EFFECT OF CREDIT MANAGEMENT ON PROFITABILITY OF NEPALESE DEVELOPMENT BANKS IN NEPAL

A Dissertation submitted to the Office of the Dean, Faculty of Management, in partial fulfillment of the requirements for the Master of Business Studies (MBS)

By

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CERTIFICATION OF AUTHORSHIP

I hereby declare that the work reported in this thesis entitled **"EFFECT OF CREDIT MANAGEMENT ON PROFITABILITY OF NEPALESE DEVELOPMENT BANKS IN NEPAL"** has been submitted to office of the Dean, faculty of management, Tribhuvan University is my original work done in the form of partial fulfillment of the requirement for the Degree of Master of Business Studies (MBS) under the supervision and guidance of Associate Professor Suman Kamal Parajuli Shanker Dev Campus.

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June 2024

REPORT OF RESEARCH COMMITTEE

Mr. Pratik Panday has defended research proposal entitled **"*EFFECT OF CREDIT MANAGEMENT ON PROFITABILITY OF NEPALESE DEVELOPMENT BANKS IN NEPAL*"** The research committee has registered the dissertation for further progress. It is recommended to conduct the work as per suggestions and guidance of supervisor Asso. Prof. Suman Kamal Parajuli and submit the thesis for the evaluation and viva voice examination.

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APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled "*EFFECT OF CREDIT MANAGEMENT ON PROFITABILITY OF NEPALESE DEVELOPMENT BANKS IN NEPAL"* presented by Mr. Pratik Panday candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva-voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

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Researcher

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Abbreviations

ANOVA	Analysis of variance
MNBBL	Muktinath Bikash Bank Limited
KSBBL	Kamana Sewa Bikash Bank Limited
GBBL	Garima Bikash Bank Limited
LDR	Loan to deposit ratio
ROA	Return on assets
ROE	Return on equity
DAR	Deposit to Assets Ratio
CDR	Cash and Cash Equivalents to Deposit Ratio
CAR	Capital Adequacy Ratio
LAR	Liquid Assets Ratio
CR	Current Ratio
NPLS	Non-performing Loans
AQ	Asset Quality
LLPR	Loan Loss Provision Ratio
LR	Liquidity Ratio
BS	Bank Size
AQR	Asset Quality Ratio
LER	Leverage Ratio
CRR	Cash Reserve Ratio
CR	Coverage Ratio
FBM	Female Board Members
RS	Risk Sensitivity
NRB	Nepal Rastra Bank
COV/CV	Coefficient of Variation
NEPSE	Nepal Stock Exchange
SPSS	Statistical Package for the Social Sciences

Abstract

This study investigates the effect of credit management on the profitability of development banks in Nepal. Three development banks were chosen as samples from a population of seventeen listed in the Nepal Stock Exchange (NEPSE). Data from the fiscal years 2013/14 to 2022/23 was analyzed using descriptive and explanatory research design. The research questions explored credit efficiency and profitability, the relationship between credit and profitability, and the impact of credit factors on profitability.

The study found a positive correlation between credit management ratios (loan to deposit, deposit to assets, cash and cash equivalent, liquid assets, and current ratio) and return on equity (ROE), indicating a positive relationship between credit management and profitability. However, the correlation analysis did not reveal a statistically significant relationship between credit ratios and ROE. This suggests that while credit management practices might be positively associated with profitability, the sample credit ratios used in this study do not significantly impact profitability.

The study concludes that proper credit management is crucial for development banks to generate desired returns. However, other factors beyond the scope of this study also influence profitability. Further research using a larger sample size and incorporating additional data sources like primary data through questionnaires is recommended. This study provides valuable insights for development bank management teams and investors, aiding them in decision-making regarding credit management practices and their impact on profitability.

Keywords: Credit Management, Profitability, Development Banks (Nepal), Credit Ratios (Loan to Deposit, Deposit to Assets, Cash & Cash Equivalent, Liquid Assets, Current Ratio), Return on Equity (ROE).

CHAPTER 1: INTRODUCTION

1.1 Background of Study

In today's challenging business environment, characterized by intense competition, economic volatility, increasing default rates, and rising levels of debt, effective monitoring and management of credit risk are crucial for the success and survival of organizations (Altman, 2002). The banking industry has witnessed significant losses over the past decade, with previously well-performing firms suddenly experiencing substantial losses due to souring credit exposures, interest rate positions, or derivative exposures that were intended to hedge balance sheet risks (Santomero, 1997). In response to these challenges, Development banks across the board have prioritized the enhancement of their risk management and control systems.

Development banks, given the nature of their business, are exposed to the risk of default from borrowers. Prudent credit risk assessment and the establishment of adequate provisions for bad and doubtful debts are essential for mitigating the banks' risks. However, when the level of non-performing loans (NPLs) becomes excessively high, the provisions may not provide sufficient protection (Gupta, 1998). Credit risk, which arises from the potential default of borrowers in making required payments, is one of the most significant risks faced by banks. Since extending credit is a primary source of income for Development banks, the management of credit risk directly impacts their profitability (Li & Zou, 2014). Effective credit risk management is essential for banks because it directly impacts their financial health, stability, and ability to grow.

Credit risk can be defined as the losses incurred when credit customers fail to fully and timely repay what they own. It primarily arises from direct lending and off-balance-sheet products such as guarantees, letters of credit, foreign exchange transactions, forward contracts, and derivatives, as well as from holding debt securities. Credit risk may manifest as delivery or settlement risk and is critical for the survival or failure of banks since they traditionally generate substantial profits from their risk exposures. Effective credit risk management is a critical component of comprehensive risk management and is vital for the long-term success of Development banks.

In Nepal, Development banks hold a significant proportion of the financial sector's total assets. Like banks in other countries, their primary function is to extend credit, which enables them to increase their profits. However, it is important to note that banks differ from one another in terms of their objectives, products, and the services they provide. In their day-to-day operations, banks face various risks, including credit risk, liquidity risk, interest rate risk, mismatch risk, market liquidity risk, market risk, and foreign exchange risk (Bessis, 2011). Among these risks, credit risk plays a significant role in the financial performance of banks, considering that a large portion of their income comes from interest earned on loans provided to customers (Kolapo, 2012).

According to Kithinji (2010), the primary causes of credit risk are weak institutional capacity, unsuitable credit policies, unstable interest rates, poor management, insufficient legislation, low capital and liquidity levels, direct lending, extensive bank licensing, poor loan underwriting, loose credit assessment, bad lending practices, government intervention, and inadequate central bank supervision. The progressive escalation of bank credit risk results in issues with liquidity and solvency. An increase in bank credit risk gradually leads to liquidity and solvency problems.

Credit risk management encompasses the identification, measurement, monitoring, and control of credit risk arising from the possibility of defaulting in loan payments. By effectively managing credit risk exposure, banks not only support the viability and profitability of their own business but also contribute to systemic stability and the efficient allocation of capital in the economy. Kargi (2011) argues that credit risk management maximizes banks' risk-adjusted rate of return by maintaining credit risk exposure within acceptable limits, providing a framework for understanding the impact of credit risk management on banks' profitability. Moreover, a bank's profitability is inversely influenced by the levels of loans and advances, non-performing loans, and deposits, which expose them to significant liquidity and distress risks.

Credit risk management in the banking sector is crucial not only due to the global financial crisis experienced in recent years but also because of its significant impact on a bank's financial performance, growth, and survival. Following the global financial crisis of 2007-2008, credit portfolio management has become one of the most critical functions for banks and financial institutions. Basel III, the third installment of the Basel Accord, was developed after the crisis to strengthen bank capital requirements by increasing liquidity and decreasing leverage, thereby encouraging banks to measure the

credit risk of their portfolios. The Basel Committee also raised concerns regarding the application of risk weights used in the capital adequacy framework for determining exposure to risk assets and large credit exposures (Morris, 2001).

Development banks in all countries are subject to numerous regulations aimed at stabilizing the economy. However, regulating transnational financial institutions effectively requires cooperation between countries due to the global contagion of financial risks and differences in regulatory approaches. Implementing robust credit risk management practices helps Development banks avoid significant drawbacks and improves their financial performance. A strong banking performance not only rewards shareholders but also encourages additional investment and fosters economic growth. In contrast, poor banking performance can lead to failure and crises, negatively impacting economic growth.

Profitability is the primary objective of Development banks, as it ensures their long-term survival. When banks are profitable, they create a more robust financial system, able to withstand economic blows. Changes in the operating environment, particularly related to credit risk, are likely to affect bank profitability. Empirical analysis shows that both bank-specific factors and macroeconomic factors are important determinants of bank profitability.

In Nepal, modern banking started with the establishment of Nepal Bank Ltd. in 1937 A.D., followed by the establishment of Nepal Rastra Bank, the central bank of Nepal, in 1957 A.D., and Rastriya Banijya Bank in 1966 A.D. With the liberalization of the economy in the 1980s, joint venture banks began operating in Nepal, starting with NABIL Bank Ltd. (formerly known as Nepal Arab Bank Ltd.) in 1984 A.D. The growth of the banking industry in Nepal since 1984 A.D. has also introduced increased risks in the banking sector. All banks have faced credit risk, particularly the non-payment of loans by borrowers. Nepal Bank Limited and Rastriya Banijya Bank have been significantly affected by such risks, leading to negative net worth. Therefore, this study focuses on the impact of credit risk management on the profitability of Development banks.

1.2 Statement of the Problem

In Nepal, the banking industry is recognized as one of the rapidly growing sectors. The adoption of liberalization policies by the government has led to a significant expansion of this sector. However, due to political instability, the government has been unable to dedicate sufficient attention to the banking industry. Consequently, the regulation, supervision, and monitoring of the banking sector, like other sectors, have been weakened, and non-business practices may have taken place. These non-business practices can directly and indirectly hamper the sector, affecting its overall activities. Development banks in Nepal, in particular, face various challenges and problems, especially concerning lending loans and advances. The lending issue has been exacerbated by the country's economic conditions, changes in government policies, and defaulting borrowers. Despite Nepal's transition to a liberal economy and its involvement in the World Trade Organization, the banking sector has not fully capitalized on the opportunities or advantages presented.

Studies conducted in other countries have demonstrated a positive relationship between credit risk management and bank profitability. For instance, Muhammed and Garba (2014) found a positive association between credit risk management and the profitability of banks in Sweden. Saeed and Zahid (2016) also revealed that credit risk indicators were positively associated with bank profitability. In Nigeria, Gobio and Unuafe (2013) discovered that sound credit risk management and capital adequacy had a positive impact on the financial performance of banks, except for loans and advances, which negatively affected profitability.

Choosing appropriate credit management strategies and achieving profitability is a crucial strategic financial decision for any firm. Proper diversification and portfolio management are essential for the long-term survival of the banking industry. Additionally, the cost of loan assessment and management can be minimized if loans are priced appropriately considering the associated risks. Therefore, effective management of loans and advances significantly impacts profitability. This includes establishing an appropriate loan risk environment, implementing a sound loan granting process with supporting procedures, and maintaining suitable credit administration, measurement, and monitoring processes. Thus, examining the effect of credit management on bank profitability in Nepal is crucial for assessing the industry's current situation.

To address this, the following questions have been raised:

- What is the present scenario of credit management and profitability position of development banks in Nepal?
- Is there a relationship between credit management and profitability in development banks in Nepal?
- What is the impact of credit management on the profitability of development banks in Nepal?

1.3 Objectives of Study

The general objective of this study is to examine the effect of credit management on bank profitability of development banks of Nepal, with an emphasis on the performance of the business operation of banks. The objectives of the study are as follows.

i. To analyze the actual credit efficiency and profitability of development banks.

ii. To examine the relationship between credit and profitability of banks.

iii. To analyze the impact of credit ratio on the profitability of banks.

1.4 Significance of Study

The significance of the study is theoretical as well as practical or applied. The contribution of this study is to address the basics of the stated problem. In addition, the researcher attempts to provide solutions to the abovementioned questions. Some of the significances are as follows.

•This study helps to provide information regarding the composition of credit based on profitability.

•This study has a significant role to play in filling gaps in understanding the effect of credit decisions on profitability of MBBL, GBBL and KSBBL.

•Enable the bank and borrowers to develop and implement a good credit worthiness system to minimize risk associated with non-performing loans.

•It is also hoped that this study may be able to address the effect of credit management on the profitability of the banks.

•This study will be useful for researchers and students and for those who want to have further study in detail about the effect of credit management on bank profitability. Similarly, this study may be fruitful to financial institutions also.

1.5 Limitations of the Study

The study has included the following limitations:

- There is only a small sample so that the research might not generalize the entire population of development banks.
- The study is limited to only three development banks, thus may not represent the whole banking industry of Nepal.
- This study concentrates only on credit management and ignores the other financial aspects.
- In this study, only simple financial and statistical tools as well as techniques are used while analysis of data.
- The reliability of the secondary data highly depends on the accuracy of the annual report of the sample banks.
- In this study, descriptive and analytical methods are used to analyze data.

CHAPTER 2: LITERATURE REVIEW

This section of the study focuses on the existing literature relevant to the research, forming the foundation of knowledge for the study. The literature review involves examining the available literature in the specific field of research. This chapter provides a brief overview of previous studies on the influence of credit risk management on a bank's profitability. These studies were conducted at various times and produced diverse findings. In the case of Nepal, there is a lack of adequate research on credit risk management. Nevertheless, certain articles and journals related to the stock market were consulted and reviewed.

2.1 Conceptual Review

2.1.1 Meaning of Risk

Risk refers to the element of uncertainty that investors face when making investments. It encompasses the potential for actual outcomes to differ from expected outcomes. Risk can be understood as the likelihood of the actual return deviating from the anticipated return. According to Kupper (2000), risk can also be defined as the volatility of a corporation's market value.

Risk management, on the other hand, involves a systematic process of evaluating and assessing risk, followed by the development of strategies to effectively manage and mitigate those risks. This process typically includes several approaches, such as transferring the risk to another party, avoiding the risk altogether, reducing the negative impact of the risk, or accepting some or all of the consequences associated with a specific risk. In essence, risk management aims to proactively address and control potential risks to ensure the overall well-being and success of an investment or business venture.

2.1.2 Bank Risk

Risk and uncertainty are essential components of the banking industry. Risks represent the uncertainties faced by banks, which, if not effectively managed, can lead to financial losses and even bankruptcy. Risk can be understood as the likelihood that actual outcomes will deviate from the expected values or predictions. According to the Basel Accord, banks face three primary types of risks: credit risk, market risk, and operational risk.

In the banking sector, there are several inherent risks that can be broadly classified into these three categories. Credit risk, which arises from lending activities, is the most significant risk, accounting for approximately 60% of the total risk portfolio. Therefore, this study primarily focuses on credit risk. However, brief introductions to market risk and operational risk have also been included to provide a comprehensive overview.

Credit risk is the risk of borrowers failing to fulfill their obligations, resulting in potential losses for the bank. It encompasses the possibility of loan defaults, payment delays, or deteriorating creditworthiness of borrowers. Effective credit risk management is crucial for banks to assess the creditworthiness of borrowers, establish appropriate lending terms, and monitor loan portfolios to mitigate potential losses.

Market risk refers to the potential losses arising from fluctuations in market variables, such as interest rates, exchange rates, commodity prices, and equity prices. Banks are exposed to market risk due to their involvement in various financial activities, including trading and investment activities. Managing market risk involves implementing strategies to mitigate the adverse effects of market volatility on a bank's financial position.

Operational risk encompasses the risks associated with a bank's internal processes, systems, and human factors. It includes risks arising from inadequate internal controls, technological failures, fraud, errors, and legal and regulatory compliance. Effective operational risk management involves identifying, assessing, and implementing controls and procedures to mitigate operational risks and ensure smooth operations within the bank.

These are the major sources of risk in the banking industry, and understanding and managing them are crucial for the sustainable operation and profitability of banks. By identifying and addressing these risks, banks can safeguard their financial stability, protect their assets, and maintain the trust and confidence of their stakeholders.

I. Credit Risk

Credit risk refers to the potential of a borrower or counterparty failing to fulfill their payment obligations as per the agreed terms and conditions. Anthony Saunders defines credit risk as the risk that the expected cash flows from loans and securities held by financial institutions may not be fully paid. It encompasses the inability or unwillingness of customers or counterparties to meet their commitments related to lending, trading, hedging, settlement, and other financial transactions.

Santomero (1997) distinguishes credit risk into two main components: transaction risk (or default risk) and portfolio risk. Transaction risk relates to the risk of individual defaults or non-performance, while portfolio risk considers the overall risk arising from a collection of loans or assets. Portfolio risk can further be divided into intrinsic risk and concentration risk.

The portfolio risk is influenced by both external and internal factors. External factors include the state of the economy, fluctuations in commodity/equity prices, foreign exchange rates, interest rates, trade restrictions, government policies, and other macroeconomic conditions. Internal factors involve deficiencies in loan policies and administration, the absence of prudent credit concentration limits, inadequately defined lending limits for loan officers or credit committees, shortcomings in assessing borrowers' financial positions, excessive reliance on collateral without adequate risk pricing, and the lack of mechanisms for loan review and post-sanction surveillance.

Counterparty risk is another variant of credit risk. It arises from the non-performance of a trading partner. Non-performance can occur when a counterparty refuses to fulfill their obligations due to adverse price movements caused by systematic factors or unexpected political or legal constraints. Diversification is a key approach to mitigate non-systematic counterparty risk.

The objective of credit risk management is to maximize a bank's risk-adjusted rate of return by keeping credit risk exposure within acceptable limits. This involves managing credit risk across the entire portfolio as well as assessing the risk associated with individual credits or transactions. Banks must also consider the interrelationships between credit risk and other types of risks. Effectively managing credit risk is a crucial aspect of comprehensive risk management and is vital for the long-term success of any banking institution.

II. Market Risk

Market risk refers to the potential for financial losses arising from changes in interest rates, exchange rates, and other asset prices during the trading of assets and liabilities. It represents the exposure to the uncertain market value of a firm's assets. There are several major factors that contribute to market risk:

i. Liquidity Risk: Liquidity risk refers to the possibility of not being able to buy or sell assets or liabilities quickly and at a fair price in the market. It arises when there is insufficient market depth or trading volume for a particular asset or when there are constraints on the ability to convert assets into cash without significant loss.

ii. Interest Rate Risk: Interest rate risk arises from fluctuations in interest rates and affects the value of fixed-income securities, such as bonds. Changes in interest rates can impact on the prices of these securities, leading to potential gains or losses for investors. For example, when interest rates rise, the value of existing bonds typically decreases, while falling interest rates tend to increase bond values.

iii. Foreign Exchange Risk: Foreign exchange risk, also known as currency risk, emerges from the volatility in exchange rates between different currencies. It affects companies engaged in international trade or with exposure to foreign currencies. Fluctuations in exchange rates can impact on the value of assets or liabilities denominated in foreign currencies, potentially leading to gains or losses.

These factors contribute to the overall market risk faced by financial institutions, investment firms, and other market participants. Proper risk management practices, such as diversification, hedging, and active monitoring of market conditions, are essential to mitigate the potential adverse effects of market risk. Market risk assessment and control play a crucial role in ensuring the stability and profitability of financial institutions and investment portfolios.

i. Liquidity Risk

Liquidity risk refers to the situation where financial institutions face difficulties in meeting payment obligations because their available assets are long-term and can only be converted quickly at the expense of capital loss (Burton, 2015). This scenario can occur when depositors unexpectedly withdraw their funds, making it challenging to obtain additional deposits.

In the banking sector, liquidity risk arises from the mismatch between the maturity of assets and liabilities held by banks. Having extremely illiquid assets can lead to bankruptcy, while holding excess liquid assets may expose the bank to interest rate risk over time. Given the potentially severe consequences of liquidity risk, prudent liquidity management becomes a primary function of the banking sector.

Effective liquidity management aims to ensure that the necessary funds are available to cover expected shortfalls at a reasonable cost. It involves investing excess funds in a manner that generates reasonable returns without subjecting the bank to undue interest rate risk.

It is worth noting that while the concept of liquidity risk remains relevant, there may be additional developments, practices, and regulations related to liquidity risk management in the banking sector. It is always advisable to consult up-to-date scholarly sources and industry publications for the most recent insights and information on liquidity risk management in the banking sector.

ii. Interest Rate Risk

Interest rate risk refers to the risk faced by a financial institution when there is a mismatch between the maturities of its assets and liabilities. It represents the probability of a decline in earnings due to adverse movements in interest rates across various markets. The interest earned in assets and liabilities, as well as the net interest margin, are dependent on market variables, which can change rapidly or gradually based on market conditions.

Fluctuations in interest rates can have a significant impact on a bank's net interest income, particularly when there is a mismatch between the durations of its assets and liabilities. Changes in interest rates can lead to variations in the market value of a bank's equity as well.

It is important to note that interest rate risk management is a critical aspect of financial institutions' operations, and they employ various strategies to mitigate this risk. These strategies may include actively managing the composition and duration of their asset and liability portfolios, using interest rate derivatives for hedging purposes, and closely monitoring and assessing interest rate movements.

It is recommended to refer to current literature and industry publications for the latest insights and developments regarding interest rate risk management in financial institutions, as practices and approaches may evolve over time.

iii. Foreign Exchange Risk

Foreign exchange risk refers to the potential impact of changes in exchange rates on the value of a bank's assets and liabilities denominated in foreign currencies. Banks face this risk due to the mismatch in maturity between their foreign currency positions. Additionally, in foreign exchange transactions, banks are exposed to the risk of counterparties defaulting or settlement risk.

When counterparties default or fail to settle transactions, it may not result in principal loss, but it can necessitate the bank to engage in new transactions in the cash or spot market to replace the failed transactions. As a result, the bank may incur replacement costs, which are influenced by movements in currency rates.

Managing foreign exchange risks is crucial for banks operating in international markets. They employ various risk management techniques, such as hedging through derivatives, to mitigate potential losses arising from exchange rate fluctuations. By hedging their foreign currency positions, banks aim to reduce their exposure to adverse movements in exchange rates and protect the value of their assets and liabilities denominated in foreign currencies.

It is important for banks to have robust risk management practices in place to monitor and mitigate foreign exchange risk. This includes closely monitoring exchange rate movements, assessing counterparties' creditworthiness, and implementing appropriate hedging strategies. Keeping abreast of the latest developments in foreign exchange markets and regulations is essential for effective management of foreign exchange risk.

III. Operational Risk

Operational risk is associated with challenges in accurately processing, settling, and executing trades for cash, as well as issues related to record keeping, system failures, and compliance with regulations. The Basel Committee on Banking Supervision defines operational risk as the potential for loss resulting from internal process failures, human errors, system breakdowns, or external events.

Operational risk arises from deficiencies in control systems, operational problems, breaches in internal controls, fraud, and unexpected catastrophes that lead to unanticipated losses for a bank. Various functions within a bank, such as regulatory compliance, financial management, fraud prevention, information technology, legal matters, and insurance, involve human resources and can contribute to operational risk (Leippoldy, 2003).

While banks face multiple risks, credit risk holds significant importance as it directly impacts a bank's profitability. When a bank fails to receive interest payments on loans from borrowers, it experiences a decline in interest income, which negatively affects profitability. In cases of default, the principal amount becomes crucial since it represents accumulated funds from numerous depositors. Banks typically secure their loan amounts through collateral and various recovery options. However, the loss of the principal amount creates additional burdens for recovery, and in many instances, the bank does not fully recover the defaulted amount, directly impacting profitability.

This study primarily focuses on credit risk in banks and its influence on the profitability of commercial banks. By examining the relationship between credit risk and bank profitability, the aim is to gain insights into how credit risk management practices can enhance financial performance in the banking industry.

2.1.3 Credit Risk Management

Credit risk management is a crucial aspect of a comprehensive risk management approach and is vital for the long-term success of banks. It involves various approaches to effectively manage the multidimensional task of managing credit risk. Aduda (2011) defines credit risk management as a structured approach that encompasses risk assessment, risk mitigation using managerial resources, and the development of strategies such as risk transfer, risk avoidance, reducing the negative impact of risk, or accepting the consequences of specific risks. Similarly, Bielecki (2013) explains that

credit risk management can involve techniques like hedging defaultable claims, integrating risks, and portfolio management.

Santomero and Babbel (1997) have outlined some fundamental principles for managing credit risk, which include:

a. Standard setting and financial reporting: Establishing standards and implementing effective financial reporting practices to accurately assess and monitor credit risk.

b. Underwriting authority and loan limits: Defining clear guidelines and limits for underwriting loans, ensuring proper evaluation of borrowers' creditworthiness, and setting limits on loan exposure.

c. Investment guidelines or strategies: Developing guidelines or strategies for making credit investments, considering factors such as risk appetite, diversification, and return expectations.

d. Incentive schemes: Implementing appropriate incentive schemes to align the interests of employees with the bank's risk management objectives, encouraging prudent credit decisions and risk mitigation practices.

These principles provide a framework for banks to effectively manage credit risk and ensure sound risk management practices throughout their operations.

2.1.4 The Credit Risk Management Process

Efficient credit management necessitates the skillful and effective management of customer credit lines. In order to minimize exposure to bad debt, excessive reserves, and bankruptcies, banks must have a deeper understanding of customers' financial strength, credit history, and evolving payment patterns. It is crucial to critically evaluate customers' ability to enter new markets, make well-informed credit decisions promptly, and establish appropriate credit limits. Credit management begins with the sale and continues until the full and final payment is received (Haron et al., 2012).

The process of credit risk management, as outlined by Sinkey (2002), involves the following stages:

a. Identification:

The first stage in risk management is identification. Risk identification begins from the initiation of the credit facility and involves identifying and defining potential risks associated with the transaction. This stage requires examining the impact on the portfolio and capital requirements, with credit and risk officers playing a crucial role.

b. Measurement:

The second stage focuses on measuring the identified risks to determine the severity of potential losses if the loan defaults. This entails quantifying the extent of loss based on financial and non-financial criteria, often through probability analysis and experience. While it may not be a straightforward task, it provides valuable insights for risk management. Consistency and practicality in the assumptions made during risk measurements are essential.

c. Pricing:

The third stage involves pricing the measured risks to assess the potential extent of loss in terms of material and financial impact. Pricing risk requires banks to maintain capital based on risk weight, as per regulatory requirements. This necessitates factoring in capital costs, operating expenses, and loss probabilities while determining the pricing of risk.

d. Monitor and control:

The fourth stage of the risk management process is monitoring the risk's state and direction. If the risk is moving unfavorably, control measures are implemented. These control alternatives, as mentioned by Afriyie and Akotey, (n.d.), Gestel and Baesens (2008, p.43), include risk avoidance, risk reduction, risk acceptance, and risk transfer. Risk avoidance involves avoiding risky investments and opting for less risky transactions. Risk reduction involves mitigating the impact of financial loss through appropriate derivative instruments. Risk acceptance or retention entails assuming and managing the risk internally. Risk transfer involves transferring the risk to other institutions such as insurance companies and banks. Outsourcing risky tasks is another method of transferring risk.

These stages provide a structured approach to credit risk management, allowing banks to effectively navigate credit-related challenges and safeguard their financial stability.

2.1.5 Credit Risk Management Strategies

The credit risk management strategies encompass the procedures adopted by banks to mitigate or reduce the negative impact of credit risk. Establishing a comprehensive credit risk management framework is crucial for enhancing revenue and ensuring the survival of banks. The fundamental principles guiding credit risk management strategies are as follows: clear organizational structure, delegated authorities, discipline, effective communication at all levels, and accountability (Kolapo et al., 2012).

Credit risk management strategies are implemented by banks to prevent or minimize the adverse effects of credit risk. A robust credit risk management framework, as mentioned earlier, is essential for banks to enhance profitability and ensure their long-term viability. The key principles in the credit risk management process can be outlined as follows:

a. Selection:

A sound credit risk management process begins with the careful selection of borrowers and appropriate products that suit their needs. Competent loan officers and dependable risk estimation models are essential components at this stage. Decisions are made collectively by the committee members, and borrowers who are likely to default may be denied credit or required to provide additional collateral to mitigate the risk of default.

b. Limitation:

This method aims to reduce the potential losses incurred by a borrower. By limiting exposure, banks safeguard their financial performance from the adverse effects of a counterparty's failure to meet obligations. Risker transactions are minimized to a great extent.

c. Diversification:

Banks should engage with a diverse range of counterparties, including individuals and various industries. This practice helps spread the risk across different borrowers, allowing banks to mitigate the impact of potential losses. Diversification is particularly effective for larger and international banks, as it enables them to manage credit risk through risk spread (Gestel et al., 2009).

d. Credit Enhancement:

When a bank recognizes excessive risk exposure associated with a specific type of borrower, it can acquire an insurance policy to cover potential future losses. This approach, known as credit risk mitigation, improves the quality of the loan portfolio (Gestel et al., 2009).

e. Compliance with Basel Accord:

The Basel Committee on Banking Supervision provides guidelines for banks to manage their exposure to credit risk. These guidelines emphasize the need for banks to constantly review and adapt their credit risk policies to align with prevailing economic conditions. This can involve introducing new products and services. Additionally,

banks should conduct thorough investigations of their borrowers to gain a better understanding of the customers they are dealing with (Basel Committee on Banking Supervision, 1999). Although these strategies do not completely eliminate credit risk, they can effectively reduce the level of exposure, thereby enhancing banks' profitability. In summary, effective credit risk management strategies help address critical issues such as lack of credit discipline, credit concentration, aggressive underwriting, and inadequate pricing. By implementing these strategies, banks can mitigate risks and improve their overall performance (Gestel, 2009).

2.1.6 Profitability

According to Bessis (2005), profit is defined as the surplus that remains after deducting expenses from revenue. It serves as a measure of financial gain obtained by a company. Profitability, on the other hand, refers to the ongoing ability of a company to generate profit. Profitability is commonly expressed in monetary terms, such as in shillings.

To assess a company's overall efficiency and performance, profitability ratios are utilized. These ratios can be categorized into two types: margins and returns. Margins reflect the company's capacity to convert sales revenue into profits at various stages of measurement. In other words, they indicate how effectively the company manages its costs and generates profit from its sales. Returns, on the other hand, provide insight into the company's overall efficiency in generating returns for its shareholders. These ratios evaluate the company's ability to utilize its resources and investments effectively to generate profits.

By analyzing profitability ratios, stakeholders can gain valuable insights into the financial performance and effectiveness of a company. It allows for comparisons across different periods or with industry benchmarks, providing a comprehensive view of the company's financial health.

2.1.7 Profitability of Development Bank

In the development banking sector, profitability refers to the ability of a bank to generate earnings relative to its expenses and costs incurred over a specific period. It demonstrates the bank's capacity to manage associated risks while increasing its capital. Profitability also reflects the effectiveness of management and competitiveness among development banks. There are various measures used to assess profitability, including return on capital employed, return on assets, return on equity, net profit margin, cost of income ratio, net interest margin, risk-adjusted return on capital, price-earnings ratio,

total share return, return on invested equity, and cash flow to assets, among others. However, according to Brealey (2012), the key measures of profitability for development banks are return on assets (ROA), return on equity (ROE), and net profit margin.

Profitability plays a crucial role for development banks, as one of their primary objectives is to increase profitability (Duffie, 2012). All activities within a bank have a direct or indirect impact on its profitability. The determinants of a bank's profitability can be broadly categorized into two groups: internal determinants and external determinants, as suggested by Staikouras (2011). Internal determinants are influenced by the decisions and policy objectives of bank management, which are within their control. These determinants encompass the sources and uses of capital, liquidity management, and expense management within the bank. External determinants, on the other hand, refer to factors beyond the bank's control. These external factors, such as regulations and market conditions, can influence management decisions. While this study primarily focuses on internal determinants to examine the impact of credit risk management on the profitability of development banks, it also considers certain external determinants that may be influenced by regulatory factors.

2.2 Empirical Review

2.2.1 Review of Journal Articles

In the banking industry, profitability refers to a bank's ability to generate earnings in comparison to its expenses and costs incurred during a specific period. It demonstrates the bank's capacity to manage associated risks while increasing its capital. Moreover, it indicates the effectiveness of management and competitiveness among banks. Various measures determine a bank's profitability, such as return on capital employed, return on assets, return on equity, net profit margin, cost of income ratio, net interest margin, risk-adjusted return on capital, price-earnings ratio, total share return, return on invested equity, and cash flow to assets, among others. However, according to (Brealey, 2012, the most significant measures of bank profitability are the return on assets (ROA), return on equity (ROE), and net profit margin.

Profitability is a crucial factor for banks as one of their primary objectives is to increase their profitability (Duffie, 2012). All activities within a bank directly or indirectly affect its profitability. To determine bank profitability, there are several categories in the

literature, broadly categorized into two groups: internal determinants and external determinants (Staikouras, 2011). Internal determinants are influenced by bank management decisions and policy objectives under their control. They reflect the sources and uses of capital in the bank, liquidity management, and expense management. On the other hand, external determinants refer to factors outside the bank's control. Although this study primarily focuses on internal determinants, it aims to examine the impact of credit risk management on a development bank's profitability. Nevertheless, some credit-related factors, such as the amount of non-performing loans, are beyond management's control. Additionally, some management decisions are influenced by external regulations, so some external determinants are also included in the model specification.

Researchers Ebenezer and Wan Omar (2015) conducted an analysis of credit risk's effect on the profitability of commercial banks in Nigeria using secondary data from eight selected commercial banks (SIBs) during the period 2011-2014. Their study utilized panel data analysis and considered return on equity as the indicator of profitability, while credit risk management was assessed using total debt to total asset ratio, non-performing loan ratio, and total debt to total equity ratio. The results showed a negative and significant relationship between the non-performing loan ratio and profitability, a negative and insignificant relationship between debts to total assets ratio and profitability, and a positive and insignificant relationship between debts to equity ratio and profitability during the study period.

Another study by Zahid and Saeed (2016) focused on analyzing the impact of credit risk on the profitability of five major UK commercial banks during the financial crisis. They considered return on assets (ROA) and return on equity (ROE) as profitability indicators and net charge-off (or impairments) and non-performing loans as credit risk indicators. The study revealed that credit risk indicators had a positive association with bank profitability, indicating that despite the effects of the credit crisis in 2008, UK banks were taking credit risks and benefiting from interest rates, fees, and commissions.

Muhamet and Arbana (2016) investigated the effect of credit risk management on bank profitability in Kosovo using secondary data. They used return on equity as a profitability indicator and non-performing loan ratio and risk asset ratio as credit risk management indicators. The study found a substantial relationship between these

variables, with a higher risk asset ratio resulting in a marginal decline in profitability, while higher non-performing loans had a positive and more significant effect.

Ndoka and Islami (2016) examined the relationship between credit risk management and profitability of Albanian commercial banks during the period 2005 to 2015. Their study used Return on Equity (ROE), Return on Assets (ROA), Non-performing Loans Ratio (NPLR), and Capital Adequacy Ratio (CAR) as indicators. The results of the regression analysis indicated that there was no statistically significant correlation between CAR and ROA or ROE. However, there was a negative correlation between NPLR and both ROA and ROE, which was statistically significant. This suggests that a higher NPLR had a detrimental effect on the profitability of Albanian commercial banks.

Annor and Obeng (2017) assessed the impact of credit risk management on the profitability of six selected commercial banks listed on the Ghana Stock Exchange. They collected secondary data from annual reports and the Ghana banking survey for the years under consideration. The study employed the Random Effect Model within the panel estimation technique framework. The findings showed that credit risk management had a significant relationship with bank profitability. Specifically, the capital adequacy ratio (CAR) had a positive relationship with profitability, while non-performing loans, loan loss provisions ratio, and loan-to-asset ratio had statistically significant negative relationships with profitability. The study recommended that banks should actively assess and manage credit risk indicators to reduce their exposure to risks.

Nwanna and Oguezue (2017) investigated the nexus between credit management and the profitability of Deposit Money Banks in Nigeria for the period 2006 to 2015 using secondary data. They considered Return on Assets (ROA), Return on Equity (ROE), Loans and Advances, Loan Loss Provision, and Non-performing Loan Ratio (NPLR) as indicators. The study employed multiple regression analysis and found that loans and advances and loan loss provisions had a positive but insignificant effect on profitability, while non-performing loans had a negative and significant impact on profitability. The overall estimates of the regressions showed a good fit and were statistically adequate, leading to the conclusion that sound credit management enhances profitability and strengthens the financial position of deposit money banks.

Wireko and Forson (2017) analyzed the effect of credit risk management on the profitability of selected rural banks in the Upper East Region of Ghana using secondary data for the period 2010 to 2015. Panel least squares regression models were estimated, and the results indicated that the non-performing loan ratio (NPLR) was a key determinant of profitability. Bank-specific variables such as bank size and inflation were not major determinants of bank profitability, suggesting that other factors, such as management efficiency and effectiveness in asset and liability administration, income, and expenditure, play a more significant role. The study recommended that rural banks implement appropriate credit management policies to build high-quality loan portfolios with minimized non-performing loans and improve credit risk management to maintain profitability.

Bassi (2018) investigated the effect of non-performing loans (NPLs) on the profitability of major banks listed on the Ghana Stock Exchange using panel regression analysis. The study used secondary data spanning from 2006 to 2015. The findings revealed a negative impact of NPLs on bank profitability, indicating that higher NPLs had a detrimental effect. However, the capital adequacy ratio (CAR) showed a significant positive relationship with profitability. Bank size also exhibited a positive relationship with profitability. These findings suggest that credit risk management, particularly through increased capital adequacy requirements, can enhance profitability in banks.

Singh and Sharma (2018) analyzed the impact of credit risk on the profitability of twenty-six public sector banks using multiple regression analysis. They found a significant and positive relationship between return on assets (ROA) and capital adequacy ratio (CAR) and net charge-offs, while ROA and non-performing loan ratio (NPLR) had a negative relationship. NPLR was identified as the most critical predictor of profitability among the credit risk indicators studied. The study suggested that banks should focus on credit risk management to reduce non-performing loans and achieve maximum profitability.

Yousuf and Felfoldi (2018) investigated the effect of credit risk management on profitability in private banks in Syria. They used the capital adequacy ratio and non-performing loans as measures of credit risk and return on equity (ROE) as a measure of profitability. The study analyzed secondary data using descriptive and statistical analysis. The research revealed a statistically significant relationship between capital

adequacy and profitability, with the capital adequacy ratio negatively affecting profitability. However, non-performing loans did not significantly impact profitability.

Ali and Dhiman (2019) analyzed the impact of credit risk management indicators on the profitability of public sector commercial banks for the period 2010-2017 using a panel regression model. Their study focused on the top ten public sector commercial banks based on total assets. The findings indicated that return on assets (ROA) was positively related to capital adequacy ratio (CAR), management quality, and earnings ability. Conversely, ROA had a negative relationship with asset quality (AQ) and liquidity. The study concluded that the independent variables significantly impacted the profitability of the sampled public sector banks during the study period.

Fred Nelson (2020) investigated the effect of non-performing loans on the profitability of BGFI Bank Congo using statistical and financial tools. The study found that non-performing loan ratio (NPLR), capital adequacy ratio (CAR), and loan loss provision ratio (LLPR) had a negative impact on return on equity (ROE), indicating that these ratios adversely affected profitability. However, the study revealed a positive relationship between the ratio of client loans and short-term financing (RCLSTF) and ROE. The study also highlighted the significance of other credit risk management indicators, such as loan loss provision ratio (LLPR) and clean capital adequacy ratio, on the bank's profitability.

Alshiqi and Sahiti (2020) analyzed the dependence of bank profitability on credit risk management, focusing on commercial banks in the Western Balkans. Their research included 45 banks in the Balkan countries over six years (2013-2019). The results showed a positive effect of the non-performing loan ratio (NPLR) on return on equity (ROE) and return on assets (ROA), indicating that a higher NPLR was associated with increased profitability. However, the capital adequacy ratio (CAR) showed a positive relationship with ROE without statistical significance. The study suggested that banks should focus on effective credit risk management to optimize profitability.

Overall, these studies highlight the significance of credit risk management in determining the profitability of commercial banks. Credit risk indicators, such as non-performing loan ratios, capital adequacy ratios, and loan loss provisions, play crucial roles in shaping bank profitability. Effective credit risk management practices can enhance profitability and reduce the negative impact of credit risks on bank performance.

2.2.2 Review of Previous studies in Nepalese context

In Poudel's (2012) study, the impact of credit risk management on the financial performance of commercial banks in Nepal was assessed by examining parameters such as the default rate, cost per loan, and capital adequacy. The study utilized descriptive, correlation, and regression analyses to analyze 11 years of financial reports (2001-2011). The findings revealed that the default rate was the most significant predictor of the bank's financial performance.

Bhattarai (2014) conducted a study to examine the effect of credit risk on the performance of Nepalese commercial banks. The study utilized pooled data from fourteen commercial banks in Nepal, covering the period from 2010 to 2015, resulting in a total of 77 observations. The independent variables included in the analysis were capital adequacy ratio, non-performing loan ratio, cost per loan assets, cash reserve ratio, and bank size, while the dependent variable was return on assets. Regression analysis was employed to analyze the data. The findings revealed that the commercial banks in Nepal had poor credit risk management practices. This was supported by the negative impact of the nonperforming loan ratio on bank performance and the positive impact of cost per loan assets on bank performance. Contrary to other studies, the author found that the capital adequacy ratio and cash reserve had no influence on bank performance. In light of the significant relationship between credit risk and bank performance, the author suggests that banks establish proper credit risk management strategies by conducting thorough credit evaluation procedures before granting loans to customers.

Bhattarai (2017) conducted an analysis to assess the impact of credit risk management on the profitability of Nepalese Joint Venture Commercial banks. The study utilized secondary data from joint venture banks, covering the period from 2009/10 to 2015/16. A descriptive and causal comparative research design was employed for the study. The relationship between credit risk and profitability was examined using a multiple regression model. The dependent variables for measuring profitability were return on assets, return on equity, and net interest margin, while the independent variables for credit risk management included capital adequacy ratio, assets quality, management soundness, earnings, and liquidity ratios. The study concluded that liquidity was a major factor affecting the profitability of joint venture commercial banks in the Nepalese context.

Tuladhar (2017) investigated the impact of credit risk management on the profitability of Nepalese commercial banks. The study collected data from twenty-eight commercial banks for the period from 2011 to 2015. Pooled regression analysis and panel data analysis were utilized to analyze the data. The study included various independent variables as indicators of credit risk management, such as capital adequacy ratio (CAR), liquidity ratio (LR), bank size (BS), asset quality ratio (AQR), leverage ratio (LER), non-performing loan ratio (NPLR), cash reserve ratio (CRR), coverage ratio (CR), and the number of female board members (FBM). The dependent variables for measuring profitability were return on equity (ROE) and return on assets (ROA). The results indicated that coverage ratio, capital adequacy ratio, and bank size had a positive impact on bank performance. On the other hand, leverage ratio, non-performing loan ratio, and female board members had a negative impact on bank performance. However, liquidity ratio, assets quality ratio, and cash reserve ratio were found to be insignificant variables in determining bank performance. The study recommended the implementation of effective credit risk management practices in commercial banks in Nepal, with a focus on maintaining optimal levels of the aforementioned variables to enhance financial performance.

Sapkota (2017) conducted a study analyzing credit risk management in joint venture commercial banks in Nepal. The author selected six joint venture commercial banks as the sample and utilized data from 2008 to 2015 for analysis. The study solely employed a quantitative approach and focused on describing the output from SPSS. Regression models were also used for empirical analysis. The independent variables examined by the author included credit and advance to total deposit ratio, credit, and advance to fixed deposit ratio, credit and advance to total assets ratio, performing assets to total assets ratio, and loan loss provision. The dependent variable was returned on assets. The findings of the study indicated that credit risk management significantly influenced the joint venture commercial banks. The author concluded that the financial performance of credit risk management in joint venture commercial banks in Nepal was primarily driven by the capital adequacy factor. The study observed an increasing trend in the combined credit ratio of commercial banks, accompanied by a rise in non-performing assets, indicating a consistent increase in non-performing assets of commercial banks over time.

Shrestha (2018) conducted research on the impact of credit risk management and profitability in joint venture Nepalese commercial banks. The study utilized secondary

data and employed a descriptive and causal comparative research design. Return on assets was used as a profitability indicator, while the non-performing loan ratio and leverage ratio were used as indicators of credit risk management. Descriptive statistics and regression analysis were utilized to analyze the data. The results showed a positive relationship between credit risk and profitability, indicating that bank profits are affected by credit facilities.

Poudel (2018) analyzed the impact of credit risk on the profitability of commercial banks in Nepal. The study collected data from a sample of 15 commercial banks operating in the Nepali economy, covering the period from 2002/03 to 2014/15, using secondary data. The one-way Fixed Effect Model (FEM) of panel data analysis was employed as the primary analytical tool. The dependent variable was returned on equity, while the independent variables included non-performing loan, solvency ratio, loan loss provision ratio, capital adequacy ratio, total assets, inflation, interest spread rate, GDP growth, and inter-bank interest rate. The results confirmed that credit risk had a significant negative impact on the profitability of commercial banks in Nepal. Additionally, the solvency ratio, interest spread rate, and inflation had an insignificant negative impact on profitability. In contrast, the capital adequacy ratio, total assets, and GDP growth had a significant positive impact on profitability, while the inter-bank interest rate had an insignificant positive impact.

Shrestha (2018) investigated the impact of credit risk management on profitability in Nepalese commercial banks. The study collected data from five commercial banks for the period from 2012/13 to 2016/17 and analyzed it using mean, coefficient of variation, correlation, and regression analysis. The non-performing loan ratio, capital adequacy ratio, and loan and advance to deposit ratio were utilized as indicators of credit risk management (dependent variable), while return on assets and return on equity were used as indicators of profitability (dependent variable). The empirical results showed that the capital adequacy ratio had a positive impact on bank profitability. Conversely, the non-performing loan ratio and loan and advance to deposit ratio had a significantly negative impact on profitability. The study concluded that credit risk management is an important predictor of bank profitability, and the success of the bank in terms of profitability depends on it.

Bishnu Prasad Bhattarai (2019) reviewed the annual reports of listed banks on the Nepalese stock exchange for a period of 16 years (2001-2016) using the CAMELS approach. The data was analyzed using SPSS, employing descriptive and regression

models. The findings of the study concluded that the capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and operating income to total asset ratio (MQR) had a significant relationship with earnings (ROA) of banks in Nepal. However, the cash to deposits ratio (CDR) and risk sensitivity (RS) had no significant impact on ROA.

2.3 Research Gap

Numerous studies have been conducted to investigate the impact of credit risk management on the profitability of commercial banks in Nepal. These studies have yielded valuable findings and come with their own set of limitations. Previous research, such as Nawanna and Oguezue (2017) and Okwuosa, Ouedokun, and Ogundajo (2020), focused on the impact of credit risk management on the profitability of deposit money banks in Nigeria, considering indicators like non-performing loan ratio, loan loss provision ratio, and loan and advances. In contrast, this study focuses on Nepalese commercial banks and considers important indicators such as capital adequacy ratio, loan loss provision ratio, non-performing loan ratio, and cash reserve ratio. While previous studies, like Wireko and Forson (2017), utilized an explanatory research design, this study adopts a descriptive research design.

Furthermore, previous studies conducted in different countries, such as Kidana (2020) in Ethiopia, Ndoka and Islami (2016) in Albania, Zahid, and Saeed (2016) in the UK, differ from the current study, which specifically examines the Nepalese context. Unlike Kidana (2020), who employed a fixed effect model for data analysis, this study utilizes statistical tools such as correlation coefficients and regression, alongside financial tools. Thus, this study stands out from other research in terms of sample banks, variables used, research design, geographical focus, and the statistical and financial tools employed for data interpretation and analysis.

As a result, this study holds significance for various stakeholders, including scholars, students, teachers, civil society, government, business professionals, and other interested parties, as it offers academic and policy perspectives.

CHAPTER 3: RESEARCH METHODOLOGY

The research methodology is a structured approach used to address a problem and outlines the overall plan for conducting the study. It encompasses the scientific process of investigating, clarifying, and predicting phenomena. Before delving into data analysis and interpretation, it is crucial to describe the study methodology. Without a well-defined methodology, the study may lack direction, and the resulting conclusions may be misinterpreted.

This chapter provides a detailed explanation of the methodology employed in this study, which is divided into five sections. The first section outlines the study plan and research design. The second section discusses nature and sources of data. The third section focuses on the population and sample selection, specifically pertaining to the chosen banks. The fourth section describes the data collection procedure implemented in the study. Finally, the fifth section presents the data analysis tools utilized in the study.

3.1 Research Design

The research design refers to the planned structure and strategy of investigations that is devised to answer research questions and control variables. It serves as a framework or plan that guides the collection and analysis of data. The primary objective of this study is to analyze and evaluate the impact of credit management on the profitability of selected development banks. In this study, an analytical and descriptive research design is followed.

The research design outlines the overall approach or method by which the research study is guided. It provides a framework for the study, including the collection and analysis of data, the research methods to be used, and the sampling plan to be implemented. Research design is essential in obtaining the necessary answers to the research questions and achieving the research objectives. In this study, the research design is both descriptive and analytical in nature.

3.2 Population and Sample

Analyzing all seventeen development banks operating in the country in terms of credit management and its impact on profitability would require significant effort. Therefore, for the purpose of this research, a judgmental or purposive sampling method is

employed, selecting specific banks from the population. The study focuses on a ten-year period, ranging from 2012/13 to 2022/23. The population and sample banks for the research included the list below.

- ❖ Muktinath Bikas Bank Limited
- ❖ Kamana Sewa Bikas Bank Limited
- ❖ Garima Bikas Bank Limited

3.3 Nature and Source of Data

This study relies on the utilization of secondary data. The required data for analysis are directly obtained from the balance sheets and profit and loss accounts of the respective bank's annual reports. Additional data and information are collected from various institutions and authorities such as the Nepal Rastra Bank (NRB), the Securities Exchange Board, the Nepal Stock Exchange Ltd., the Ministry of Finance, and the budget speeches of different fiscal years, as well as the Economic Survey. All the secondary data are compiled, processed, and organized in a time series format to align with the research objectives.

Furthermore, economic data from various sources such as economic journals, periodicals, bulletins, magazines, published reports, and unpublished documents are gathered. The sources of secondary data collection include articles, books, journals, web-based data, library research studies, internet sources, visiting home pages and related links, directives of the NRB, and publications like the Statistics and Bank Supervision Report by the Nepal Rastra Bank, as well as the annual reports of the selected banks.

3.4 Methods of Data Analysis

To make the study more specific and reliable, the researcher uses two types of tools for
analysis,

- Statistical Tools
- Financial Tools

3.4.1 Statistical Tools

Statistical tools are used to quantify data and represent it in a numerical format. This allows for the data to be analyzed in a logical and systematic way, which can help to

identify patterns, trends, and relationships. The listed statistical tools below are applied for the study.

3.4.1.1 Arithmetic Mean

The arithmetic mean, also known as the average, is a measure of central tendency that is calculated by adding all the numbers in a set and then dividing by the number of numbers in the set. The arithmetic mean is a simple way to summarize a set of data and can be used to compare different sets of data.

The arithmetic mean is often referred to as the "middle" of a set of data because it is equal to the sum of all the numbers in the set divided by the number of numbers in the set. In other words, the arithmetic mean is the point on the number line that is exactly halfway between the smallest and largest numbers in the set.

The arithmetic mean is a useful measure of central tendency because it is easy to calculate and understand. However, it is important to note that the arithmetic mean can be misleading if the data is not normally distributed. For example, if the data is skewed, the arithmetic mean may not be a good representation of the "middle" of the data. The arithmetic mean is a versatile measure of central tendency that can be used in a variety of contexts. It is a simple and easy-to-understand measure, but it is important to be aware of its limitations.

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

Where:

X is Number in X-series

n is Number of Observations in a sample

3.4.1.2 Standard Deviation

Standard deviation is a measure of how spread out a set of data is. It is calculated by taking the square root of the variance, which is a measure of how much variation there is from the mean. A low standard deviation indicates that the data points are clustered around the mean, while a high standard deviation indicates that the data points are more spread out.

Standard deviation is a useful measure of risk in investing. A low standard deviation indicates that the returns on an investment are likely to be close to the mean, while a high standard deviation indicates that the returns on an investment are more likely to be far from the mean.

The formula for calculating the standard deviation is:
Standard Deviation (σ) = √ (∑ (x - μ) ^2 / n)

where:
σ is the standard deviation
∑ is the sum of
x is a value in the set
μ is the mean of the set
n is the number of values in the set

3.4.1.3 Coefficient of Variation

The coefficient of variation (COV/CV) is a statistical measure of the dispersion of data points in a data series around the mean. The coefficient of variation represents the ratio of the standard deviation to the mean, and it is a useful statistic for comparing the degree of variation from one data series to another, even if the means are drastically different from one another. Less CV is the more uniformity and consistency and vice versa. Only standard deviation is not appropriate to compare two pairs of variables but also CV is capable of comparing two variables independently in terms of their variability. It is calculated as below:

$$C.V = \frac{\sigma}{\bar{X}} * 100$$

3.4.1.3 Correlation Coefficient

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

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

Where,

r: Correlation between X and Y

n: Number of observations in series X and Y

∑X: Sum of observations in series X

∑Y: Sum of observations in series Y

∑X2: Sum of square observations in series X

∑Y2: Sum of squared observations in series Y

∑XY: Sum of product of observations in series X and Y

3.4.1.5 Coefficient of Determination

The coefficient of determination gives the percentage variation in the dependent variable that is accounted for by the independent variables. In other words, the coefficient of determination gives the ratio of expected variance to the total variance. The coefficient of determination is given by the square of the correlation coefficient, i.e., r2 so the coefficient of determination = Square of correlation = (r2).

3.4.1.4 Regression Analysis

Multiple Regression Analysis

Multiple regression analysis extends the concept of simple linear regression by using two or more independent variables to estimate the unknown values of a dependent variable. Despite the inclusion of multiple independent variables, the fundamental idea of the analysis remains unchanged. Multiple regression is a statistical technique employed to estimate or predict the most probable value of a dependent variable based on the known values of two or more independent variables. In order to assess the impact of credit risk management on profitability, the following multiple regression equation is analyzed.

Regression Equation for dependent variable ROE:

Y= $a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$

Where,

Y= Dependent variable i.e., ROE

a= Value of Y when all $X_1X_2X_3X_4X_5$ are zero.

b_1= Coefficient of LDR

b_2= Coefficient of DAR

b_3= Coefficient of CDR

b_4= Coefficient of LAR

b_5= Coefficient of CR

X_1= Loan to Deposit Ratio

X_2= Deposit to Assets Ratio

X_3= Cash and Cash Equivalents to Deposit Ratio

X_4= Liquid Assets Ratio

X_5= Current Ratio

e = Residual term of the regression equation

3.4.2 Financial Tools

Financial analysis tools are used to evaluate and interpret a company's financial statements. These tools can be used for a variety of purposes, such as planning, investment, and performance analysis. Stakeholders of a business firm often perform several types of analyses on a bank's financial statements. These analyses rely on comparisons or relationships between data points, which can enhance the utility or practical value of accounting information.

In this study, different financial ratio analyses were used to find out the liquidity and profitability of BFIs. Liquidity ratios measure a company's ability to meet its short-term obligations, while profitability ratios measure a company's ability to generate profits.

Here are some specific examples of financial analysis tools that can be used to evaluate a company's liquidity and profitability:

I. Liquidity ratios**:** Current ratio, quick ratio, and cash ratio
II. Profitability ratios: Return on assets (ROA), return on equity (ROE), and gross profit margin.

These are just a few examples of the many financial analysis tools that can be used to evaluate a company's financial health. The specific tools that are used will depend on the specific goals of the analysis.

I. Liquidity Ratio

Liquidity ratios are an important class of financial metrics used to determine a debtor's ability to pay off current debt obligations without raising external capital. Liquidity

ratios determine a company's ability to cover short-term obligations and cash flows, while solvency ratios are concerned with a longer-term ability to pay ongoing debts.

i. Loan to deposit Ratio (LDR)

The loan-to-deposit ratio is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period. This ratio is calculated to find out how successfully the banks are utilizing their deposits on loans and advances for profit generating purposes. The risk of liquidity of a development bank is the risk of loss resulting from the inability to meet its need for funding (Lartey, Antwi, & Boadi, 2013). For banks, it is how much they have coming in (deposits) vs how much they have going out (loans). The more money the development bank has loaned out generates the more interest income provided the loans are to secure borrowers. Deposits are an obligation (debts) the development banks have to the depositors. A higher ratio indicates the efficient and effective utilization of funds while a lower ratio indicates the inefficiency of the banks to stop them from remaining idle.

$$\text{Loans to Deposit Ratio} = \frac{\text{Loans and advance}}{\text{Total Deposits}}$$

ii. Deposit to Assets Ratio (DAR)

Deposits to asset ratio measure the magnitude of assets being funded by public deposits. He further stated that the Deposit-to-Asset Ratio tests whether banks that have more deposits incur additional operating costs to attract deposits (Kwan, 2000).

$$\text{Deposit to Assets Ratio} = \frac{\text{Total Deposits}}{\text{Total Assets}}$$

iii. Cash and Cash Equivalents to Deposit Ratio (CDR)

Cash in a bank or cash equivalents is the most liquid asset of a bank. Therefore, a higher CDR indicates that a bank is relatively more liquid than a bank which has a lower CDR. Depositors' trust in bank is enhanced when a bank maintains a higher cash deposit ratio.

$$\text{Cash and Cash Equivalents to Deposit Ratio} = \frac{\text{Cash and Cash Equivalents}}{\text{Total Deposits}}$$

iv. Liquid Assets Ratio (LAR)

Liquid assets ratio is defined as the obligation of development banks to maintain a predetermined percentage of total deposits and certain other liabilities in the form of liquid assets. Liquid assets help to know about the liquidity condition of BFIs.

$$\text{Liquid Assets Ratio} = \frac{\text{Cash and Cash Equivalents}}{\text{Current Liabilities}}$$

v. Current Ratio (CR)

The current ratio is a liquidity ratio that measures a company's ability to pay short-term obligations or those due within one year. It tells investors and analysts how a company can maximize the current assets on its balance sheet to satisfy its current debt and other payables. A current ratio that is lower than the industry average may indicate a higher risk of distress or default. Similarly, if a company has a very high current ratio compared with its peer group, it indicates that management may not be using its assets efficiently.

This ratio is calculated by:

$$\text{Current Ratios} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

II. Profitability Ratios

This ratio shows the profitability conditions of the bank. Profits are essential for the survival of the bank, so it is regarded as the engine that drives the banking business and indicates economic progress. Profitability ratio is used to evaluate the company's ability to generate income as compared to its expenses and other cost associated with the generation of income during a particular period. This ratio represents the final result of the company. Profitability ratios are the indicators of degree of managerial success in achieving firm's overall goals (Pradhan; 1996: 41). Higher ratio results are often more favorable, but these ratios provide much more information when compared to results of similar companies, the company's own historical performance, or the industry average. The following ratios are considered under this heading:

i. Return on Equity (ROE)

Return on equity, also known as return on shareholder's fund, is the relationship between net profit after interest and tax and shareholder's fund. It indicates the reward

available for the owners after meeting all the expenses and discharging the income tax liability. ROE is a gauge of a corporation's profitability and how efficiently it generates those profits. The higher the ROE, the better a company is at converting its equity financing into profits. To calculate ROE, divide net income by the value of shareholder's equity.

ROE= Net Profit after Interest and Tax

Shareholder's Equity

3.5 Research Framework

From the theoretical and empirical literature reviews, the following research framework of the study is developed by the researcher.

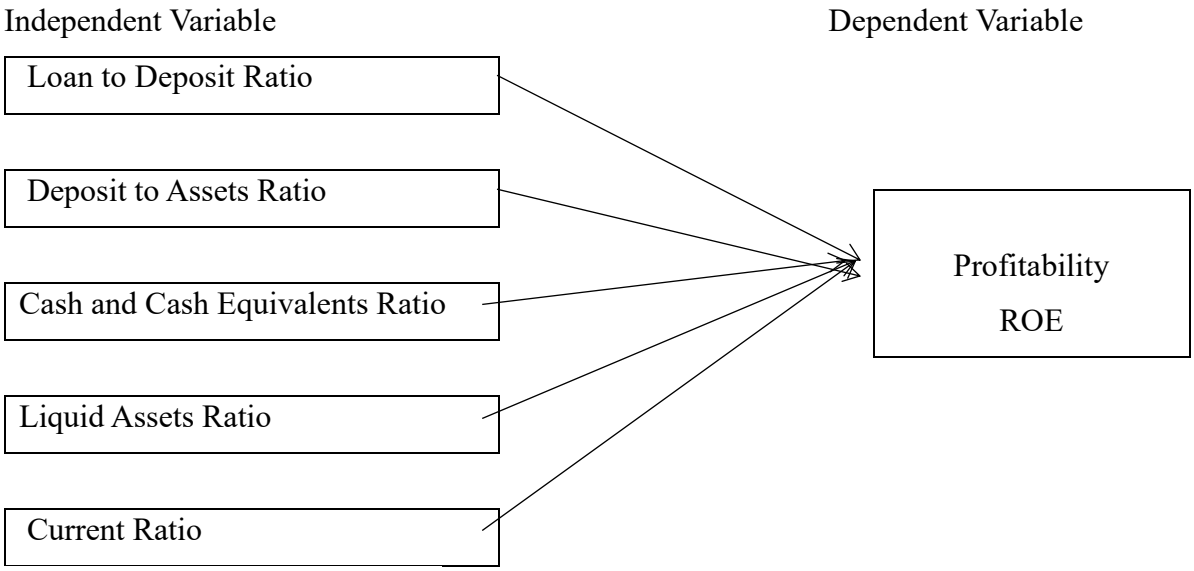

Figure: 2.1. Research framework.

Source: Paul, Bhowmik and Famanna (2021)

Definition of Independent and Dependent Variables:

i. Loan to Deposit Ratio:

This ratio is calculated to find out how successfully the banks are utilizing their deposits on loans and advances for profit generating purpose. The loan-to-deposit ratio is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period. It is calculated by dividing loan & advance by total deposits.

ii. Deposit to Assets Ratio:

Deposits to asset ratio measure the magnitude of assets being funded by public deposits. He further stated that the Deposit-to-Asset Ratio tests whether banks that have more deposits incur additional operating costs to attract deposits. It is calculated by dividing total deposits by total Assets.

iii. Cash and Cash Equivalents Ratio:

Cash in a bank or cash equivalents is the most liquid asset of a bank. Therefore, a higher CDR indicates that a bank is relatively more liquid than a bank which has a lower CDR. Depositors' trust to banks is enhanced when a bank maintains a higher cash deposit ratio. It is calculated by dividing cash and cash equivalents by total deposits.

iv. Liquid Assets Ratio:

Liquid assets ratio is defined as the obligation of banks to maintain a predetermined percentage of total deposits and certain other liabilities in the form of liquid assets. It is calculated by dividing cash and cash equivalents by current liabilities.

v. Current Ratio:

The current ratio is a liquidity ratio that measures a company’s ability to pay short-term obligations or those due within one year. It tells investors and analysts how a company can maximize the current assets on its balance sheet to satisfy its current debt and other payables. It is calculated by dividing current assets by current liabilities.

vi. Return on Equity:

It is the relationship between net profit after interest and tax and shareholder’s fund. It indicates the reward available for the owners after meeting all the expenses and discharging the income tax liability. ROE is a gauge of a corporation's profitability and how efficiently it generates those profits.

CHAPTER 4: RESULTS AND DISCUSSION

This chapter presents a detailed discussion of the study and interpretation of the findings in line with the objectives which is to analyze the effect of credit management on profitability of development banks in Nepal. This chapter has attempted to analyze and draw inferences from the collected facts following the outline laid down in the research plan. The collected data has been systematically classified, tabulated, analyzed, and presented using various modules, tables, and interpreted. The discussion provides the finding in clear visualization.

4.1 Results

4.1.1 Descriptive Statistics Analysis

Descriptive statistics is used to analyze the performance variable under the study. Descriptive statistics analysis helps to explain the characteristics of a firm's performance and related variables during a period of study. The descriptive statistics used in this study consists of mean, median, standard deviation, and minimum and maximum values associated with variables under study. The table summarizes the descriptive statistics of variables used in this study.

Table: 4.1 *Descriptive statistics analysis*

	N	Minimum	Maximum	Mean	Std. Deviation
Loan to Deposit	30	9.590711	98.623102	77.01546	24.488372
Deposit to Assets	30	66.45335	143.8371	88.87205	15.454981
Cash & Cash Equi	30	1.449023	30.80980	8.977346	7.8854440
Liquid Assets	30	10.06308	280.4129	86.86021	77.063963
Current ratio	30	12.76	30.26	23.4840	4.15259
Return on Equity	30	3.74	19.24	13.8657	3.58816

Source: Annual Report and Appendix (IBM SPSS 26)

Table 4.1 represent the descriptive analysis of variable under the study i.e., loan to deposit ratio, deposit to assets ratio, cash and cash equivalent ratio, liquid assets ratio, current assets ratio, and return on equity. The table shows the value of mean, standard deviation, minimum and maximum value of variable under the study.

The minimum value of loan to deposit ratio is 9.590711 and the maximum value of loan to deposit ratio is 98.623 with the mean of 77.01546. The mean value indicate the

average of loan to deposit of concern banks. And the standard deviation of 24.4898372 indicates deviation of loan to deposit ratio in concern development banks.

The minimum value of deposit to assets ratio is 66.45335 and the maximum value of deposit to assets ratio is 143.837 with the mean of 88.87205. The mean value indicate the average deposit to assets of concern banks. And the standard deviation of 15.454981 indicates deviation of deposit to assets ratio of concern development bank.

The minimum value of cash and cash equivalent ratio is 1.449023 and the maximum value of cash and cash equivalent ratio is 30.80980 with the mean of 8.977346. The mean value indicate the average of cash and cash equivalent ratio of concern to banks. And the standard deviation of 7.8854440 indicates deviation of cash and cash equivalent ratio in concern development banks.

The minimum value of liquid assets ratio is 10.06308 and the maximum value of liquid assets ratio is 280.4129 with the mean of 86.86021. The mean value indicate the average liquid assets ratio of concern banks. And the standard deviation of 77.063963 indicates deviation of liquid assets ratio in concern development banks.

The minimum value of the current ratio is 12.76 and the maximum value of current ratio is 30.26 with the mean of 23.4840. The mean value indicate the average of the current ratio of concern banks. And the standard deviation of 4.15259 indicates deviation of current ratio in concern of development banks.

The minimum value of return on equity is 3.74 and the maximum value of return on equity is 19.24 with the mean of 13.8657. The mean value indicate the average of return on equity of concern banks. And the standard deviation of 3.58816 indicates deviation of return on equity in concern development banks.

4.1.2 Correlation Coefficient Analysis

Correlation matrix shows the correlation coefficient between variables and that in such a way to summarize the data. It is used to find how the variables are related with their strength coefficient. The value of correlation lies between -1 to 1 where 1 indicates strong positive relationship, -1 indicates strong negative relationship and 0 no relationship at all between variables tested.

Table 4.2 *Person Correlation Coefficient between dependent and independent variables*

	LDR	DAR	CCR	LAR	CR	ROE
LDR	1					
DAR	-0.01	1				
CCR	.378*	-0.160	1			
LAR	0.261	-.041	.946**	1		
CR	.715**	.190	141	.121	1	
ROE	.168	.120	0.051	0.061	.267	1

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

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

Source: Annual Report and Appendix (IBM SPSS 26)

Table 4.2 shows the correlation among the study variables of sample banks. Return on equity is taken as dependent variable and independent variables are loan to deposit ratio, deposit to assets ratio, cash and cash equivalent ratio, liquid assets ratio and current ratio.

The correlation coefficient between return on equity and loan to deposit ratio is 0.168. it indicate that there is positive relation between return on equity and loan to deposit ratio. The correlation between return on assets and deposit to assets ratio is 0.120 which indicates the positive relationship between these two variables. The correlation coefficient of return on equity and cash and cash equivalent is 0.051 which indicate positive relation between these two variables. The correlation coefficient between return on equity and liquid assets ratio is 0.061 which means there is positive relationship between return on equity and liquid assets ratio. The correlation coefficient between return on equity and current ratio is 0.267 which indicate positive relationship between return on equity and current ratio.

From the above matrix shows there is a positive relation between dependent variable return on equity with loan to deposit ratio, deposit to assets ratio, cash and cash equivalent ratio, liquid assets ratio and current ratio. The positive relation among these variables shows the direct relationship between the variables, whereas negative correlation shows the inverse relationship between the variables.

4.1.3 Regression Analysis

Regression analysis is a set of statistical processes for estimating the relationships between a dependent variable and independent variables. In this research paper, dependent variable is return on equity which is known as profitability and independent variable are loan to deposit ratio, deposit to assets ratio, cash and cash equivalents ratio, liquid assets ratio and current ratio.

Table :4.3 *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.280[a]	.078	-.114	3.78697

a. Predictors: (Constant), Current ratio, Liquid Assets, Deposit to Assets, Loan to Deposit, Cash & Cash Equipment

Sour

Source: Annual Report and Appendix (IBM SPSS 26)

Table 4.3 shows the model summary of multiple regression under this study variables return on equity is taken as dependent variables where the value of R square is 0.078 means that there is 7.8% of variation on return on equity explained by the independent variables i.e. loan to deposit ratio, deposit to assets ratio, cash and cash equivalents ratio, liquid assets ratio and current ratio.

Table 4.4 *Analysis of variance (ANOVA)*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.185	5	5.837	.407	.839[b]
	Residual	344.187	24	14.341		
	Total	373.371	29			

a. Dependent Variable: ROE

b. Predictor (Constant) LDR, CCR, DAR, CR, LR

Sources: Annual Report and Appendix (IBM SPSS 26)

Table 4.4 represent the ANOVA (F-value) test for the significance of multiple regression coefficient. The P value is 0.839 which is greater than alpha value 0.05 so the model is a good predictor of the relationship between the variables under the study. Independent variables i.e., loan to deposit ratio, deposit to assets ratio, cash and cash equivalents

ratio, liquid assets ratio and current ratio with return on equity as dependent variable since p-value is more than 0.05 which means null hypothesis is rejected.

Regression Coefficient

Regression coefficients are estimates of the population parameters and describe the relationship between a predictor variable and the response. In linear regression, coefficients are the values that multiply the predictor values.

Table:4.5 *Regression Model of ROE with Independent Variables*

	B	Std. Error	t-stat	Sig.
(Constant)	7.063	5.679	1.244	.226
Loan to Deposit	-.006	.059	-.107	.916
Deposit to Assets	.016	.051	.321	.751
Cash & Cash Equi	.008	.414	.019	.985
Liquid Assets	.001	.039	.027	.979
Current ratio	.241	.284	.851	.403

a. Dependent Variable: Return on Equity

Source: Annual Report and Appendix (IBM SPSS 26)

Table 4.5 shows that the regression model of return on equity with independent variables. According to the independent variable loan to deposit ratio has a negative relationship with dependent return on equity with the coefficient of -0.006. The significance p-value of loan to deposit ratio is0.916 which is more than that of 0.05 so the result support the working hypothesis that loan to deposit ratio have negative and insignificance impact on dependent variable.

Independent variable deposit to assets ratio has a positive relationship with dependent return on equity with the coefficient of 0.016. The significance p-value of deposit to assets ratio is 0.751 which is more than that of 0.05 so the result support the working hypothesis that deposit to assets ratio have positive and insignificant the dependent variable.

Independent variable cash and cash equivalents ratio has a positive relationship with dependent return on equity with the coefficient of 0.008. The significance p-value of cash and cash equivalents ratio is 0.985 which is more than that of 0.05 so the result

support the working hypothesis that cash and cash equivalents ratio have positive and insignificant relation with the dependent variable.

Independent variable liquid assets ratio has a positive relationship with dependent return on equity with the coefficient of 0.001. The significance p-value of liquid assets ratio is 0.979, which is more than that of 0.05 so the result support the working hypothesis that liquid assets ratio have positive and insignificant relation with the dependent variable.

Independent variable current ratio has a positive relationship with dependent return on equity with the coefficient of 0.241. The significance p-value of current ratio is 0.403 which is more than that of 0.05 so the result support the working hypothesis that current ratio have positive and insignificant relation with the dependent variable.

The regression result shows that there is no significance impact of credit management on profitability. The regression model shows loan to deposit ratio and return on equity have no significance impact on profitability. Deposit to assets and return on assets have no significance impact on profitability of Nepalese development bank, cash and cash equivalents have no significance impact on return on equity, liquid assets ratio have no significance impact with return on equity and current ratio have no significance impact on return on equity. All the credit management variables and return on assets as profitability ratio have no significance impact so there in no significance impact between credit management and profitability in Nepalese development banks.

4.2 Discussion

This section incorporate discussion of result obtained from the study supporting the previous research. The previous section to examine the effect of credit management on Profitability of development banks in Nepal. This discussion section is undertaken with reference to the obtained result obtained from the previous study.

Loan to deposit ratio as independent variable found to insignificance to the return on equity as dependent variable. Therefore, the result of the study clearly shows that the loan to deposit have no significant impact on return on equity. From the correlation matrix positive relationship between loan to deposit and return on equity is found that if one variable increase another variable will also increase and vice-versa. The finding

concern loan to deposit ratio has contradictory result than that finding of Paul, Bhowmik and Famanna (2021).

Deposit to assets ratio as independent variable found to insignificance to the return on equity as dependent variable. Therefore, the result of the study clearly shows the deposit to assets ratio have no significant impact on return on equity. From the correlation matrix positive relationship between loan to deposit and return on equity is found that if one variable increase another variable will also increase and vice-versa. The finding concern deposit to assets ratio has consistent result than that finding of Yousuf and Felfoldi (2018)

Cash and cash equivalent ratio as independent variable found to be insignificant to the return on equity as dependent variable. Therefore, the result of the study clearly shows the cash and cash equivalent ratio have no significant impact on return on equity. From the correlation matrix positive relationship between Cash and cash equivalent ratio and return on equity is found that indicate if one variable increase another variable will also increase and vice versa. The finding concern cash and cash equivalent has inconsistent result than that finding of Yousuf and Felfoldi (2018)

Liquid assets ratio as independent variable found to insignificance to the return on equity as dependent variable. Therefore, the result of the study clearly shows that the liquid assets ratio have no significant impact on return on equity. From the correlation matrix positive relationship between liquid assets and return on equity is found that indicate if one variable increase another variable will also increase and vice-versa. The finding concern liquid assets go consistent result than that finding of Alshiqi and Sahiti (2020).

Current ratio as independent variable found to insignificance to the return on equity as dependent variable. Therefore, the result of the study clearly shows that the current ratio have no significant impact on return on equity. From the correlation matrix positive relationship between current ratio and return on equity is found that indicate if one variable increase another variable will also increase and vice-versa. The finding concern loan to current ratio go contradict result than that finding of Paul, Bhowmik and Famanna (2021).

Though the regression analysis all independent variable are statistically insignificance with return on equity as dependent variable and from the correlation matrix all variable have positive relation to the dependent variables. Hence the result support the liquidity has positive relation with profitability and statistically insignificance impact on profitability and liquidity of development banks. The finding shows the result is inconsistent with the finding of Paul, Bhowmik and Famanna (2021).

CHAPTER 5: SUMMARY AND CONCLUSION

In the previous chapter, the data analysis was done according to the objectives of this study. This chapter presents a brief overview and conclusion of the research and conclude the findings of the study. It also draws inferences and conclusion forms the finding which will lead to generalization. Contribution of the study was discussed in this chapter. Based on the study, some recommendations have also been made for the parties concerned.

5.1 Summary

There are seventeen development banks listed in NEPSE. This study comprise the effect of credit management on profitability of development banks in Nepal. From the total population of seventeen development banks only three are taken as sample i.e., Muktinath Bikash Bank, Kamana Sewa Bikash Bank and Garima Bikash Bank. The main objective of this study is to find out the effect of credit management on profitability of development banks. This study aims to provide the suggestion to investor, potential investor and overall concern parties of Nepalese development banks. Data of last ten years from fiscal year 2013/14 to 2022/23 is taken for the study purpose. The three development banks were selected by using a random sampling method from the list of development banks. Loan to deposit ratio, deposit to assets ratio, cash, and cash equivalent ratio. Liquid assets ratio, current ratio and return on equity are used as analyze the effect of credit management on profitability of Nepalese development banks.

The dependent variable of this research is Return on Equity (ROE). The independent variable are loan to deposit, deposit to total assets, current ratio, liquid assets, cash and cash equivalent. The research question are what is the credit efficiency and profitability position of development banks in Nepal? Is there any relationship between credit and profitability in development banks in Nepal?, and? What is the impact of credit factors on the profitability of development banks in Nepal This is the conceptual framework of the research. On the basis of research question the objectives of the research are to analyze the actual credit efficiency and profitability of development banks, to examine the actual relationship between credit and profitability of banks, and to find out the impact of credit ratio on the profitability of banks. The literature review of the research

is based on articles and thesis of previous scholars. Both international and Nepalese context of article and thesis are reviewed. Descriptive and explanatory research design is used. SPSS and Excel are the tools of data analysis. Data are taken from respective sample banks websites.

Results from the correlation matrix show that ROE has positive correlation with all the independent variables. Likewise, from the correlation matrix the dependent and independent variables have found to be statistically in significant relation which means there in no significance effect of credit management on profitability in Nepalese development banks.

5.2 Conclusion

Based on the objective analysis of data and discussion of results, the following are the conclusion of the study.

By analyze the actual credit efficiency and profitability of development banks. It was found that credit management should be managed properly so the organization can generate the required return. In this era of globalization and competitive world credit management plays an important and challenging task for concern management because credit is the main sources of earning for banks and the financing sector. However, there is another factor affecting credit management on profitability cause the model summary seems some portion will be explained by the independent variables under this study and remaining change seen in ROE is not explained by these variables.

For the analysis, ten-year data is analyzed in such a manner to address the research objective and for the second objective to find out the relationship of credit management and profitability it is found to be positive correlation with the dependent variable. We can conclude loan to deposit, deposit to assets, cash and cash equivalent, liquid assets ratio and current ratio have positive relation with return on equity which means there is positive relationship credit management and profitability of development banks in Nepal.

From the point of objective to find out the impact of credit ratio on the profitability of bank. It is found that sample banks credit ratios have no significance in relation with profitability ratio. Which means there is no significance change in return on equity when credit ratios are changed. We can conclude that there is no major change or impact

of loan to deposit, deposit to assets, cash and cash equivalent, current ratio, and liquid assets ratio on return on equity taken as dependent variable for this study which indicate profitability ratio.

From the findings it is concluded that bank should manage better credit management and there is a positive relation between credit management and profitability of development banks whereas there is no significant impact of credit management on profitability of Nepalese development banks.

5.3 Implications

This study has important implications for both academics and Managers of the various banks and concern parties. Credit is one of the major concerns of earnings of banks, so it is taken as the important factor for consideration.

This study is limited to the analysis of secondary data only. Further research can be done using primary data as well as secondary data with more sample size and questionnaires which may yield different result. This study will be a reference for the new researcher in the study concerned.

This study will be helpful to the management team and investor to decide for the service and its use and impact and relation in profitability. As well this study will provide clear site to which factor is to consider as key factor and which is to ignore while making policy from the concern.

Appendixes

Total Loan			
Year	MBBL	GBBL	KSBBL
2013/14	4377596000	3458100000	610000000
2014/15	6625260000	5437700000	710000000
2015/16	9798614000	7909100000	662348081
2016/17	15159395000	12835000000	827327500
2017/18	25260012000	18620200000	13142121529
2018/19	38144000000	28438692186	18906601307
2019/20	48265000000	35144046037	31466663926
2020/21	76403000000	45635262696	38580550842
2021/22	89539000000	60892336000	42362425918
2022/23	96993000000	64930730000	46046420000

Total Deposit			
Year	MBBL	GBBL	KSBBL
2013/14	5197885000	4015500000	2664767710
2014/15	7781558000	6358600000	3142486894
2015/16	11276653000	9228600000	6906141360
2016/17	16775223000	14513400000	6982972538
2017/18	30354845000	21221200000	14830496168
2018/19	46176000000	33134200000	21376132893
2019/20	59633000000	45188673100	31905976624
2020/21	92323000000	66211794401	44200605720
2021/22	1.08425E+11	1.04675E+11	46256070297
2022/23	1.18449E+11	1.1645E+11	55735850000

Total Assets			
Year	MBBL	GBBL	KSBBL
2013/14	7821855215	5573129596	3024383771
2014/15	9000471560	7452362537	3588700975
2015/16	12936752306	10578839427	7944979040
2016/17	19592339997	17694900449	8249053482
2017/18	34649257217	25286456388	19459669775
2018/19	51991396287	38749107242	26691891150
2019/20	66348092711	50293647873	36621711872
2020/21	1.01128E+11	72947556943	51304904226
2021/22	1.21083E+11	74941536900	59881699953
2022/23	1.31611E+11	80959517600	62581150000

		Cash and cash equivalent.	
Year	MBBL	GBBL	KSBBL
2013/14	192526232	127883930	38613098
2014/15	226585646	193152101	50004244
2015/16	356911918	260087556	136597254
2016/17	693214354	3522151218	127356470
2017/18	468026462	4605023457	4569246704
2018/19	8552625761	6452851995	3881341086
2019/20	8199382567	6930070554	1710904134
2020/21	6269721484	5647587394	4401235416
2021/22	8101009812	8101009812	6299336225
2022/23	5268539748	5268539748	4193070000

Current Liabilities			
Year	MBBL	GBBL	KSBBL
2013/14	1816511583	825625552	369446610
2014/15	2251651155	966552472	415334030
2015/16	2521419659	1396687753	816154695
2016/17	3855156117	1484211601	94187446
2017/18	4322659543	2198331304	1629470925
2018/19	4754189286	3495859408	2344667089
2019/20	6052963402	4594704554	3317655184
2020/21	9430015966	6759948461	4746666392
2021/22	11300687734	7343398935	5551712062

Current Ratio			
Year	MBBL	GBBL	KSBBL
2013/14	23.99	21.86	13.57
2014/15	23.63	20.26	14.25
2015/16	30.26	26.98	12.76
2016/17	27.03	18.59	21.58
2017/18	26.65	22.81	23.65
2018/19	25.88	25.88	22.74
2019/20	27.83	27.83	23.79
2020/21	24.07	24.07	22.1
2021/22	26.32	26.32	23.99
2022/23	25.67	25.67	24.49

ROE

Year	MBBL	GBBL	KSBBL
2013/14	13.8	12.38	11.65
2014/15	14.6	15.01	9.23
2015/16	16.32	13.79	12.8
2016/17	17.65	18.39	13.87
2017/18	1803	12.51	10.27
2018/19	19.24	19.24	8.77
2019/20	12.16	12.16	3.74
2020/21	16.94	16.94	15.58
2021/22	16.21	16.61	13.52
2022/23	13.33	13.33	7.63

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