most crucial metrics for assessing the effectiveness and financial success of a bank's

management, depending on the equity that shareholders have invested in the institution, is return on equity (ROE). The proportion of common equity to net income. It calculates the rate of return on investment for common stockholders. The goal of management is to maximize shareholder returns on their investment in the company. According to Sharma et al. (2018), return on equity is the most effective way to assess a company's performance in achieving its objective.

2.1.3 Relationship between Risk and Return

In the world of finance, it is assumed that people make decisions based on their expectations and that their estimation of the likelihood that an event will occur would closely match their expectations. These two aspects of decision-making are known as expected return and risk when assessing possible financial asset investments. The predicted degree of related risk and the projected return are correlated. The nature of the connection is that the expected return rises in proportion to the predicted risk. Additionally, the reverse is true. Expected returns are inversely correlated with expected risk levels. It is said that there is a direct and positive relationship between this risk and return. This risk-return relationship is characterized as being a direct relationship or a positive relationship (Sharma et al., 2018).

Investor perception of risk and their need for compensation characterize the link between risk and return. A higher rate of return should be attributed to investors who are able to bear a greater degree of risk. The majority of empirical research on the historical risk-return relationship supports this claim. Investors prefer to avoid risky securities unless they are certain they will receive a sufficient return on their investment. Thus, the relationship between risk and return is established by the required risk premium paid by investors. greater risk will demand greater premiums in a market controlled by rational investors; the trade-off between the two is predicated on the assumption that risk and risk premium have a linear relationship. The observed differences in both the levels and variability of the rates of return across securities are indicative of the underlying risk-return relation in the market (Weston & Brigham; 1982).

In general, risk and rate of return have a positive correlation. It suggests that choosing dominant assets with higher risk can typically yield higher returns for an investor. But the saying that a riskier asset will pay off isn't always accurate. More average rate of return is typically the case. The cause is the risk aversion of investors. High-risk assets therefore

provide investors with large returns in order to entice them to undertake this riskier investment. Investors will naturally want lower risk and higher returns. It implies that when there are readily available investments offering higher returns in the same degree of risk class, investors won't select one that promises a lower return (Paudel et al., 2021).

2.2 Theoretical Review

2.2.1 Capital Asset Pricing Model (CAPM)

The basis of the CAPM model is the idea that, for every given stock, the needed rate of return is equal to the sum of its risk premium and the risk-free rate of return, with beta coefficient serving as the proxy for risk. According to the CAPM relationship, an asset's expected rate of return is a linear function of its systemic risk. The systematic risk that investors expect to receive is traded off against those returns in the CAPM. The behavior of security prices is explained by the CAPM. It goes on to describe how hazardous financial asset prices and interest rates are set in the capital market. CAPM combines the principles of portfolio theory with certain assumptions regarding investors' expectations and market characteristics *(Francis 1997).*

Assumptions for CAPM

- Individuals are risk averse.
- Individuals can borrow and lend free at a risk-free rate of interest.
- Individuals have homogenous expectations regarding risk and returns of securities.
- The market is perfect and competitive.
- There are no transaction costs and taxes.
- Securities are divisible.

The CAPM equation is written as follows;

$\sum(Rj) = Rf + (Rm - Rf)\beta j$

Where,

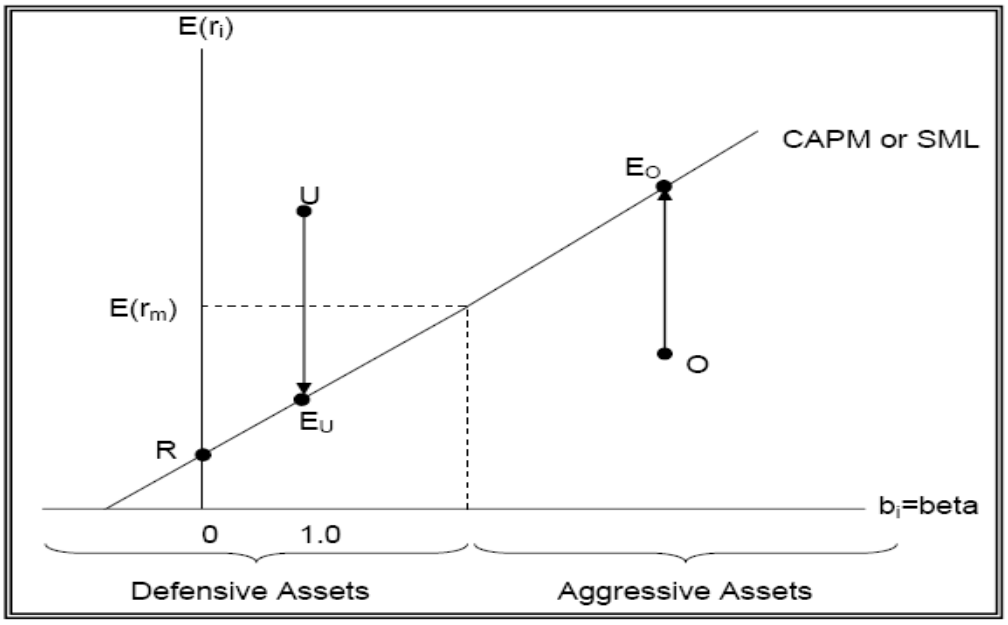
$\sum(Rj)$ = Expected return on assets

Rf = Risk-free rate of return

Rm = Market return

Bj = Coefficient of Beta

Figure: 1 Capital Assets Pricing Model



(Source: Francis, 1997)

In the figure, a vertical line represents a systematic risk risk class. With the CAPM, every systematic risk has an expected return associated with it. These predicted returns can be understood as the cost of capital, as the proper discount rates, or as the equilibrium rate of return that investors anticipate given that level of systematic risk. U and O are not in equilibrium on the CAPM in the illustration. Owning Asset U is appealing since it is undervalued. As more investors buy U, its market value will increase. Asset U's return decreases as its price rises. Equilibrium is reached when U's return approaches the return that is compatible with its beta on the SML. O is an overpriced asset. O's price will be under pressure to decline as a result of attempts by investors to sell O. The downward pressure on prices will stop when the return on asset O reaches equilibrium, which is compatible with the beta risk level indicated by the SML. Thus, the connection known as the CAPM or SML is one in which each asset's expected rate of return is a linear function of its systematic risk, symbolically represented by beta (β). The higher the beta of an investment, the higher the risk and the higher the projected return needed, per Sharpe & Litner's (CAPM) study. The risk will decrease as the beta decreases *(Francis, 1997).*

2.2.2 Markowitz Portfolio Optimization Model

Harry Markowitz created the 1952 Markowitz Portfolio Optimization Model, a key idea in contemporary finance that completely changed how investors construct portfolios. This

concept is predicated on the notion that risk management is just as important to investors as maximizing returns. It offers a methodical way to build portfolios with the goal of maximizing return for a certain amount of risk or, on the other hand, minimizing risk for a desired return.

The approach begins by evaluating each individual asset or investment's projected returns and standard deviations, which serve as a gauge of risk. It then examines the possible combinations of these assets in a portfolio to maximize total portfolio risk and reach the targeted rate of return. Through diversification across low- or negative-correlated assets, investors can possibly lower risk without compromising returns, as the Markowitz model illustrates. Investors can find the ideal asset mix that offers the best risk-return trade-off for their investing goals by using the efficient frontier, a graphical representation of all conceivable risk-return combinations.

Modern portfolio theory has been greatly influenced by the Markowitz Portfolio Optimization Model, which highlights the value of risk management, diversification, and striking a balance between return and risk while building investment portfolios. It offers a strict structure that enables financial experts and investors to allocate resources and manage their investments with greater knowledge.

Figure 2 Portfolio Opportunity Set and Efficient Set with risky assets

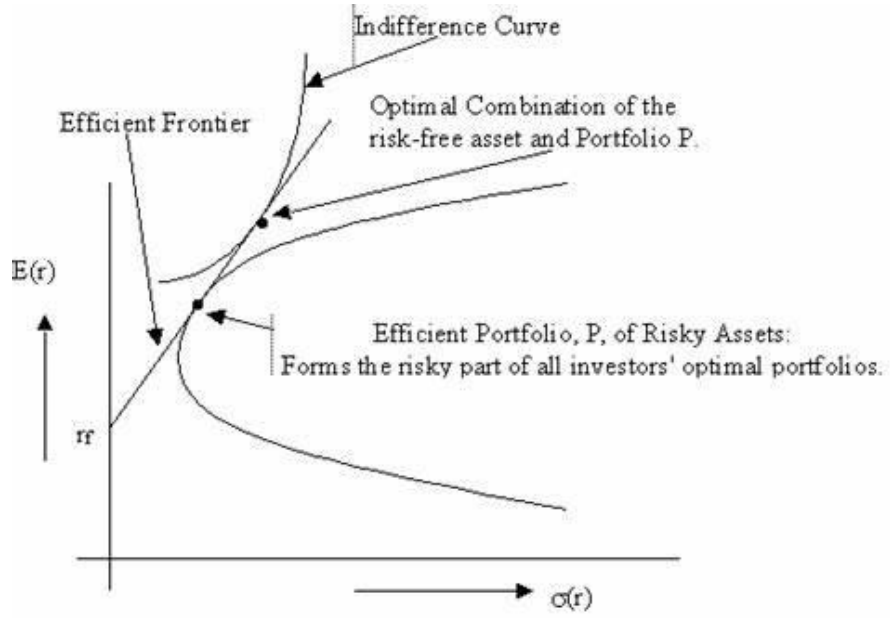


Figure: Optimal Portfolio Selection with Many Risky Assets and a Risk-free Asset

(Sources: webpage.pace.edu)

2.2.3 Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) is a fundamental hypothesis in finance that posits asset prices accurately reflect all available information and that financial markets are efficient. Developed by economist Eugene F. Fama in the 1960s, the Efficient Market Hypothesis (EMH) holds that historical prices and other publicly available information are already factored into stock prices, making it difficult to continuously obtain higher returns than the general market.

EMH comes in three forms:

- **Weak Form Efficiency:** According to this, all prior trading data, including volume and stock prices, is already represented in the prices of stocks today. As a result, using technical analysis or examining historical price trends to forecast future prices will not be beneficial.
- **Semi-Strong Form Efficiency**: This form asserts that stock prices already take into account all publicly available information, such as news and financial statements, in addition to historical trading data. Consequently, abnormal returns should not be routinely generated by either basic analysis or insider information.
- **Strong Form Efficiency:** Efficient market hypothesis (EMH) holds that stock prices accurately represent all available information, including insider information. Even with insider knowledge, no investor should be able to outperform the market under strong-form efficiency.

The EMH has important ramifications. Since aggressive stock selection and market timing are unlikely to outperform the market on a consistent basis if markets are genuinely efficient, many investors will likely turn to passive investment strategies like index funds. Critics of the Efficient Market Hypothesis (EMH) contend that market frictions, information asymmetry, and behavioral biases cause markets to be less than fully efficient (Fama, 1970).

2.2.4 Behavioral Finance

The study of how psychological and emotional aspects affect financial decisions and market outcomes is known as behavioral finance. In contrast to conventional finance theories, which frequently presuppose that people are rational and only consider utility when making decisions, behavioral finance acknowledges that human behavior can be

influenced by heuristics, emotions, and cognitive biases, which can result in irrational and occasionally suboptimal financial decisions.

One of the main takeaways from behavioural finance is that people frequently display a variety of cognitive biases that influence their financial choices. For instance, availability bias causes people to prioritize information that is current and easily obtainable when making decisions, which can lead to asset price bubbles and herd mentality. Loss aversion is another prevalent bias in which people hang onto lost assets and sell winning ones too soon because they experience the agony of losses more intensely than the joy of winnings.

In addition, behavioral finance investigates market irregularities that conventional finance models find difficult to account for. Examples of such behavioural characteristics that have been proposed as explanations include investor sentiment and response to news. The "January effect" and the "value premium" are two examples of phenomena where specific companies or asset classes routinely beat market expectations.

Since it offers a more thorough understanding of financial markets and explains why asset prices may diverge from their inherent values and why market volatility might happen, this field has grown in popularity in recent years. In order to better traverse the intricacies of financial markets, investors, financial professionals, and policymakers have come to understand the significance of incorporating behavioral insights into decision-making processes (Kahneman and Tversky, 1979).

2.3 Empirical Review

Mwasile and Haabazoka (2024) conducted research on a comparative study of the impact of COVID-19 on the liquidity of selected microfinance institutions in Zambia. The main objective of the study was to conduct a comparative analysis of the impact of the COVID-19 pandemic on the liquidity of Agora Microfinance in Zambia. The researcher used Wilcoxon statistical tool to analyze the data. It was found that the lockdowns imposed to contain the spread of the COVID-19 virus had less impact on the liquidity of the two microfinance institutions from an economic and financial perspective. The results of this research will have implications for the policies of companies and financial institutions.

Bagale (2023) conducted research entitled Credit Risk Management and Profitability of Commercial Banks in Nepal. The main objective of the study was the impact of credit risk on the profitability of commercial banks in Nepal. The researcher used a pooled regression analysis model (OLS) to analyze the data. The findings indicated that credit risk has a significant impact on the profitability of commercial banks in Nepal. The study revealed that bank size and liquidity ratio have a positive impact on return on equity.

Kosasia and Njeru (2023) conducted a research on the relationship between credit risk and profitability of microfinance institutions in Kenya. The main objective of the study was to examine the relationship between credit risk and the financial performance of MFIs in Kenya. The researcher used descriptive and inferential statistical tools to analyze the data. Based on the findings, it appears that MFIs incurred losses, as their assets and equity were not fully utilized. A correlation coefficient of 0.811 indicates that Capital Adequacy and Operational Efficiency have a high positive association, which was another finding of the study. Operational Efficiency rises in tandem with Capital Adequacy; this strong association was demonstrated by the highly substantial correlation. That being said, a correlation coefficient of 0.961 indicates a strong positive association between capital adequacy and profitability metrics. With a correlation coefficient of 0.875, it was shown that operational efficiency and profitability metrics had a very good association. With a correlation coefficient of 0.943, the association between Interest Rate Spread and Profitability Metrics is strongly positive.

Annannab et al. (2022) conducted a research on operational management performance in cooperative microfinance Thailand. The main objective of the study was to examine the operational risk management (ORM) impact on cooperative microfinance performance. The researcher used structural equation modelling (SEM) to analyze the data. The outcome showed that performance in cooperative microfinance is highly impacted. The association between ORM and the performance of cooperative microfinance is here moderated by expertise.

Dunvoh et al. (2022) conducted research on the impact of credit risk on financial performance evidence from rural and community banks in Ghana. The main objective of the study was to examine the impact of credit risk on the financial performance of rural and community banks in Ghana. The data was analyzed by the researcher using regression, correlation analysis, and descriptive statistics. The results indicated a negative

correlation between the two credit risk indicators and financial performance metrics. The study comes to the conclusion that credit risk threatens the financial performance of rural and community banks, that credit risk is growing over time, and that credit risk may eventually jeopardize the financial performance of these institutions.

Hameed and Ghafoor (2022) conducted research on the determinants of liquidity risk management in microfinance institutions. The main purpose of the study was to examine the factors affecting liquidity risk management practices. Correlation and regression analysis were used in this study to analyze the data. The study's findings showed that MFIs' ability to manage liquidity risk is greatly impacted by internal control, institution policies, institution board management, and risk monitoring techniques. The MFIs have an effective internal control system, and the management should receive excellent board strategies. In MFIs, the analysis, management, and oversight of the liquidity risk are adequate.

Kaharuddin and Yusuf (2022) conducted a research on the topic of the impact of liquidity risk optimization on the stability of Islamic commercial banks in Indonesia. The main objective of the study was to the effect of liquidity risk on bank stability with credit risk and operational efficiency as intervening variables for Islamic Commercial Banks in Indonesia. To determine the study's outcome, the following tests were used: multiple regression analysis, autocorrelation analysis, heteroscedasticity analysis, multicollinearity analysis, and normality test. The study's findings show that while credit risk and operational efficiency factors also play a role in moderating the relationship between liquidity risk and bank stability, liquidity risk can have a direct impact on bank stability. Meanwhile, the bank's operating efficiency is not immediately impacted by liquidity risk.

Yeasin (2022) examined a journal entitled Impact of Credit Risk Management on Financial Performance: A Study of Commercial Banks in Bangladesh. The main purpose of the study was to analyze the impact of credit risk management on the financial performance of commercial banks. The researcher used panel regression to analyze the data. The researcher found that credit risk is negatively affecting the financial performance of commercial banks.

Orichom and Omeke (2021) conducted research on capital structure, credit risk management and financial performance of microfinance institutions in Uganda. The main

purpose of the study was to examine the relationship between capital structure, credit risk management and financial performance of microfinance institutions (MFIs). The data were analyzed using regression analysis and correlation. The findings showed that good financial performance is greatly influenced by credit risk management. Second, there is no discernible link between capital structure and financial performance. Therefore, attaining sound financial performance for MFIs requires credit risk assessment, monitoring, and mitigation.

Siddique et al. (2021) investigated the effect of credit risk management and bank-specific factors on the financial performance of South Asian commercial banks. The main purpose of the study was to capture the effect of credit risk management and bank-specific factors on South Asian commercial banks' financial performance (FP). The data was analyzed by the researcher using the generalized method of moment (GMM). The findings showed that whereas CAR and ALR had a considerably favorable relationship with the FP of the Asian commercial banks, NPLs, CER, and LR had a significantly negative relationship with FP (ROA and ROE).

Siddique et al., (2021) conducted a journal entitled The Effect of Credit Risk Management and banks specific factors on the financial performance of South Asian commercial banks. The main objective of the study was to capture the effect of credit risk management and bank-specific factors on South Asian commercial banks' financial performance (FP). The analysis of the study data was done using the generalized method of moment (GMM). The findings showed that whereas CAR and ALR had a considerably favorable relationship with the FP of the Asian commercial banks, NPLs, CER, and LR had a significantly negative relationship with FP (ROA and ROE).

Afolabi et al. (2020) conducted research on credit risk and financial performance evidence from microfinance banks in Nigeria. The main objective of the study was to examine the effect of credit risk on the financial performance of microfinance banks in Nigeria. The data in this study were analyzed using panel regression least squares (OLS) regression techniques. The analysis's findings showed that while loan-loss provisions have a negative but negligible impact on returns on assets, non-performing loans have a considerable and negative impact. Additional findings revealed a noteworthy and affirmative correlation between returns on assets and total loans and advances, which were included as a control variable.

Cheng et al., (2020) examined the credit risk, operational risk, and liquidity risk on profitability: A study on South African commercial banks. A PLS – SEM Analysis. The main objective of the study was to explore the influence of credit risk, operational risk and liquidity risk effect on bank profitability. The study employed a partial least square structural equation model for data analysis. The study's findings showed a strong positive correlation between credit risk and bank profitability. Liquidity risk has also demonstrated a strong and positive correlation with bank profitability. Operational risk, however, suggested a bad relationship with bank profitability. There was a strong and positive correlation between the bank-specific risk and the operational, credit, and liquidity risks. The relationship to profitability was negligible.

Fadun and Oye (2020) conducted a research on the impact of operational risk management on financial performance: A case of commercial banks in Nigeria. The main purpose of the study was to analyze the impact of operational risk management practices on the financial performance of commercial banks in Nigeria. A linear multiple regression was used in this study to analyze the data. The result showed that there is a positive relationship between operational risk management and the financial performance of banks.

Giri (2020) conducted a study entitled risk and return analysis of the common stock of five listed commercial banks. The major objective of the study was to calculate and analyze the risk and return of the banking sector. The major findings of his study were; Regarding the market capitalization of selected companies, SCBL has the maximum market capitalization and NBBL has the minimum market capitalization.

Odubuasi et al., (2020) conducted a research on the effect of market risks on the financial performance of firms in Nigeria. The main objective of the study was to investigate one of the components of risks (market risk) and ascertain how the risks affect the activities of firms in Nigeria. The data was analyzed by the researcher using multiple regression, correlation analysis, and descriptive statistics. The findings showed that the ROA and ROE of oil and gas companies are significantly impacted by the exchange rate. Furthermore, the interest rate affects ROE and ROA significantly and insignificantly, respectively. Further findings indicate that changes in share prices have no appreciable impact on the return on assets (ROA) or return on equity (ROE) of companies operating

in Nigeria's oil and gas industry. Similarly, changes in commodity prices have no appreciable impact on either measure.

Paul and Musiega (2020) conducted research on the effect of credit risk management practices on the financial performance of microfinance institutions in Nairobi. The objective of the study was to assess the effect of credit risk management practices on the financial performance of microfinance institutions. The data in this investigation were analyzed using both descriptive and inferential statistics. The study's conclusions led to the realization that the financial performance of Kenya's microfinance banks was significantly influenced by a number of credit risk management practices, including credit risk grading, credit risk control, viability identification, and credit reminders.

Suryaningsih and Sudirman (2020) conducted a journal entitled The Influence of Credit Risk, Liquidity Risk and Operational Risk on Profitability in Rural Banks in Bali Province. The main purpose of the study was to determine the effect of credit risk, liquidity risk and operational risk on profitability at Rural credit banks in the province of Bali. In this study, data analysis was done using multiple linear regression. The outcome demonstrated that operational and credit risk had a detrimental impact on profitability. The study's findings on liquidity risk have a favorable impact on profitability.

Ebenezer et al., (2019) researched the effects of liquidity risk and interest rate risk on profitability and firm value among banks in ASEAN – 5 countries. The main objective of this study was to explore the issues relating to liquidity risk and interest rate risk, recognizing that existing studies are mostly vague in emerging and developing markets. The data was analyzed by the researcher using panel unit root tests and descriptive statistics. The study's findings demonstrated that, for ASEAN banks, GDP and inflation have a positive significant impact on return on assets, while interest rate risk and bank size have a significant negative impact. The loan-to-deposit ratio, on the other hand, has a positive significant impact.

Madhuwanthi and Morawakage (2019) conducted a research on the impact of liquidity risk on the performances of Sri Lankan commercial banks. The main objective of the study was to investigate the impact of liquidity risk on the performance of commercial banks in Sri Lanka. To evaluate the data, the researcher employed fixed effect models, random effect models, and descriptive statistics. Researchers discovered that the non-

performing loan ratio and the liquidity gap are important indicators of liquidity risk. Liquidity risk has a negative and significant impact on the bottom lines of commercial banks' Return on Average Assets (ROAA) and Return on Average Equity (ROAE), while having a favorable impact on their top line, Net Interest Margin (NIM), according to multiple regression research.

Josphat and Joseph (2018) conducted research on the effect of financial risk on the financial performance of microfinance institutions in Kenya. The main purpose of the study was to establish the effect of financial risk on the financial performance of microfinance institutions. The data was analyzed by the researcher using regression and correlation analysis. According to the study, microfinance companies should evaluate their credit rating guidelines to boost productivity and lower the percentage of non-performing loans. Furthermore, in order to improve their liquidity position, microfinance institutions ought to keep a healthy stock of current assets that will enable them to pay off their short-term debts as they become due.

Nabi et al. (2018) investigated microfinance institutions in Bangladesh: the effect of credit risk management on credit performance. The main purpose of the study was to investigate the effects of credit risk management on the credit performance of microfinance institutions. To evaluate the data, the researcher employed regression analysis, correlation analysis, testing of hypotheses, and descriptive statistics. The study found that while credit terms and the credit appraisal process have positive but insignificant effects on the credit performance of microfinance institutions, credit policy, credit risk control, credit collection procedures, and institutional factors all have positive effects on credit performance and are statistically significant at the 5%, 10%, 1%, and 1% levels, respectively.

Ramadhanti et al., (2018) investigated the title of the effect capital adequacy, liquidity and credit risk on profitability of commercial banks. The main objective of the study was to determine the effect of Capital Adequacy peroxide with Capital Adequacy Ratio (CAR), Liquidity peroxided by Loan to Deposit Ratio (LDR), and Credit Risk peroxided by Non-Performing Loans (NPL) toward Profitability peroxide by Return on Asset (ROA). The gathered data was analysed using the panel data regression analysis approach. The study's conclusions demonstrated that: (1) capital adequacy (CAR)

significantly increases profitability (ROA); (2) liquidity (LDR) significantly increases profitability (ROA); and (3) credit risk (NPL) significantly decreases profitability (ROA).

Table

Meta table of risk and return analysis of microfinance companies in Nepal

Sources	Topic	Objectives	Methodology	Findings
Mwasile and Haabazoka, 2024	A comparative study of the impact of COVID-19 on the liquidity of selected microfinance institutions in Zambia	To conduct a comparative analysis of the impact of the COVID-19 pandemic on the liquidity of Agora Microfinance Zambia	Wilcoxon Statistical Tool	It was found that the lockdowns imposed to contain the spread of the COVID-19 virus had less impact on the liquidity of the two microfinance institutions from an economic and financial perspective. The results of this research will have implications for the policies of companies and financial institutions.
Bagale (2023)	Credit risk management and profitability of commercial banks in Nepal	Impact of credit risk on the profitability of commercial banks in Nepal	Pooled regression analysis model (OLS)	The findings indicate that credit risk has a significant impact on the profitability of commercial banks in Nepal. The study reveals that bank size and liquidity ratio have a positive impact on return on equity.

Kosasia and Njeru, 2023	Relationship between Credit risk and profitability of Microfinance Institutions in Kenya	To examine the relationship between credit risk and the financial performance of MFIs in Kenya	Descriptive and Inferential Statistical Tools	Based on the findings, it appears that MFIs incurred losses, as their assets and equity were not fully utilized. The study also discovered a strong positive relationship between Capital Adequacy and Operational Efficiency, as indicated by a correlation coefficient of 0.811. When Capital Adequacy increases, Operational Efficiency also increases, The correlation was highly significant, indicating a robust relationship. However, it is worth noting that there is a strong positive relationship between Capital Adequacy and Profitability
Annannab et al., 2022	Operational risk management and performance of cooperative microfinance in Thailand	To examine the operational risk management (ORM) impact on cooperative microfinance performance	Structural Equation Modelling (SEM)	The result indicates that cooperative microfinance performance is significantly affected. Here, specialization moderates the relationship between ORM and cooperative microfinance performance.
Dunyoh et al., 2022	The impact of credit risk on financial performance: evidence from rural and community banks in Ghana	To examine the impact of credit risk on the financial performance of rural and community banks	Descriptive Statistics, Correlation Analysis, Regression Analysis	The findings showed negative relationships between the two credit risk indicators and the measures for

		in Ghana		financial performance. The study concludes that rural and community banks' financial performance is compromised by credit risk and that credit risk is steadily increasing and has the ability in the future to hinder rural and community banks' financial performance.
Hameed and Ghafoor, 2022	Determinants of liquidity risk management in microfinance institutions	To determine the factors affecting liquidity risk management practices	Correlation, Regression Analysis	The study results revealed that the internal control, institution policies, institution board management; and risk monitoring strategies significantly affect the liquidity risk management in MFIs. The MFIs have a good internal control system and great strategies from the board should be delivered to the management. There is an adequacy in analyzing, controlling and monitoring the liquidity risk in MFIs.
Kaharuddin and Yusuf (2022)	The impact of liquidity risk optimization on the stability of Islamic commercial banks in Indonesia.	the effect of liquidity risk on bank stability with credit risk and operational efficiency as intervening variables for Islamic Commercial Banks in Indonesia	Normality test, Multicollinearity test, Heteroscedasticity test, Autocorrelation test, Regression Analysis	The results of this study indicate that liquidity risk can have a direct effect on bank stability, but there are also credit risk and operational efficiency variables that play a role in mediating the relationship to the stability of the

				bank. Meanwhile, liquidity risk is not able to directly affect the operational efficiency of the bank.
Yeasin (2022)	Impact of credit risk management on financial performance: A study of commercial banks in Bangladesh	To analyse the impact of credit risk management on financial performance of commercial banks	Panel Regression Analysis	The credit risk is negatively affecting the financial performance of commercial banks.
Orichom and Omeke, 2021	Capital structure, credit risk management and financial performance of microfinance institutions in Uganda	To examine the relationship between capital structure, credit risk management and financial performance of microfinance institutions (MFIs)	Correlation, Regression Analysis	The results reveal that credit risk management significantly contributes to sound financial performance. Second, capital structure is not significantly related to financial performance. Therefore, credit risk appraisal, credit risk monitoring and credit risk mitigation are essential in achieving sound financial performance of MFIs.
Siddique et al., (2021)	The Effect of credit risk management and bank-specific Factors on the Financial Performance of the South Asian Commercial Banks	To capture the effect of credit risk management and bank-specific factors on South Asian commercial banks' financial performance (FP).	Generalised Method of Moment (GMM)	The results indicated that NPLs, CER and LR have significantly negatively related to FP (ROA and ROE), while CAR and ALR have significantly positively related to the FP of the Asian commercial banks.
Afolabi et al., 2020	Credit risk and financial performance: evidence from microfinance banks in Nigeria	To examine the effect of credit risk on the financial performance of microfinance	Panel Ordinary Least Squares (OLS) regression techniques	The results of the analysis revealed that non-performing loans have a significant and negative

		banks in Nigeria		effect on returns on assets while loan-loss provisions have a negative but insignificant effect on returns on assets. Further results also showed a significant and positive relationship between total loans and advances (introduced as a control variable) and returns on assets.
Cheng et al., (2020)	Credit risk, operational risk, liquidity risk on profitability: A study on South Africa commercial banks. A PLS-SEM Analysis	to explore the influence of credit risk, operational risk, and liquidity risk effect on bank profitability.	Partial Least Square Structural Equation Model	The conclusions of this research indicated that credit risk has a significant positive association with bank profitability. Similarly, liquidity risk shown a positive and significant connection with bank profitability. However, operational risk indicated a negative affiliation with bank profitability.
Fadun and Oye (2020)	Impacts of operational risk management on financial performance: A case of commercial banks in Nigeria	To analyse the impact of operational risk management practices on the financial performance of commercial banks in Nigeria	Linear Multiple Regression Analysis	The results showed that there is a positive relationship between operational risk management and the financial performance of banks.
Odubuasi et al., (2020)	Effect of market risks on the financial performance of firms in Nigeria	To investigate one of the components of the risks (market risk) and to ascertain how the risks affect the activities of firms	Descriptive statistics, Correlation analysis, Regression Analysis	The results indicate that the exchange rate has a significant effect on both the ROA and ROE of Oil and Gas firms.

		in Nigeria.		Additionally, the interest rate has a significant effect on ROE and an insignificant effect on ROA. More results show that commodity price change has no significant effect on both ROA and ROE, also equity price change has no significant effect on the ROA and ROE of firms in the Oil and Gas sector in Nigeria.
Paul and Musiega, 2020	Effect of Credit risk management practice on the financial performance of microfinance institutions in Nairobi	To assess the effect of credit risk management practices on the financial performance of microfinance institution	Descriptive and Inferential Statistics	The findings of the study resulted in an understanding that credit risk management practices credit risk grading practices, viability identification practices, credit risk control practices and credit reminder practices were important factors in the financial performance of micro-finance banks in Kenya.
Suryaningsih and Sudirman (2020)	The influence of credit risk, liquidity risk and operational risk on profitability in Rural banks in Bali Province	To determine the effect of credit risk, liquidity risk and operational risk on profitability at Rural credit banks in the province of Bali	Multiple linear regression analysis	The result showed that credit risk and operational risk had a negative effect on profitability. The results of the liquidity risk study have a positive effect on profitability.
Ebenezer et al., (2019)	The effects of liquidity risk and interest rate risk on profitability and firm value among banks in ASEAN – 5 countries	This study explores the issues relating to liquidity risk and interest-rate risk, recognizing that existing studies are mostly vague	Descriptive Statistics, Panel Unit Root Test	The loan to deposit ratio has a positive significant impact on return on asset, interest rate risk and bank size have a significant

		in emerging and developing markets.		negative effect on return on asset for ASEAN banks while GDP and inflation have a positive significant effect on return on asset.
Madhuwanthi and Morawakage (2019)	Impact of liquidity risk on the performances of Sri Lankan Commercial banks	This study investigates the impact of liquidity risk on the performance of commercial banks in Sri Lanka	Descriptive statistics, Random effect model, Fixed effect model,	Researchers find that liquidity gap and non-performing loan ratio are significant proxies for liquidity risk. Multiple regression analysis reveals that liquidity risk negatively and significantly affects the bottom lines' Return on Average Assets (ROAA) and Return on Average Equity (ROAE), whilst positively affecting the top line Net Interest Margin (NIM) of the commercial banks.
Josphat and Joseph, 2018	Effect of financial risk on the financial performance of microfinance institutions in Kenya	To establish the effect of financial risk on the financial performance of microfinance institutions	Correlation analysis, Regression Analysis	The study found that microfinance institutions should review their credit rating policies to improve their performance and reduce non-performing loans. In addition, to enhance their liquidity position, microfinance institutions should maintain a sound level of current assets that can effectively cover their short-term obligations when they fall due
Nabi et al., 2018	Microfinance institutions of	To investigate the effects of credit	Descriptive Statistics,	The study reveals that credit policy,

	Bangladesh: The effects of credit risk management on credit performance	risk management on the credit performance of microfinance institutions	Correlation Analysis, Regression Analysis, Hypothesis Testing	credit risk control, credit collection procedures and Institutional factors have positive effects on credit performance, and they are statistically significant at 5%, 10%, 1% and 1% levels respectively; while credit terms and credit appraisals process have positive but insignificant effects on the credit performance of microfinance institutions.

2.4 Research Gap

Some researchers rely solely on statistical tools and techniques indicators to assess the risk and return of assets or securities in a firm. This research focuses on the topic of Risk and Return Analysis of microfinance companies with specific reference to five microfinance companies in Nepal. Unlike other research studies, this work utilizes a ten-year dataset spanning from fiscal year 2013/2014 to 2022/2023 and includes a sample of five microfinance companies. To evaluate the condition of risk factors or determinants and return of microfinance companies. Previous studies on the topic of "Risk and Return Analysis and Optimal Portfolio Creation of Common Stock Investment" have varied in their methodologies and a large amount of research has been done in the past but this research will be properly different from them. This research will find out how risk factors or elements affect the performance of microfinance companies' section in Nepal. Some studies have utilized small sample sizes that may not adequately represent the entire population, while others have focused on nominal fiscal periods that may not provide a comprehensive market overview.

This research will provide a proper relationship between risk determinants and their impact on the performance of banks. In this study, the researcher used liquidity risk, credit risk, operation risk and market risk as a factor of risk to investigate broad knowledge in the risk and return sector of microfinance companies. The return on assets and return on equity are also taken as indicators of microfinance companies' performance.

CHAPTER - III

RESEARCH METHODOLOGY

The organized, methodical approach that researchers take while organizing, carrying out, and evaluating their studies is referred to as research methodology. In order to answer a research issue or problem, it includes the theoretical framework, data gathering strategies, data analysis tactics, and overall approach. A precise road map for collecting pertinent data, confirming the accuracy and consistency of findings, and deriving significant conclusions is provided by a clearly defined research technique, which eventually helps researchers expand knowledge in a particular field or profession.

3.1 Research Design

The plan, framework, and approach of an inquiry developed to find answers to a research topic is known as research design. The plan is the research's general framework or schedule. According to Fred N. Kerlinger (1986), it comprises a schedule of the investigator's actions, from formulating the hypotheses and considering their operational ramifications through to the last data analysis. A research design is a comprehensive plan that outlines the techniques and protocols for gathering and evaluating the necessary data. Zikmund, William (2013).

This study falls under the category of risk and return analysis; hence it will be supported by recent historical data that spans a ten-year period from FY 2013/2014 to FY 2022/2023. Based on the information at hand, it will address the risk and return faced by Nepalese microfinance institutions. This study has employed a descriptive and causal research strategy in order to meet its goal. In a descriptive study, data is gathered in an unaltered environment—that is, without any manipulation.

3.2 Population & Sample of the Study

This study is based on the risk and return of Nepalese microfinance companies on the basis of returns and associated risk. There are 64 microfinance companies operating in Nepal. among them, 7.81% of the total population, five microfinance companies such as Chhimek Laghubittiya Sanstha Limited, Deprosc, Nerude, Nirdhan Utthan and Swalamban Laghubitta Sanstha Limited, are taken as a sample for this study by using a random sampling method.

3.3 Nature & Sources of Data

The majority of the study's foundation is secondary data. Online publications such as journals, websites, articles, and other online sources are used to get additional data. The websites of the NRB and the microfinance company are where the essential data are gathered. This study covers ten years of data starting from 2013/2014 to 2022/2023.

3.4 Method of Data Collection

It provides information on the data's sources and methods of collection. The data used in this investigation came from published sources. The sources of these were the websites and correspondence offices of the relevant parties. The websites of particular microfinance organizations provide the yearly reports of sample banks for a ten-year period. information about the risk variables affecting the financial success of microlending institutions.

3.5 Data Analysis Tools

A host of analytical tools can be applied to perform risk and return analysis of a firm. Following the nature of the study, a set of appropriate tools, particularly financial and statistical may be used for effective and significant analysis to meet the research objective.

A. Statistical Tools

The risk and return of the relevant banks are analyzed and interpreted using a variety of statistical techniques that are discussed below. In a similar vein, statistical methods are useful in determining patterns in the financial standing of commercial banks and in examining the correlation between factors, which aids microfinance firms in developing risk management strategies that optimize profits. The financial data in this study have been analyzed and interpreted using statistical methods including trend analysis of significant factors and the coefficient of correlation between various variables. This basis of statistical analysis related to this study is discussed below: -

- **Arithmetic Mean**

One value from the data range that is used to represent every value in the series is the mean, or average value. An average value is also referred to as a measure of central value since it falls somewhere within the data's range. To find the average value, take the total of all the words and divide it by the total number of items.

This formula is given below: -

$$\overline{X} = \frac{\sum X}{n}$$

Where, $\sum$ X= X_1+X_2+X_3+……..+X_n=Sum of given set of observation

n = Number of items observed.

X= Variables

- **Standard Deviations**

The standard deviation (SD), a measure of dispersion, was initially proposed by Karl Pearson in 1893. Sigma (σ) is often used to indicate it. The absolute dispersion is measured by the standard deviation, which is the sauternes of the mass of figures in a series around an average. More dispersion equals a higher standard deviation, and vice versa. High levels of observational uniformity and series homogeneity are indicated by tiny standard deviations. A large standard deviation refers to low uniformity and homogeneity of the series.

Symbolically,

$$SD\ (\sigma) = \sqrt{\frac{\sum \left(X - \overline{X}\right)^2}{N}}$$

- **Coefficient of Variation**

The coefficient of standard deviation is the relative measure of dispersion based on the standard deviation. The coefficient of variation (CV) is the coefficient of dispersion based on standard deviation multiplied by 100.

$$CV = \frac{SD}{Mean} \times 100\%$$

The link between the standard deviation and mean is shown in the coefficient of variation. Given that C.V. is unit-independent, it can be used to compare the variability of two distributions in a harsh way. Greater variability, or less consistency and uniformity, is indicated by higher CV, and vice versa.

- **Correlation Coefficient**

The "relationship" (or association) between one dependent variable (or factor) and one (or more) independent variable (s) or factor (s) is known as correlation. Stated differently,

correlation can be defined as the association between two or more variables, meaning that there is only one dependent variable and one or more independent variables.

$$\text{Correlation of coefficient, r} = \frac{n.\sum XY - \left(\sum X\right)\left(\sum Y\right)}{\sqrt{n.\sum X^2 - \left(\sum X\right)^2}.\sqrt{n.\sum Y^2 - \left(\sum Y\right)^2}}$$

Where,

n= Number of pairs of observation.

X= Variable

Y = Variable

r = correlation of coefficient

- **Regression Coefficient**

The link between a dependent variable and one or more independent variables can be modelled using the statistical analysis technique known as regression. By comparing the values of the independent and dependent variables, it seeks to identify the line or curve that best fits the data. By calculating the magnitude and direction of the link between variables, regression aids in understanding correlation and enables inference and prediction.

The equation of a linear regression line is given as Y = a + bX,

Where,

Y: This is the dependent variable

X: This is the independent variable

b: This is the coefficient or slope of the regression equation.

a: This is the intercept term or the constant term in the regression equation.

Multiple Regression Analysis

A statistical method for examining the relationship between two or more independent variables and a dependent variable is multiple regression analysis. It is an advancement above basic linear regression, which looks at the connection between one independent variable and one dependent variable. Finding out how the independent variables affect the dependent variable as a whole while accounting for their influence on one another is the aim of multiple regression.

The equation for a multiple regression model with 'p' independent variables is generally represented as:

$$Y = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \varepsilon$$

Where:

Y = dependent variable.

X1, X2, ..., X4 = independent variables.

β0 = Intercept.

β1, β2, ..., β4 = coefficients that represent the effect of each independent variable.

ε = Error term.

B. Financial Tools

- **Loan to Deposit Ratio (LDR)**

The Loan-to-Deposit Ratio (LDR) is a financial metric used by banks and financial institutions to assess their lending activities in relation to their deposit base. It indicates the proportion of a bank's deposits that are being used to fund loans and is often used as an indicator of a bank's liquidity and risk exposure. A higher LDR suggests that a bank is lending out a larger portion of its deposits, which can indicate a higher level of risk. Liquidity risk is the risk due to the inability of banks to meet obligations resulting from cash flow funding sources, or high-quality liquid assets that can be mortgaged, without disrupting the activities and financial condition of the bank, as measured by the loan-to Deposit Ratio (Badawi, 2017).

The formula for calculating the Loan-to-Deposit Ratio is:

$$Loan\ to\ Deposit\ Ratio\ (LDR) = \frac{Total\ \ Loan}{Total\ Deposit}$$

Where:

- Total Loans represent the total amount of loans a bank has issued.
- Total Deposits represent the total amount of deposits held by the bank.

- **Deposit to Total Assets Ratio (DTA)**

The deposit to total-assets ratio is a financial ratio used primarily by banks and other financial institutions to assess their liquidity and funding stability. This ratio measures the proportion of a bank's total assets that are funded by customer deposits. It is an important

indicator of the bank's reliance on deposits for financing its assets, and it can also give insights into the risk profile and financial health of the institution.

A higher ratio indicates that a larger portion of the bank's asset base is funded by deposits. This is generally viewed as a positive indicator because deposits are considered a stable and low-cost source of funding compared to other sources like wholesale funding or interbank loans. A lower ratio might indicate higher reliance on other, potentially more expensive and volatile sources of funding, which can introduce more risk into the bank's balance sheet.

The formula for calculating the deposit to total assets ratio is given below;

$$Deposit\ to\ Total\ Assets\ Ratio\ (DTA) = \frac{Total\ Deposit}{Total\ Assets}$$

- **Operating Efficiency Ratio (OER)**

The ratio of operating expenses divided by operating income is known as the Operating Expense Ratio (OER) or Operating Efficiency Ratio. This financial ratio is used to assess a company's operational efficiency by showing how much of the operating income is consumed by operating expenses. A higher ratio indicates that a larger portion of the operating income is being consumed by operating expenses, which can be a sign of lower operational efficiency. A lower ratio suggests that the company is more efficient in managing its operating expenses relative to the income it generates, often indicating better profitability potential. The formula to calculate the operating efficiency ratio is

$$Operating\ Efficiency\ Ratio\ (OER) = \frac{Operating\ Expenses}{Operating\ Income}$$

Where,

Operating Expenses: These are the costs related to the normal day-to-day operations of the business, excluding costs like interest payments and taxes. This typically includes costs such as salaries and wages, rent, utilities, and cost of goods sold (if directly related to the primary operations).

Operating Income: Also known as operating profit or Earnings Before Interest and Taxes (EBIT), this is the income that a company generates from its normal business operations, after deducting operating expenses but before interest and taxes.

- **Capital Adequacy Ratio (CAR)**

The Capital Adequacy Ratio (CAR), also known as the Capital to Risk (Weighted) Assets Ratio (CRAR), is a measure used by banks and other financial institutions to ensure that

they can absorb a reasonable amount of loss and complies with statutory Capital requirements. It is a key indicator of a bank's financial health and its capacity to handle potential losses, thereby providing a measure of protection to depositors and promoting stability and efficiency in the financial system. A higher CAR indicates a greater capacity to withstand losses and financial and economic stresses, showing that the bank is more capable of covering potential losses with its capital. A lower CAR may signal potential vulnerability, especially in times of financial distress or economic downturn, as it suggests less capital available to absorb losses.

$$Capital\ Adequacy\ Ratio\ (CAR) = \frac{Tier\ I\ Capital + Tier\ II\ Capital}{Risk\ Weighted\ Assets}$$

- **Return on Assets (ROA)**

A financial indicator called return on assets (ROA) is used to assess an organization's or company's profitability and efficiency. It evaluates a business's capacity to turn a profit on all of its assets. The ROA formula, which is commonly represented as a percentage, is computed by dividing net income by the average total assets. A higher return on assets (ROA) is a sign of improved resource and operational efficiency, and it shows how well a company is leveraging its assets to generate profits. Investors and stakeholders can evaluate the management's capacity to produce returns on their investments in the company by using ROA, which is a useful measure for evaluating the financial performance of businesses in the same industry or over time (Sharma et al., 2018). The formula for calculating return on assets is given below

$$Return\ on\ Assets\ (ROA) = \frac{Net\ Income}{Total\ Assets}$$

- **Return on Equity (ROE)**

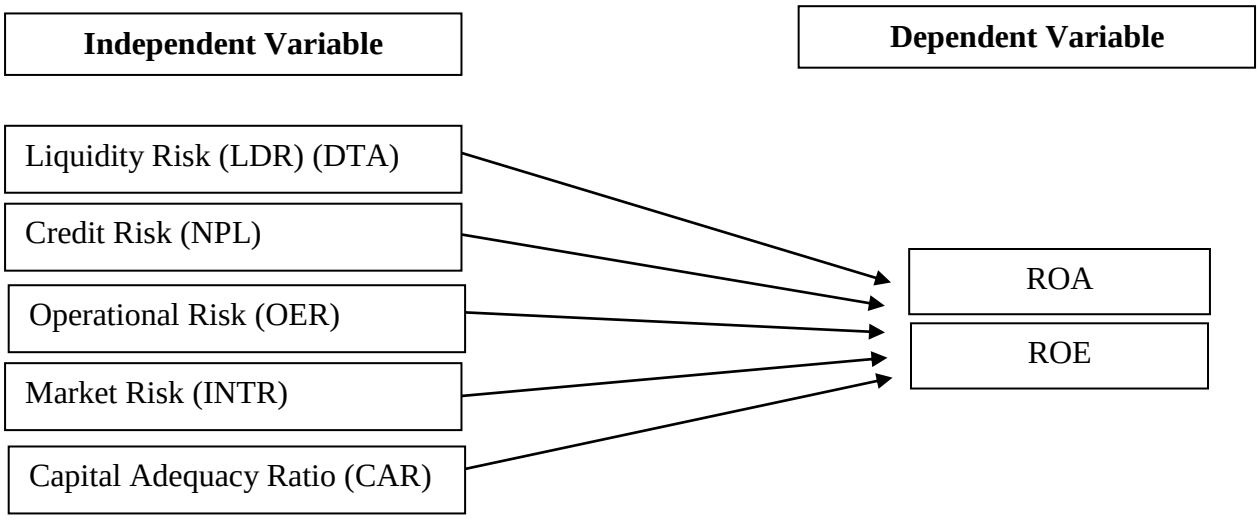
the proportion of common equity to net income. It calculates the rate of return on investment for common stockholders. The goal of management is to maximize shareholder returns on their investment in the company. According to Sharma et al. (2018), return on equity is the most effective way to assess a company's performance in achieving its objective. The formula for return on equity is given below;

$$Return\ on\ Equity\ (ROE) = \frac{Net\ Income}{Common\ Equity}$$

3.6 Research Framework and Variables Definitions

A strong theoretical foundation can be developed with the help of the research framework, which also makes it easier to identify research gaps and guides the choice of relevant research techniques. It offers a prism through which researchers can see their data, assisting them in interpreting their results and adding fresh perspectives to their area of study. To put it simply, a well-designed research framework makes a study more rigorous and relevant, making sure that it advances current knowledge and makes a significant contribution to the scholarly community (Johnson, 2019).

Figure 3 Relationship between independent and dependent variables



(Sources: Madhuwanti & Morawakage,2019; Suryaningsih & Sudirman, 2020, Odubuasi et al., 2020)

Figure 3, represents the independent and dependent variables. Dependent variables are affected by the independent variables. Return on assets and return on equity are affected by various determinants such as liquidity risk, credit risk, operational risk, and market risk. The simple definitions of all variables are given below separately.

Liquidity Risk

One of the key factors that determines profitability is the risk of liquidity. The incapacity of a bank to absorb a reduction in its obligations or to expand the asset side of the balance sheet gives rise to liquidity risk. Typically, banks keep more liquid assets on hand to stave off bankruptcy. Higher liquid asset levels are linked to lower rates of return, though, therefore it stands to reason that they are also linked to lower levels of profitability. Ali

and associates, 2018). Liquidity risk is the possibility that banks won't be able to pay their debts without causing disruptions to their operations and financial status, as shown by the loan-to-deposit ratio. This risk arises from cash flow funding sources or highly liquid assets that can be mortgaged (Badawi, 2017).

A bank's capacity to convert deposits into loans is gauged by its loan deposit ratio (LTDR); a greater ratio indicates that the bank can operate with less cash and tradeable assets, and vice versa (Murthy, 2004). Maturity mismatches, in which liabilities have a shorter duration than assets, give rise to liquidity risk. A lack of cash or liquid marketable assets may result from an unexpected increase in borrower demand exceeding expectations (Oldfield & Santomero, 1997). A banking institution's liquidity issue may cause bank runs and insolvency. Thus, reducing the risk associated with liquidity is among the most crucial parts of a bank's asset and liability management strategy.

Credit Risk

Cooper, Jackson, and Patterson (2003) attested to the fact that variations in credit risk lead to adjustments in bank loan portfolios, which therefore impact bank performance. According to Duca and Mclaughlin (1990), banks perform worse when they are exposed to more credit risk. A negative correlation between a bank's credit risk and profitability was also confirmed by Miller and Noulas (1997). This is because a bank's profitability declines as it becomes more exposed to high-risk loans because there is a greater chance of unpaid loans.

A liability arising from a client's failure to pay their debt or the money they were supposed to pay the bank on schedule and in full is known as credit risk. According to Adekunle et al., (2015), credit risk is the possibility that a customer won't repay their loans or the money they lent the bank on time and in full. However, credit risk is thought to be the most important risk that banks face because credit generates large amounts of bank profit due to interest earned on credit (Almekhlafi, et al., 2016). (Kolapo et al., 2012) also claimed that the key factors contributing to credit risk are bad management, ineffective loan policy, interest rate volatility, weak capital and liquidity rates, insufficient credit appraisal, improper lending procedures, bad lending underwriting, government intervention, and ineffective central bank regulation.

According to Reynolds and Ratanakomut (2000), a bank's capital adequacy and profitability are directly correlated. Large banks have lower capital adequacy ratios than small banks. It is calculated as follows: total bank capital divided by risk-weighted assets (Ali et al., 2018). Risk associated with credit is shown by capital adequacy and non-performing loan ratios.

Operational Risk

The Basel Committee for Bank Supervision has identified seven categories of operating risks. These include external fraud, which results in losses because of the actions of a third party with the intent to undermine and disregard bank regulations, and internal fraud, which results in losses because of the intention to disregard internal regulations. Operational risk has varying effects on the procedures and practices of all Financial Institutions. Management does, however, take into account organizational events that result from external incidents, entities, procedures, and structures. Operating threats, however, do not have the same effect on the systems. The impact varies based on the number of organizations participating and how complex the processes are. Three distinct approaches—the basic indicator technique, the standardized approach, and the advanced measurement tactic—are suggested by the Basel Committee (Basel II) for determining the regulatory capital charge on operating risk. According to Robertson, one type of operational danger that led to the financial crisis was the lack of due diligence. Operational risk is defined by regulators and financial firms as "the danger of loss from insufficient or ineffective internal procedures, entities, and structures, or an external event." Interestingly, according to him, the whole thing is "formed of operational risk" (Robertson, 2011). The microfinance companies' operational risk is indicated by the operation efficiency ratio.

Market Risk

The chance that a company would experience losses due to a shift in the value of its assets as a result of fluctuations in interest rates, stock prices, commodity prices, foreign exchange rates, and other market risk factors is known as market risk. According to Ekinci (2016), market risk includes interest rate, foreign exchange, stock, and commodity price risks. It is the possibility of losses in a liquid portfolio due to changes in market prices. According to Ekinci (2016) and Namasake (2016), exposure to market risk is more volatile than exposure to credit risk due to the quick changes in market circumstances that

have the potential to generate catastrophic financial losses and even collapse. Interest rates serve as a proxy for market risk for microfinance firms in this study.

Return on Assets (ROA)

The ratio of net profit after taxes to total assets, or ROA, indicates how well management is able to turn a profit from the company's assets. For banks, return on assets (ROA) is a critical performance metric that tracks shifts in the effective use of assets over time (Osman & Iddrisu, 2015). As a result, ROA was utilized in this study to gauge financial performance. It is computed by dividing a company's net income by its total assets.

Return on Equity (ROE)

A financial indicator called return on equity (ROE) assesses how profitable and effective a business is in making money off of the equity held by its shareholders. It is computed by dividing a company's net income by the equity held by its shareholders, and it is commonly stated as a percentage. ROE sheds light on how well a business is utilizing the capital of its investors to produce profits. A greater return on equity (ROE) is a measure of robust financial performance and effective capital use since it shows that a company is making more money in relation to the equity held by its shareholders. To evaluate a company's overall financial health and sustainability, however, a continuously high ROE should be examined in combination with other financial measures and industry norms. According to Gadzo et al. (2019), it is computed by dividing a company's net income after taxes by the total amount of equity.

CHAPTER – IV

RESULT AND DISCUSSION

4.1 Results

The presented data and their analysis are covered in this chapter. An attempt has been made to examine microfinance institutions' risk and return analyses in this chapter. An attempt is made to assess and diagnose the recent movement in the Nepalese stock market, with particular attention to listed banks, using a variety of instruments and the literature study from the previous chapter. Secondary sources account for the majority of the data collection. Figures and table results make it easier to make things clear and understandable.

4.1.1 Descriptive Statistics Analysis

For the microfinance organizations that were sampled, the study gives and analyzes descriptive statistics that include characteristics like minimum, maximum, mean, and standard deviation. The mean value is the mathematical average of the variables that are being examined; it represents their core. Within the data, this average provides a representative point. The lowest and highest values that a variable can have are indicated by its minimum and maximum values. In the meantime, the dataset's diversity or dispersion for each variable is shown by the standard deviation. A smaller standard deviation means that the data points are closer to the mean, whereas a bigger value means that the distribution is more widely dispersed. The provided table outlines profitability indicators for banks, like ROA, and demonstrates the interplay between independent variables such as loan-to-deposit ratio, deposit-to-total assets ratio, non-performing loans, operating efficiency ratio, interest rates and capital adequacy ratio and the corresponding dependent variable.

The following table shows the descriptive statistics of dependent and independent variables.

Table 2

Descriptive Statistics Analysis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Loan to Deposit Ratio	50	1.01019	3.37709	2.10848	0.68885
Deposit to Assets Ratio	50	0.24294	0.71882	0.44763	0.14109
Non-performing Loan	50	0.00150	2.39966	0.25078	0.43248
Operating Efficiency Ratio	50	0.03878	0.88873	0.46916	0.13023
Interest Rates	50	0.12260	0.21820	0.16814	0.02069
Capital Adequacy Ratio	50	0.05661	0.17442	0.11997	0.02347
Return on Assets	50	0.00465	0.24760	0.03271	0.03284
Return on Equity	50	0.03622	1.62932	0.27546	0.22926
Valid N (listwise)	50				

(Source: Data output from SPSS 27.0 analysis)

Table 2, illustrates the descriptive analysis of the study. The dataset consists of 50 observations. The minimum value of loan to deposit ratio is 1.01019, indicating the lowest level of loan-to-deposit ratio among the observations. The maximum recorded loan-to-deposit ratio is 3.37709, showing the highest level of loan-to-deposit ratio. The mean value of loan to deposit ratio accounted for 2.10848, providing the average estimate of the loan-to-deposit ratio. The standard deviation of loan to loan-to-deposit ratio is 0.68885, indicating the extent of variability or dispersion around the average loan-to-deposit ratio value. The minimum value of the deposit to total assets ratio is 0.24294, showing the lowest level of deposit to total assets ratio among the observations. The maximum value of the deposit to total assets ratio is 0.71882, indicating the highest level of deposit to total assets ratio among the observations. The mean value for deposit to total assets ratio is 0.44763, giving the average estimate of the deposit to total assets ratio. The standard deviation indicates the extent of variability around the mean and the standard deviation of the deposit to total assets ratio is 0.14109.

The minimum value of the non-performing loan is 0.00150 and the maximum value is 2.39966, indicating the lowest and highest level of non-performing loans among the observations. The average value of non-performing loans is 0.25078, providing the average value among the observations. The standard deviation value of non-performing is 0.43248. The minimum value recorded for the operating efficiency ratio is 0.03878, indicating the lowest level of operating efficiency ratio among the observations. The maximum value of the operating efficiency ratio is 0.88873, showing the highest level of operating efficiency value among the observations. The mean value of the operating ratio is 0.46916, providing an estimate of the average among the observations. The standard deviation of the operating efficiency ratio is 0.13023, indicating the variability or dispersion around the average value of the operating efficiency ratio.

The minimum value of the interest rate is 0.12260, indicating the lowest level of interest rate among the observations. The maximum value of the interest rate is 0.2180, showing the highest level of interest rate among the observations. The mean value of the interest rate is 0.16814, providing an estimation of the average of interest among the observations. The standard deviation of the interest rate is 0.02069, indicating the extent of variability or dispersion around the mean value of interest rates. The minimum value of the capital adequacy ratio is 0.05661, representing the lowest value of the capital adequacy ratio among the observations. The maximum value of the capital adequacy ratio is 0.17442, showing the highest level of capital adequacy ratio among the observations. The mean value of the capital adequacy ratio is 0.11997, providing an estimate of the average value of the capital adequacy ratio among the observations. The standard deviation of the capital adequacy ratio is 0.02347, indicating the extent of variability around the mean value of the capital adequacy ratio.

The minimum value of return on assets is 0.00465, indicating the lowest level of return on assets among the observations. The maximum value recorded for return on assets is 0.24760, indicating the highest level of return on assets among the observations. The mean value indicates an estimated average of the observations, of return on assets is 0.03271. The standard deviation of return on assets is 0.03284, representing the extent of dispersion around the mean value of return on assets. The minimum value of return on equity is 0.03622, indicating the lowest level of return on equity among the observations. The maximum value of return on equity is 1.62932, shows the highest value of return on

equity among the observations. The mean value of return on equity is 0.27546, providing the average value of return on equity among the observations. The standard deviation of return on equity is 0.22926, showing the extent of variability or dispersion around the average of return on equity.

4.1.2 Correlation coefficient of the variables

Table 3

Correlation Analysis

Correlations

		LDR	DTA	NPLs	OER	INTR	CAR	ROA	ROE
LDR	Pearson Correlation	1							
DTA	Pearson Correlation	-.949**	1						
NPLs	Pearson Correlation	-0.260	.374**	1					
OER	Pearson Correlation	.302*	-.343*	0.148	1				
INTR	Pearson Correlation	0.229	-.356*	-.487**	-0.194	1			
CAR	Pearson Correlation	-0.177	0.255	-0.076	-.473**	0.001	1		
ROA	Pearson Correlation	-0.134	0.188	-0.138	-0.268	-0.089	0.258	1	
ROE	Pearson Correlation	-0.163	0.162	-0.244	-0.253	0.012	0.116	0.931**	1

Listwise (N) = 50

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

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

(Source: Data output from SPSS 27.0 analysis)

Table 3, represents the correlation analysis table, The observations of the study are 50. The Pearson correlation coefficient between loan to loan-to-deposit ratio (LDR) and return on assets (ROA) is -0.134, and the return on equity (ROE) is -0.163. This indicates a negative correlation between the loan-to-deposit ratio and return on assets and also with the return on equity. It means that as LDR increases, ROA and ROE trend tends to decrease slightly. The Pearson correlation coefficient between DTA and ROA is 0.188 and the ROE is 0.162. This indicates a positive correlation between DTA ROA and ROE. It suggests that as DTA increased, the trend of ROA and ROE also increased slightly but the relationship is not very strong. The Pearson correlation coefficient of non-performing loans with ROA and ROE is -0.138 and -0.244 respectively. This indicates that there is a

negative correlation between the return on assets and the return on equity of non-performing loans. The Pearson correlation coefficient of the operating efficiency ratio between return on assets is -0.268 and the return on equity is -0.253. This indicates the negative correlation between them. It means that as OER increases, the trend of ROA and ROE tends to decrease slightly. The Pearson correlation coefficient between interest rate and return on assets is -0.089. This indicates a weak negative correlation between INTR and ROA. That means as ROA increases, INTR tends to slightly decrease. The correlation coefficient between ROE and INTR is 0.012, this indicates a positive correlation but there is not a strong relationship between interest rate and return on equity. The Pearson correlation coefficient between capital adequacy ratio (CAR) and return on assets is 0.258. This indicates a moderate positive correlation between return on assets and capital adequacy ratio. The Pearson correlation coefficient between return on equity and capital adequacy ratio is 0.116. This indicates a positive correlation between return on equity and capital adequacy ratio but there is a weak relationship between them.

At many levels, the correlation coefficients that have been reported are noteworthy. The statistical significance of the correlation is indicated by the statements "Correlation is significant at the 0.05 level (2-tailed)" and "Correlation is significant at the 0.01 level (2-tailed)". It implies that it is improbable that the observed correlations between the variables happened by accident.

4.1.3 Regression analysis of selected banks

A collection of statistical procedures called regression analysis is used to simulate the future relationship between two independent variables and to estimate the link between one dependent variable and one more. The only way multiple regression analysis and the simple linear model differ from each other is in how many independent variables are used in the model. By using the expected linear influence of one or more independent variables, regression creates a model that forecasts future behaviour for a dependent variable.

The model summary of the regression analysis is given below;

Table 4

Model Summary

Model Summary								
	ROA				ROE			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408[a]	0.167	0.050	0.0320	.399[a]	0.159	0.042	0.2244

a. Predictors: (Constant), Capital Adequacy Ratio, Interest Rates, Loan to Deposit Ratio, Non-performing Loan, Operating Efficiency Ratio, Deposit to Total Assets Ratio

(Source: Data output from SPSS 27.0 analysis)

Table 4, represents the summary table of regression analysis. The R-value is the correlation coefficient which shows how strong the linear relationship is between the dependent and independent variables. In the above calculation, there is a 0.408 R-value. R square, a coefficient to determination, stood at 0.167, which reflects that about 16.7 % of the systematic variation on return on asset (ROA) can explained by predictors and the remaining is due to the effect of the other factors. The R square was discovered to be 0.159. that indicates that the model has been explained. The predictors account for 15.9% of the variance in the dependent variable (ROE). This demonstrates that another variable entered to change in return on equity.

The number of terms in a model is taken into account when calculating the adjusted R square. A larger adjustment suggests that the model is being improved by the extra input variables, which include market, operation, credit, and liquidity risk. The value of an independent variable can be used to estimate the value of a dependent variable using the regression model, although the estimation will never match the real value. The variation between the actual value and the estimated value of a dependent variable (ROA) is known as the standard error, and it is equal to 0.032 for return on assets and 0.2244 for return on equity. The number of observations is 50 in this study.

Table 5

ANOVA Analysis

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	Mean Square	F	Sig.
1	Regression	0.009	6	0.001	1.433	.224[b]	0.410	0.068	1.358	.253[b]
	Residual	0.044	43	0.001			2.165	0.050		
	Total	0.053	49				2.575			

a. Dependent Variable: Return on Assets, Return on Equity

b. Predictors: (Constant), Capital Adequacy Ratio, Interest Rates, Loan to Deposit Ratio, Non-performing Loan, Operating Efficiency Ratio, Deposit to Total Assets Ratio

(Source: Data output from SPSS 27.0 analysis)

Table 5, displays the analysis of variance. The overall fitting of the model is not significant when the p-value is more than the level of significance i.e. 0.05. in other words, the observed finding is unlikely to have happened by coincidence, demonstrating an insignificant correlation between the independent variables and the expected result. The p-value is connected to the F-value is the significance (Sig.). The p-value of return on assets is 0.224 showing an insignificant correlation between independent variables and dependent variable (ROA). The p-value of return on equity is 0.253, demonstrating an insignificant relationship between predictors and the return on equity (ROE).

Regression Analysis of Selected Microfinance Companies

The regression of ROA and the independent variables, such as liquidity risk, credit risk, operation risk, and market risk, have been analyzed by defining ROA and ROE changes in terms of the independent variables of selected microfinance institutions. The regression analysis of the selected microfinance institutions is given below in Table 5

The Regression equation is:

$$Y_{ROA} = -0.032 + 0.0022LDR + 0.140DTA - 0.022NPLs - 0.035OER - 0.230INTR + 0.136CAR$$

$$Y_{ROE} = 0.368 + 0.047LDR + 0.577DTA - 0.197NPLs - 0.292OER - 1.182INTR - 0.545CAR$$

Where:

ROA = Return on Asset

ROE = Return on Equity

LDR = Loan to deposit ratio

DTA = Deposit to total assets ratio

NPLs = Non-performing loans

OER = Operating efficiency ratio

INTR = Interest rates

CAR = Capital adequacy ratio

Table 6

Coefficient table of return on assets

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.032	0.144		-0.221	0.826
	Loan to Deposit Ratio	0.022	0.025	0.456	0.875	0.386
	Deposit to Total Assets Ratio	0.140	0.136	0.603	1.034	0.307
	Non-performing Loan	-0.022	0.013	-0.287	-1.632	0.110
	Operating Efficiency Ratio	-0.035	0.045	-0.138	-0.768	0.447
	Interest Rates	-0.230	0.287	-0.145	-0.802	0.427
	Capital Adequacy Ratio	0.136	0.230	0.097	0.593	0.556

a. Dependent Variable: Return on Assets

(Source: Data output from SPSS 27.0 analysis)

Table 6, indicates the regression coefficient table of return on assets. The return on assets (ROA) is the dependent variable in the regression model represented by the following equation, while the loan-to-deposit ratio (LDR), deposit-to-total assets ratio (DTA), Non-performing loan (NPLs), operating efficiency ratio (OER), interest rates (INTR) and capital adequacy ratio (CAR) are the independent variables. When all independent variables are set to zero, the estimated value of the return on assets is represented by the intercept term, -0.032, the independent variable coefficient, however, is what is

important. In the context of regression analysis, T–stat is often used to determine the significance of the individual coefficient (Effects) of the independent variables in a regression model.

Similarly, the p-value added to increase the relationship between ROA and the loan-to-deposit ratio, representing the liquidity risk, of microfinance companies, is insignificant. The coefficient of LDR and DTA is 0.022 and 0.140 respectively and the p-value is 0.386 and 0.307 respectively the value of p is more than the level of significance i.e. 0.05, representing there is a positive but not statistically significant impact on return on assets by LDR and DTA. However, the NPLs, OER and INTR have a negative coefficient i.e. -0.022, -0.035 and -0.230 respectively and the p-value is more than the level of significance. This means that the return on assets is negatively but not statistically significantly influenced by the NPLs, OER and INTR. The impact of the capital adequacy ratio on ROA is positive and insignificant with the slope 0.556 (P = 0.556> 0.05).

Table 7

Coefficient table of return on equity

Coefficients					
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.368	1.012		0.364	0.717
	Loan to Deposit Ratio	0.047	0.174	0.142	0.271	0.788
	Deposit to Assets Ratio	0.577	0.952	0.355	0.606	0.548
	Non-performing Loan	-0.197	0.094	-0.372	-2.104	0.041
	Operating Efficiency Ratio	-0.292	0.319	-0.166	-0.916	0.365
	Interest Rates	-1.182	2.009	-0.107	-0.588	0.559
	Capital Adequacy Ratio	-0.545	1.611	-0.056	-0.338	0.737

a. Dependent Variable: Return on Equity

(Source: Data output from SPSS 27.0 analysis)

Table 7, indicates the regression coefficient table of return on equity. The return on equity (ROE) is the dependent variable in the regression model represented by the following equation, while the loan-to-deposit ratio (LDR), deposit-to-total assets ratio (DTA), Non-

performing loan (NPLs), operating efficiency ratio (OER), interest rates (INTR) and capital adequacy ratio (CAR) are the independent variables. When all independent variables are set to zero, the estimated value of the return on equity is represented by the intercept term, 0.368, the independent variable coefficient, however, is what is important. In the context of regression analysis, T–stat is often used to determine the significance of the individual coefficient (Effects) of the independent variables in a regression model.

Similarly, the p-value added to increase the relationship between ROE and the loan-to-deposit ratio, representing the liquidity risk, of microfinance companies, is insignificant. The coefficient of LDR and DTA is 0.047 and 0.577 respectively and the p-value is 0.788 and 0.548 respectively the value of p is more than the level of significance i.e. 0.05, representing there is a positive but not statistically significant impact on return on assets by LDR and DTA. However, the NPLs have a negative coefficient i.e. -0.197 and the p-value is lower than the level of significance i.e. 0.05> 0.041. The OER, INTR and CAR have a negative coefficient i.e. -0.292, -1.182 and -0.545 respectively and the p-value is more than the level of significance. This means that the return on assets is negatively but not statistically significantly influenced by the OER, INTR and CAR.

4.2 Discussion

In the study, the effect of liquidity risk, credit risk, operation risk and market risk on return on assets (ROA) and return on equity (ROE) was examined.

The result revealed that the liquidity risk measured by the loan-to-deposit ratio and deposit-to-total assets ratio has a positive and insignificant impact on the return on asset and the return on equity. This result is supported by Josphat and Joseph (2018), liquidity risk has a positive and significant impact on the financial performance of microfinance companies, implying that an increase in the liquidity position of the firms is associated with an increase in their financial performance. This is consistent with the argument made by Vossenand (2010) that the production of liquidity keeps consumers and businesses liquid, particularly for businesses that face difficulties obtaining alternative types of funding. The goal of managing liquidity risk is to maintain the company's liquidity so that it can keep performing its job. Suryaningsih and Sudirman (2020) supported this result, liquidity risk (LDR) has a favourable and noteworthy impact on profitability (ROA). This is because liquidity risk is a risk that materializes when a bank has problems or is unable to fulfil its immediate obligations. Bank profitability will rise in tandem with an increase

in the quantity of loans they provide. One potential issue is that the bank may not be able to predict with precision when and how much of its customers' funds would be needed or withdrawn. Therefore, estimating liquidity needs is a pretty complex bank problem in bank management. The public's confidence in banks is influenced by their capacity to manage liquidity, which benefits the bank's operations and continued survival. This result is supported by Yeasin (2022) the loan-to-deposit ratio had a positive and statistically significant impact on the financial performance of banks.

Credit risk is measured by non-performing loan and capital adequacy ratio, non-performing loan has a negative but not statistically significant impact on the return on assets but a negative and significant impact on the return on equity, and capital adequacy ratio has a positive and insignificant impact on the return on assets but a negative and insignificant impact on the return on equity. Dunyoh et al. (2022) partially support these findings, the findings revealed that non-performing loans have a negative and statistically significant impact on the return on assets and return on equity. Josphat and Joseph (2018) supported this result that credit risk has a negative significant impact on the microfinance company's financial performance, depicting that an increase in the level of credit risk was associated with a decreased financial performance of microfinance companies. This was in line with the findings of Yakup and Asli (2010), who showed that exposure to currency risk had an impact on the day-to-day operations of microfinance firms, particularly those that dealt with international clients. This result is supported by Kosasia and Njeru (2023), credit risk is depicted by the significant negative relationship between financial performance (ROE) and credit risk. A unit increase in credit risk holding other factors constant results in an increase in the return on equity (ROE) which is the highest positive association compared to the other forms of risks.

Credit risk is measured by non-performing loan and capital adequacy ratio, non-performing loan has a negative but not statistically significant impact on the return on assets but a negative and significant impact on the return on equity, and capital adequacy ratio has a positive and insignificant impact on the return on assets but a negative and insignificant impact on the return on equity. This result is partially supported by Afolabi et al. (2020) that non-performing loans have a significant and negative effect on returns on assets. Suryaningsih and Sudirman (2020) are partially in favour of this finding that credit risk (NPLs) has a negative and statistically significant effect on profitability. The study's findings support those of Yusriani et al. (2018), who found that credit risk (NPL)

significantly reduces profitability. That is to say, the greater the percentage of non-performing loans (NPL) in bank credit management, the lower the bank's level of profitability as measured by ROA. The findings of this investigation are consistent with those of Putri and Dewi's (2017) study, which discovered a substantial and adverse impact of NLP on profitability.

Credit risk is measured by non-performing loan and capital adequacy ratio, non-performing loan has a negative but not statistically significant impact on the return on assets but a negative and significant impact on the return on equity, and capital adequacy ratio has a positive and insignificant impact on the return on assets but a negative and insignificant impact on the return on equity. Taiwo Olarinre et al. (2023) argued that the return on assets is positively and marginally impacted by credit risk. Bagale (2023) disputes the preceding conclusions. The results show that profitability is significantly impacted by credit risk. Parajuli (2023) discovered a strong correlation between profitability and NPL and CAR. Likewise, no meaningful correlation has been shown between CDR and profitability. Combining all of the sample data into one revealed that ROA and EPS are negatively impacted by NPLR and CAR overall. Pratiwi and Masdupi (2021) support this results that credit risk has a negative and considerable impact on return on assets (ROA). Li Mei and Nsiah et al. (2019) support this result that there is a negative correlation between credit risk and a firm's profitability. Therefore, organizations should use effective credit risk management strategies to steer their profitability. Widajatun and Ichsani (2019) argued that credit risk significantly affects the return on assets. Yasin (2022) concurs with the findings, indicating that credit risk has a detrimental impact on financial performance. Dana et al. (2021) discovered a statistically significant detrimental impact of NPL on profitability (ROA).

The results revealed that the operational risk measured by the operating efficiency ratio has a negative and insignificant impact on the return on assets and return on equity. Kosasia and Njeru (2023) partially argued that the operating efficiency ratio has a negative and statistically significant impact on the return on equity. Annannab et al. (2022) argued that microfinance performance is significantly affected. Here, specialization moderates the relationship between ORM and cooperative microfinance performance. Suryaningsih and Sudirman (2020) partially comment on this result that Operational Risk (OER) has a negative and significant impact on profitability (ROA). This implies that profitability decreases with increasing operational risk. This is so

because operational risk refers to the expenses paid in order to produce earnings that are lower than those obtained from the utilization of assets. Operational risks can arise from insufficient or broken internal procedures, errors made by people, malfunctioning systems, and outside events that have an impact on bank operations (Indonesian Bankers Association, 2016). Any rise in operating expenses will lower earnings before taxes, which will eventually lower the relevant bank's profit or profitability. Operational risk can arise from declining profitability, which is impacted by service failures and the operational cost structure of the bank.

The results revealed that the operational risk measured by the operating efficiency ratio has a negative and insignificant impact on the return on assets and return on equity. This result is supported by Adam et al. (2018), operational risk has a negative impact on profitability (ROA), and the findings of this study are consistent with that finding. According to studies by Pamularsih (2015) and Putri et al. (2018), operational costs of operating income significantly impacted profitability, and these findings are consistent with the findings of this study as well. More BOPO indicates that banks are less able to cut costs associated with operations, which results in wasteful spending. A bank's likelihood of encountering difficult conditions decreases as its BOPO (OER) percentage decreases, indicating more efficient operational costs borne by banks. Fadun and Oye (2020) found that there is a positive relationship between operational risk management and the financial performance of banks. The result is in favour of the findings of Yeasin (2022) that non-performing loans and capital adequacy ratios had a negative and statistically significant impact on financial performance.

The return on assets and return on equity is negatively and insignificantly influenced by the Market risk which is measured by the interest rates. This result is not supported by Dunyoh et al. (2022), the interest rate has a positive and statistically insignificant impact on the return on assets and return on equity. Josphat and Joseph (2018) partially supported that there is a negative and significant relationship between interest rate risk and microfinance institutions' financial performance, indicating that an increase in the level of interest was associated with a decrease in financial performance among microfinance companies. Kosasia and Njeru (2023) argued that a significant positive association between financial performance and interest rate risk. Most of the microfinance institutions were making losses and with a lower return on equity were the unregulated deposits taking Microfinance institutions as indicated by their negative mean. This

finding argued with Taiwo Olarinre et al. (2023) that the market risk has a positive and significant impact on the return on assets. Pratiwi and M. (2021) argued with the result, that market risk has a positive and significant effect on ROA.

CHAPTER – V
SUMMARY AND CONCLUSION

There are three sections in this chapter. A brief description of the study is given in the first part. The study's result is presented in the second section, and the chapter's final section discusses the ramifications of the background analysis that was done.

5.1 Summary

The dissertation title of the study is “Risk and Return Analysis of Microfinance Institutions in Nepal. The main objectives of the study are to analyze the existing position of risk factors and the return of microfinance companies and to examine the relationship between risk factors and the profitability of microfinance companies, finally, the last objective of the study is to find out the impact of risk factors affect the profitability of microfinance companies in Nepal. the relationship between risk and return is described by the nature of investors' risk-taking ability. While analyzing the risk and return some brief literature reviews have been performed. A descriptive and causal research design was used in this study. The researcher took five samples from sixty-one microfinance companies operating in Nepal. The study covers only ten years of data starting from 2013/2014 to 2022/2023 AD. All the necessary data were collected from the annual reports of the sampled companies and the websites of sampled microfinance companies. The data and collected information through different sources have been analyzed using different statistical tools such as descriptive statistics, correlation analysis, ANOVA and regression analysis by using SPSS 27.0 software. The independent variables are loan-to-deposit ratio, deposit-to-total assets ratio, non-performing loans, operating efficiency ratio, interest rate and capital adequacy ratio, the indicators of the performance of microfinance companies are return on assets and return on equity.

In regression analysis, the results of the study showed that the liquidity risk measured by the loan-to-deposit ratio and deposit-to-total assets ratio has a positive and insignificant impact on the return on asset and the return on equity. Credit risk is measured by non-performing loan and capital adequacy ratio, non-performing loan has a negative but not statistically significant impact on the return on assets but a negative and significant impact on the return on equity, and capital adequacy ratio has a positive and insignificant impact on the return on assets but a negative and insignificant impact on the return on equity. The results revealed that the operational risk measured by the operating efficiency

ratio has a negative and insignificant impact on the return on assets and return on equity. The return on assets and return on equity is negatively and insignificantly influenced by the Market risk which is measured by the interest rates.

5.2 Conclusion

This study on the risk and return analysis of microfinance companies in Nepal examined the pattern of relationship and the impact of risk factors on the profitability of microfinance companies in Nepal.

The liquidity risk measured by the loan-to-deposit ratio and deposit-to-total assets ratio has a positive and insignificant impact on the return on asset and the return on equity. While these liquidity metrics are important for assessing a financial institution's stability and ability to meet its short-term obligations, they do not appear to directly affect its profitability as measured by ROA and ROE. This implies that other factors may have a more pronounced impact on financial performance, highlighting the complexity of the relationship between liquidity risk and profitability in the banking sector. Further research may be warranted to explore additional variables that could explain variations in bank profitability. While liquidity risk is an important consideration for financial institutions, this research indicates that within the context of the studied variables, it may not directly affect profitability measures such as ROA and ROE. However, it's essential for financial institutions to continue monitoring liquidity risk as it can have indirect effects on other aspects of financial performance and stability.

The finding that credit risk has a negative and significant impact on the return on equity (ROE) implies that higher levels of credit risk, as indicated by non-performing loans and capital adequacy ratio, are associated with lower profitability for the financial institution being studied. This suggests that investors and stakeholders should be particularly attentive to the management of credit risk, as it directly affects the return on equity. While credit risk except capital adequacy ratio also has a negative impact on the return on assets (ROA), this impact is not statistically significant. This suggests that while credit risk affects profitability, its influence on the efficiency of asset utilization, as measured by ROA, is not as pronounced or detectable within the context of the studied variables. Financial institutions with higher capital adequacy ratios may be better equipped to withstand adverse credit events and protect shareholder interests. These results emphasize

the importance of prudent credit risk management practices and maintaining adequate capital buffers to support financial stability and profitability.

The finding that operational risk, as measured by the operating efficiency ratio, has a negative but insignificant impact on both ROA and ROE suggests that changes in operational efficiency may not have a discernible effect on the profitability of the financial institution being studied within the context of the measured variables. While operational risk is a crucial aspect of managing a financial institution, this research indicates that, based on the operating efficiency ratio, variations in operational efficiency may not directly translate into significant changes in profitability. However, it's essential for financial institutions to continue monitoring and improving operational efficiency to enhance overall performance and resilience.

The finding that market risk, represented by interest rates, has a negative but insignificant influence on ROA and ROE suggests that fluctuations in interest rates may not have a discernible effect on the profitability of the financial institution being studied within the context of the measured variables. Though this research indicates that, based on the current analysis, interest rate variations may not directly translate into large changes in profitability as assessed by ROA and ROE, they are nevertheless important factors for financial institutions to take into account. To minimize potential negative consequences on their financial performance, financial institutions must continue to monitor and manage interest rate risk.

5.3 Implications

Based on the preceding assessment of risk and return profiles among the chosen microfinance companies in Nepal, the subsequent recommendations are formulated for these companies concerning various aspects of risk and return analysis.

- The findings of this study may be utilized by depositors and creditors to assess the state of microfinance organizations and determine the best course of action.
- This study only uses ten-year data to demonstrate the risk and return analysis of microfinance firms in Nepal. It is also possible to conduct additional study with a sizable sample of different financial institutions.
- This research examined the effects of market, liquidity, credit, and operation risks on the return on assets (ROA) and return on equity (ROE) of a specific set of

microfinance firms. Those variables can be consulted by other researchers for their research.

- To examine their effects on the Risk and Return of these sampled companies, more research might be done on the various facets of risk factors that influence both hazards.

REFERENCES

Abdullah, A., Farouk, A., & Bassam, R. (2018). Operational risk management in financial institutions: An overview. *Business and economic research, VIII*(2), 11-32. https://doi.org/10.5296/ber.v8i2.12681.

Accenture. (2015). *Reaping the benefits of operational risk management*. 1-16. Retrieved from https://www.accenture.com/t20150715t045908__w__/muen/_acnmedia/accenture/conversio -assets/dotcom/documents/global/pdf/industries_6/accenture-reaping-the-benefits-of operational-risk-management.pdf (Accessed 5 February 2020).

Adam, M., Safitri, R., dan Wahyudi, T. (2018). Effect of Company Size, Liquidity and Operational Efficiency On Bank Profitability With Problem Credit Risk As A Moderating Variable At Commercial Banks That Are Listed On The Indonesia Stock Exchange. *Journal Perspektif Pembiayaan Dan Pembangunan Daerah, VI*(3), 331–344.

Adekunle, O., Alalade, S.Y. & Agbatogun, T. (2015). Credit Risk Management and Financial Performance of Selected Commercial Banks in Nigeria. *Journal of Economic & Financial Studies, III*(01), DOI:10.18533/jefs.v3i01.73.

Afolabi, T. S., Obamuyi, T. M. & Egbetunde, T. (2020). Credit risk and financial performance: evidence from microfinance banks in Nigeria. *IOSR Journal of Economics and Finance, XI*(12), 08-15, Available at: www.iosrjournals.org.

Agnello, L., & Sousa, R. M. (2012). How do banking crises impact income inequality? *Applied Economics Letters, XIX*(15), 1425-1429. https://doi.org/10.1080/13504851.2011.631885.

Akhavein, J. D., Berger, A.N. & Humphrey, D.B. (1997). The effects of megamergers on efficiency and prices: Evidence from a bank profit function. *Review of Industrial Organization, XII*(1), 95-139.

Ali, S. S. (2013). *State of liquidity management in Islamic financial institutions*. https://doi.org/10.12816/0000240.

Almekhlafi, E., Almekhlafi, K., Kargbo, M. & Hu, X. (2016). A Study of Credit Risk and Commercial Banks' Performance in Yemen: Panel Evidence. *Journal of Management Policies and Practices, IV*(1), 57-69. DOI:10.15640/jmpp.v4n1a4.

Al-Tamimi, H., Al-Mazrooei, F. 2007, “Banks' Risk Management: A Comparison Study of UAE National and Foreign Banks”, *The Journal of Risk Finance*, *VIII*(4), 394 – 409.

Annannab, H., Bakar, A. A. & Khan, S. J. B. M. (2022). Operational risk management and performance of cooperative microfinance in Thailand. *International Journal of Social Science and Economic Review, IV*(1), 17-24. doi.org/10.36923/ijsser.v4i1.148.

Badawi, A. (2017). Effect of Credit Risk, Liquidity Risk, and Market Risk Banking to Profitability Bank (Study on Devised Banks in Indonesia Stock Exchange). *European Journal of Business and Management, IX*(29), 1–8.

Bagale, S. (2023). Credit risk management and profitability of commercial banks in Nepal, *International Journal of Finance and Commerce*, *V*(1), 60-67, www.commercejournals.com.

Barbu, T.C., Olteanu, A. C., & Radu, A. N. (2008). The necessity of operational risk management and quantification. *Annals of Faculty of Economics, III*, 661-667. Retrieved from https://www.researchgate.net/publication/23691652_The_necessity_of_operational_risk_management_and_quantification.

Chaudhary, U. K. (2021). *Risk and return analysis: A comparative study of commercial banks in Nepal.* Published Master Degree Thesis, Tribhuvan University, Central Department of Management, Kathmandu, Nepal.

Cheng, L., Nsiah, T. K., Charles, O. & Ayisi, A. L. (2020). Credit risk, operational risk, liquidity risk on profitability: a study on South Africa commercial banks. A PLS – SEM Analysis. *Revista Argentina de Clinica Psicologica*, *XXIX*(5), 5-18, DOI: 10.24205/03276716.2020.1002.

Cooper, M. J., Jackson III, W.E. & Patterson, G.A. (2003). Evidence of predictability in the cross-section of bank stock returns. *Journal of Banking and Finance, XXVII*(5), 817-850.

Dewatripont, M., & Tirole, J. (1994). A theory of debt and equity: Diversity of securities and manager-shareholder congruence. *The quarterly journal of economics, CIX*(4), 1027-1054. https://doi.org/10.2307/2118355

Duca, J. & McLaughlin, M. M. (1990). *Developments affecting the profitability of commercial banks.* Federal Reserve Bulletin, *LXXVI*(7), 477-499.

Dynyoh, M., Ankamah, E. T., & Kosipa, S. J. K. (2022). The impact of credit risk on financial performance: evidence from rural and community banks in Ghana. *Hybrid Journal of Business and Finance, II*(1), 7-26, Retrieved from Retrieved from https://royalliteglobal.com/hjbf/article/view/740.

Ebenzer, O. O., Islam, M. A., Yusoff, W. S. & Rahman, S. (2019). The effects of liquidity risk and interest rate risk on profitability and firm value among banks in ASEAN-5 countries. *Journal of Reviews on Global Economics,* (8), 337-349.

Edem, D. B. (2017). Liquidity Management and Performance of Deposit Money Banks in Nigeria (1986–2011): An Investigation. *International Journal of Economics, Finance and Management Sciences, V*(3), 146. DOI:10.21511/bbs.14(3).2019.13.

Ejoh, N. O., Okpa, I. B., dan Egbe, A. A. (2014). The Impact of Credit and Liquidity Risk Management on The Profitability of Deposit Money Banks in Nigeria. *International Journal of Economics, Commerce and Management, II*(9), 1–15.

Ekinci, A. (2016). The effect of credit and market risk on bank performance: evidence from Turkey. *International Journal of Economics and Financial Issues, VI*(2), 427 – 434.

Entrop, O., Memmel, C., Wilkens, M., & Zeisler, A. (2008). *Analyzing the interest rate risk of banks using time series of accounting-based data: Evidence from Germany*.

Fadun, O. S., & Oye, D. (2020). Impacts of operational risk management on financial performance: a case of commercial banks in Nigeria. *International Journal of Finance & Banking Studies, IX*(1), 22-35.

Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance, XXV*(2), 383-417. doi:10.1111/j.1540-6261. 1970.tb00518.

Fatemi, A., Fooladi, I. 2006, "Credit Risk Management: A Survey of Practices", *Managerial Finance, XXXII*(3), 227-233.

Habib, S., Masood, H., Hassan, T. S., Mubin, M., & Baig, U. (2014). Operational risk management in the corporate and banking sector of Pakistan. *IISTE Journal, IV*(5), 58-66. http://dx.doi.org/10.2139/ssrn.2663415.

Hameed, A., & Ghafoor, F. (2022). Determinants of liquidity risk management in microfinance institutions, *Journal of Contemporary Business and Islamic Finance, II*(1), 86-93.

Hemrit, W., & Arab, M. B. (2013). The major sources of operational risk and the potential benefits of its management. *Journal of Operational Risk, VII*(4), 71-92. https://doi: 10.21314/JOP.2012.115.

Hussain, S., & Shafi, M. (2014). Operational risk in banks: A review. *Elk Asia Pacific Journal of Finance and Risk Management, V*(2), 26-39. Retrieved from https://www.elkjournals.com/MasterAdmin/UploadFolder/4.%20OPERATIONAL%20RISK%20IN%20BANKS%20A%20REVIEW%20%20Final/4.%20OPERATIONAL%20RISK%20IN%20BANKS%20A%20REVIEW%20-%20Final.pdf.

Jarrow, R. A., & Turnbull, S. M. (2000). The intersection of market and credit risk. *Journal of Banking & Finance, XXIV*(1-2), 271-299. https://doi.org/10.1016/S0378-4266(99)00060-6SA.

Johnson, R. (2019). *Theoretical Frameworks in Educational Research*. Sage Publications.

Josphat, L. K., & Joseph, O. (2018). Effect of financial risk on the financial performance of micro-finance institutions in Kenya. *International Academic Journal of Economics and Finance, III*(2), 357-369, Available Online at: http://www.iajournals.org/articles/iajef_v3_i2_357_369.pdf.

Kaharuddin, & Yusuf, M. (2022). The impact of liquidity risk optimization on the stability of Islamic commercial banks in Indonesia. *The 1st Proceeding of The International Conference on Economics and Business*, *I*(2), 671-688.

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica, XLVII*(2), 263-292. doi:10.2307/1914185

Kolapo, T. F., Ayeni, R. K., & Oke, M. O. (2012). Credit risk management and commercial banks' performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research, II*(2), 31–38.

Kosasia, N. L. M. & Njeru, A. W. (2023). Relationship of credit risk and profitability of Microfinance Institutions in Kenya. *International Journal of Social Science and Humanities*, *I*(1), 736-749, Available at https://researchbridgepublisher.com.

Maaka, Z. A. (2013). *The Relationship Between Liquidity Risk and Financial*, Kenya: University of Nairobi.

Madhuwanthi, R. M. R., & Morawakge, P. S. (2019). Impact of liquidity risk on the performance of Sri Lankan commercial banks. *Sri Lanka Journal of Social Sciences*, *XLI*(1), 53-64, DOI: https://dx.doi.org/10.4038/sljss.v4il.7572.

Meyer, L. (September 1, 2000) "*Why Risk Management is Important for Global Financial Institutions*" at the Risk Management of Financial Institutions United Nations Conference Center Bangkok, Thailand.

Miller, S. & Noulas, A. (1997). Portfolio mix and large-bank profitability in the USA. *Applied Economics, XXIX*(4), 505-512.

Muriithi, J. G., & Waweru, K. M. (2017). Operational risk, bank size and the financial performance of commercial banks in Kenya. *Journal of Finance & Banking Studies, VI*(3), 39-50. https://doi.org/10.20525/ijfbs.v6i3.691.

Muriithi, J.G., Muturi, W.M., & Waweru, K.M. (2016). The effect of market risk on the financial performance of commercial banks in Kenya. *Journal of Finance and Accounting, IV* (4), 225 – 233.

Murthy, S. R. (2004). Financial ratios of major commercial banks. *SSRN Electronic Journal.* Retrieved from https://www.researchgate.net/publication/228200738_Financial_Ratios_of_Major_Commercial Banks (Accessed 10 April 2019).

Nabi, M. N., Gao, O. & Rahman, M. T. (2018). Microfinance institutions of Bangladesh: the effects of credit risk management on credit performance. *Journal of Economics and Sustainable Development, IX*(22), 104-114.

Namasake, W.K. (2016). *The effect of market risk on the financial performance of commercial banks in Kenya.* Unpublished MSc project submitted to School of Business, University of Nairobi.

Odubuasi, A., Udak Deborah, W., & Ifurueze, M. (2020). Effect of marketing risks on the financial performance of firms in Nigeria. *European Journal of Accounting, Auditing and Finance Research*, *VIII*(6), 28-45.

Oldfield, G. and Santomero, A. (1997). Risk Management in Financial Institutions, *Loan Management Review, IXL*(1), 33-46.

Orichom, G. & Omeke, M. (2020). Capital structure, credit risk management and financial performance of microfinance institutions in Uganda. *Journal of Economics and International Finance*, *XIII*(1), 24-31, Available at: https://www.academicjournals.org/JEIF.

ORX (2018). *The death of operational risk?* Retrieved from https://managingrisktogether.orx.org/news-and-blogs/death-operational-risk (Accessed 24 January 2019).

Osman, I., & Iddrisu, M. N. (2015). An empirical study of the relationship between profitability ratios and market share prices of publicly traded banking financial institutions in Ghana. *International Journal of Economics, Commerce and Management, III*(12), 27-42. Retrieved from http://ijecm.co.uk/wp-content/uploads/2015/12/3123.pdf

Pamularsih, D. (2015). Pengaruh LDR, NPL, NIM, BOPO, CAR Dan Suku Bunga terhadap Profitabilitas pada Sektor Perbankan yang Terdaftar Di Bursa Efek Indonesia Periode Tahun 2009-2013. *Journal Ilmiah Mahasiswa S1 Akuntansi Universitas Pandanaran*, *I*(1), 1–20.

Parajuli, M. (2023). Impact of credit risk management on the performance of Nepalese commercial banks. *International Journal of Finance and Commerce*, *V*(2), 20-26, www.commercejournals.com.

Paudel, R. B., Baral, K. J., Gautam, R. R., & Rana, S. B. (2021). *Investment Management*. Kathmandu: Asmita Books Publisher & Distributors (P) Ltd.

Paul, S. M. & Musiega, M. (2020). Effect of credit risk management practices on the financial performance of micro-finance institutions in Nairobi. *International Journal of Recent Research of Social Science and Humanities (IJRRSSH), VII*(3), 2239, Available at: www.paperpublications.org.

Peter, S., Gordon, L., & Yueran, M. (2018). Rethinking operational risk capital requirements. *Journal of Financial Regulation*, *IV*(1), 1–34. https://doi.org/10.1093/jfr/fjx009

Power, M. (2003). *The invention of operational risk*. London School of Economics and Political Science Discussion Paper No 16. Retrieved from http://eprints.lse.ac.uk/21368/1/DP16.pdf (Accessed 7th January 2019).

Putri, N. K. A. P., Wiagustini, L. P., Dan Abundanti, N. N. (2018). Pengaruh NPL, CAR dan BOPO Terhadap Preferabilities Pada BPR Di Kota Denpasar. *E-Journal Manajemen Unud, VII*(11), 6212–6238.

Reynolds, S. E. & Ratanakomut, S.G. (2000). Bank financial structure in pre-crisis. East and South East Asia. *Journal of Asian Economy*, *XI*(3), 319-331.

Rocco, T. S., & Plakhotnik, M. S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: Terms, functions, and distinctions. *Human Resource Development Review, VIII*(1), 120-130).

Siddique, A., Khan, M. A. & Khan, Z. (2021). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial

banks. *Asian Journal of Accounting Research*, *VII*(2), 182-194, DOI: 10.1108/AJAR-08-2020-0071.

Siminyu, M., Clive, M., & Musiega, M. (2017). Influence of operational risk on the financial performance of deposit-taking savings and credit co-operatives in Kakamega County. *International Journal of Management and Commerce Innovations*, *IV*(2), 509-518. Retrieved from https://www.researchpublish.com/journal/IJMCI/Issue-2-October-2016-March-2017/0

Suryaningsih, N. P. R., Sudirman, M. S. N. (2020). The influence of credit risk, liquidity risk, and operational risk on profitability in Rural banks in Bali Province. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, *IV*(3), 258-265, www.ajhssr.com.

Syafi'i, M. F. R., dan Rusliati, E. (2016). Credit Risk, Market Risk, Operational Risk and Liquidity Risk on Profitability of Banks in Indonesia. *Trikonomika*, *XV*(2), 78–88.

Taswan, C., & Si, M. (2010). Manajemen Perbankan. Yogyakarta: UPP STIM YKPN Yogyakarta.

Yakup, S. &Asli, T. (2010). Financial hedging practices and processes as a part of oil refining companies' supply chain, *Aalto University Apulensis Series Oeconomica, II*, 663-671.

Yeasin, H. M. (2022). Impact of credit risk management on financial performance: a study of commercial banks in Bangladesh. *Interdisciplinary Journal of Applied and Basic Subjects*, *II*(1), 14-22.

Yusriani, Mus, A. R., Dan Chalid, L. (2018). Pengaruh CAR, NPL, BOPO dan LDR Terhadap Preferabilities Pada Bank Umum Milik Negara Persero Di Bursa Efek Indonesia. *Journal Riset Edi*si *XXV*(2), 1–17.

APPENDICES

Raw Data

NPLs Amount in Rs. Billion

Interest Rate in Percentage

Year	Details	Loan to Deposit Ratio	Deposit to Total Assets Ratio	Non-performing Loan	Operating Efficiency Ratio	Interest Rates	Capital Adequacy Ratio	Return on Assets	Return on Equity
2013/2014	Chhimek	1.3583	0.5608	0.0015	0.5502	0.1602	0.0946	0.0208	0.6466
2014/2015	Chhimek	1.5205	0.5420	0.0015	0.4199	0.1621	0.1044	0.0315	0.3671
2015/2016	Chhimek	1.3831	0.5533	0.0094	0.3462	0.1746	0.1296	0.0376	0.3889
2016/2017	Chhimek	1.3654	0.5847	0.0116	0.3325	0.1720	0.1264	0.0371	0.3800
2017/2018	Chhimek	1.3754	0.6102	0.0184	0.3860	0.1518	0.1212	0.0341	0.3511
2018/2019	Chhimek	1.2686	0.6395	0.0545	0.4023	0.1638	0.1284	0.0310	0.2066
2019/2020	Chhimek	1.0102	0.6846	0.0864	0.3646	0.2026	0.1484	0.0243	0.1664
2020/2021	Chhimek	1.1092	0.6545	0.1203	0.3559	0.1699	0.1616	0.0383	0.2591
2021/2022	Chhimek	1.2241	0.7063	0.2207	0.3940	0.1295	0.1521	0.2476	1.6293
2022/2023	Chhimek	1.0498	0.7188	0.0866	0.0388	0.1498	0.1744	0.0240	0.1519
2013/2014	Deprosc	3.2556	0.2429	0.0073	0.5111	0.1897	0.0566	0.0298	0.2671
2014/2015	Deprosc	3.3643	0.2637	0.0094	0.4149	0.1900	0.1384	0.0424	0.3387
2015/2016	Deprosc	3.3771	0.2615	0.0326	0.3910	0.1888	0.1298	0.0426	0.3463
2016/2017	Deprosc	3.2546	0.2764	0.0402	0.3098	0.1877	0.1681	0.0422	0.2594
2017/2018	Deprosc	3.2170	0.2812	0.0615	0.4560	0.1726	0.1391	0.0264	0.1994
2018/2019	Deprosc	3.0948	0.3063	0.1093	0.3684	0.1692	0.1115	0.0339	0.2702
2019/2020	Deprosc	2.3411	0.3638	0.2966	0.4762	0.1784	0.1230	0.0212	0.1619
2020/2021	Deprosc	2.3745	0.3804	0.1413	0.3799	0.1590	0.1342	0.0413	0.2704
2021/2022	Deprosc	2.2947	0.4101	0.1860	0.4831	0.1513	0.1445	0.0295	0.1825
2022/2023	Deprosc	2.2045	0.4249	0.0248	0.5884	0.1374	0.1263	0.0063	0.0431
2013/2014	Nerude	2.4460	0.3208	0.0166	0.4469	0.1999	0.1337	0.0406	0.3608
2014/2015	Nerude	2.4809	0.3375	0.0179	0.4800	0.1940	0.1476	0.0402	0.3062
2015/2016	Nerude	2.5787	0.3343	0.0233	0.5526	0.1690	0.1409	0.0334	0.2572
2016/2017	Nerude	2.6843	0.3058	0.0269	0.5162	0.1668	0.1525	0.0253	0.1845
2017/2018	Nerude	2.5547	0.4385	0.0632	0.6416	0.1626	0.1183	0.0125	0.1026
2018/2019	Nerude	2.5756	0.2743	0.1198	0.6242	0.1589	0.1151	0.0220	0.1525
2019/2020	Nerude	2.4500	0.3628	0.2180	0.6907	0.1627	0.1108	0.0078	0.0559
2020/2021	Nerude	2.9536	0.3123	0.6582	0.5326	0.1226	0.0956	0.0228	0.1867
2021/2022	Nerude	3.0911	0.2976	0.6077	0.6295	0.1404	0.0902	0.0181	0.1584
2022/2023	Nerude	2.9047	0.3243	0.4623	0.8145	0.1411	0.0874	0.0046	0.0383
2013/2014	Nirdhan	2.5833	0.3033	0.0286	0.5214	0.1833	0.1071	0.0337	0.3792

2014/2015	Nirdhan	2.4694	0.3319	0.0150	0.5208	0.1808	0.1091	0.0299	0.3208
2015/2016	Nirdhan	2.3653	0.3609	0.0401	0.4798	0.1777	0.1078	0.0341	0.3671
2016/2017	Nirdhan	1.9550	0.4062	0.0387	0.4388	0.1892	0.1253	0.0373	0.3867
2017/2018	Nirdhan	1.7763	0.4770	0.1418	0.4315	0.1742	0.1215	0.0302	0.3151
2018/2019	Nirdhan	1.7450	0.4990	0.2294	0.3878	0.1749	0.1017	0.0322	0.2904
2019/2020	Nirdhan	1.4907	0.5650	0.3692	0.4609	0.1643	0.1187	0.0109	0.0869
2020/2021	Nirdhan	1.5005	0.5960	0.9756	0.3782	0.1498	0.1262	0.0448	0.3086
2021/2022	Nirdhan	1.4942	0.6138	1.4400	0.4526	0.1396	0.1431	0.0253	0.1621
2022/2023	Nirdhan	1.2720	0.6846	2.3997	0.4641	0.1426	0.1149	0.0061	0.0362
2013/2014	Swalamban	2.4181	0.3302	0.0195	0.4751	0.2170	0.0996	0.0373	0.3913
2014/2015	Swalamban	2.2893	0.3561	0.0867	0.4700	0.2182	0.1062	0.0383	0.3535
2015/2016	Swalamban	2.0706	0.3988	0.0753	0.4052	0.1805	0.0702	0.0424	0.3633
2016/2017	Swalamban	1.9059	0.4224	0.0588	0.5412	0.1712	0.1076	0.0264	0.2440
2017/2018	Swalamban	1.7618	0.4919	0.1052	0.4415	0.1727	0.1086	0.0293	0.2577
2018/2019	Swalamban	1.9222	0.4702	0.1152	0.4731	0.1646	0.0931	0.0266	0.2337
2019/2020	Swalamban	1.6313	0.5468	0.3136	0.4033	0.1667	0.1042	0.0188	0.1513
2020/2021	Swalamban	1.6373	0.5602	0.7926	0.3680	0.1435	0.1087	0.0362	0.2528
2021/2022	Swalamban	1.5561	0.5478	0.7716	0.8887	0.1480	0.1019	0.0128	0.0954
2022/2023	Swalamban	1.4173	0.6452	0.7887	0.5579	0.1698	0.1178	0.0135	0.0875

Appendix I Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic
Loan to Deposit Ratio	50	1.01019	3.37709	2.10848	0.68885
Deposit to Total Assets Ratio	50	0.24294	0.71882	0.44763	0.14109
Non-performing Loan	50	0.00150	2.39966	0.25078	0.43248
Operating Efficiency Ratio	50	0.03878	0.88873	0.46916	0.13023
Interest Rates	50	0.12260	0.21820	0.16814	0.02069
Capital Adequacy Ratio	50	0.05661	0.17442	0.11997	0.02347
Return on Assets	50	0.00465	0.24760	0.03271	0.03284
Return on Equity	50	0.03622	1.62932	0.27546	0.22926
Valid N (listwise)	50				

Appendix II Correlation Analysis

Correlations

		LDR	DTA	NPLs	OER	INTR	CAR	ROA	ROE
LDR	Pearson Correlation	1							
DTA	Pearson Correlation	-.949**	1						
NPLs	Pearson Correlation	-0.260	.374**	1					
OER	Pearson Correlation	.302*	-.343*	0.148	1				
INTR	Pearson Correlation	0.229	-.356*	-.487**	-0.194	1			
CAR	Pearson Correlation	-0.177	0.255	-0.076	-.473**	0.001	1		
ROA	Pearson Correlation	-0.134	0.188	-0.138	-0.268	-0.089	0.258	1	
ROE	Pearson Correlation	-0.163	0.162	-0.244	-0.253	0.012	0.116	0.931**	1

Listwise (N) = 50

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

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

Appendix III Model Summary

Model Summary

	ROA				ROE			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.408[a]	0.167	0.050	0.0320	.399[a]	0.159	0.042	0.2244

a. Predictors: (Constant), Capital Adequacy Ratio, Interest Rates, Loan to Deposit Ratio, Non-performing Loan, Operating Efficiency Ratio, Deposit to Total Assets Ratio

Appendix IV ANOVA Analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	Mean Square	F	Sig.
1	Regression	0.009	6	0.001	1.433	.224[b]	0.410	0.068	1.358	.253[b]
	Residual	0.044	43	0.001			2.165	0.050		
	Total	0.053	49				2.575			

a. Dependent Variable: Return on Assets, Return on Equity

b. Predictors: (Constant), Capital Adequacy Ratio, Interest Rates, Loan to Deposit Ratio, Non-performing Loan, Operating Efficiency Ratio, Deposit to Total Assets Ratio

Appendix V Regression Coefficient

Coefficient of Return on Assets

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-0.032	0.144		-0.221	0.826
	Loan to Deposit Ratio	0.022	0.025	0.456	0.875	0.386
	Deposit to Total Assets Ratio	0.140	0.136	0.603	1.034	0.307
	Non-performing Loan	-0.022	0.013	-0.287	-1.632	0.110
	Operating Efficiency Ratio	-0.035	0.045	-0.138	-0.768	0.447
	Interest Rates	-0.230	0.287	-0.145	-0.802	0.427
	Capital Adequacy Ratio	0.136	0.230	0.097	0.593	0.556

a. Dependent Variable: Return on Assets

Coefficient of Return on Equity

Coefficients

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	0.368	1.012		0.364	0.717
	Loan to Deposit Ratio	0.047	0.174	0.142	0.271	0.788
	Deposit to Total Assets Ratio	0.577	0.952	0.355	0.606	0.548
	Non-performing Loan	-0.197	0.094	-0.372	-2.104	0.041
	Operating Efficiency Ratio	-0.292	0.319	-0.166	-0.916	0.365
	Interest Rates	-1.182	2.009	-0.107	-0.588	0.559
	Capital Adequacy Ratio	-0.545	1.611	-0.056	-0.338	0.737

a. Dependent Variable: Return on Equity

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