IMPACT OF CREDIT RISK MANAGEMENT ON PROFITABILITY OF NEPALESE COMMERCIAL BANKS

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

by

Rusha Dhakal
Exam Roll No.: 6091/18
T.U Regd. No.: 7-2-729-16-2013
Campus Roll No.: 1066/074
Shanker Dev Campus

Kathmandu, Nepal
July, 2024

CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**Impact of Credit Risk Management on Profitability of Nepalese Commercial Banks**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

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

Name of the Candidate: Rusha Dhakal

Signature:

Date of submission: July, 2024

REPORT OF RESEARCH COMMITTEE

Ms. Rusha Dhakal has defended research proposal entitled "**Impact of Credit Risk Management on Profitability of Nepalese Commercial Banks"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Dr. Pitri Raj Adhikari and submit the thesis for evaluation and viva voce examination.

Dr. Pitri Raj Adhikari

Dissertation Supervisor

Signature: .....

Dissertation Proposal Defended Date:
2080/2/8

Dissertation Submitted Date:
……..

Asso. Prof. Dr. Sajeeb Kumar Shrestha

Head of Research Department

Signature: .....

Dissertation Viva Voce Date:
……

APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled "**Impact of Credit Risk Management on Profitability of Nepalese Commercial Banks**" presented by Rusha Dhakal, a candidate for the degree of Master of Business Studies (MBS Semester) and conducted the viva-voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

_____

Dr. Pitri Raj Adhikari
Dissertation Supervisor

_____

Internal Examiner

_____

Internal Expert

_____

External Expert

_____

Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

_____

Asso. Prof. Dr. Krishna Prasad Acharya
Campus Chief

ACKNOWLEDGEMENTS

This study is an outcome of serious inspiration and moral support of many people and for this I am always grateful to all of them. I take this opportunity to express my sincere gratitude to all those who have directly or indirectly encouraged me to make this study.

I would like to express special gratitude to Dr. Pitri Raj Adhikari supervisor, Shanker Dev Campus, Faculty of Management, who provided ideas, advice and guidance from very beginning. I would like to express special gratitude to Associate Prof. Dr. Sajeeb Kumar Shrestha, Head of Research Department, and Associate Prof. Dr. Krishna Prasad Acharya Campus Chief. I would also like to express special thanks to the library staff of Shanker Dev Campus, who helped me to prepare this thesis and for their valuable suggestion.

I deeply appreciate my family members for their encouragement, moral support and patience while preparing this thesis work

Last, but not the least, I would like to acknowledge all the authors and writers involved in this thesis and the individuals who helped me directly and indirectly to make this study possible.

Rusha Dhakal
Shanker Dev Campus

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS

CAPM	:	Capital Assets Pricing Model
CV	:	Coefficient of Variation
F/Y	:	Fiscal Year
GDP	:	Gross Domestic Product
KBL	:	Kumari Bank Limited
LSBL	:	Laxmi Sunrise Bank Limited
MPS	:	Market Price Per Share
NABIL	:	Nepal Arab Bank Limited
NEPSE	:	Nepal Stock Exchange
PA	:	Per annum
R&D	:	Research and Development
RRR	:	Realized Rate of Return
Sanima	:	Sanima Bank Limited
SEBON	:	Security Board of Nepal
SBL	:	Siddhartha Bank Limited
TU	:	Tribhuvan University

ABSTRACT

A credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. Credit risk is one of the most significant risks that banks face, considering that granting credit is one of the main sources of income in commercial banks. The overall objective of this research is to investigate how credit risk management has impact on the profitability of commercial banks of Nepal. The specific objective are; to analyze the indicators of credit risk management and profitability of Nepalese commercial banks, to assess the relationship between credit risk management and profitability of commercial banks in Nepal and to examine the impact of credit risk management on profitability of Nepalese commercial banks. To fulfil objective of the study, among the 20 commercial banks, only 3 (Siddhartha Bank Ltd., Laxmi Sunrise Bank Ltd and Sanima Bank Ltd.) commercial banks have been selected using convenience sampling method. The study is based on secondary sources of data from 2013/14 to 2022/23.

It is concluded that total capital fund should not be less than the 11% of the total risk weighted exposure. Mean value of all sample banks have more than 11%. Therefore, the overall mean value of CAR is in satisfactory level. It implies that all banks have become successful to minimize its risk to maintain standard capital as adequate as required by regulations.

The overall result shows that the credit risk management is an important predicator for the profitability of banks. Therefore, the success of the bank in term of profitability depends on its credit risk management. From the study finding independent variables CAR has significant relationship with ROE since its p-value is less than 0.01. Similarly, CRR has significant relationship with ROE since its p value is less than 0.05. However, other independent variables LLPR and NPLR do not have significant results since their p-value is greater than 0.01.

Keywords: *Credit risk management, commercial banks, capital adequacy ratio, profitability, non-performing loan*

CHAPTER I

INTRODUCTION

1.1. Background of Study

The risks that are most applicable to banks risk are: credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk and solvency risk. Risk management is the human activity which integrates recognition of risk, risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources (Ali & Dhiman, 2019) whereas credit risk is the risk of loss due to debtor's non-payment of a loan or other line of credit (either the principal or interest or both). Default rate is the possibility that a borrower will default, by failing to repay principal and interest in a timely manner (Chatterjee, 2005). Firms that had been performing well suddenly announced large losses due to credit exposures that turned sour, interest rate positions taken, or derivative exposures that may or may not have been assumed to hedge balance sheet risk (Santomero, 1997). In response to this, commercial banks have almost universally embarked upon an upgrading of their risk management and control systems. Due to the nature of their business, commercial banks expose themselves to the risks of default from borrowers. Prudent credit risk assessment and creation of adequate provisions for bad and doubtful debts can cushion the banks risk. However, when the level of non- performing loans (NPL's) is very high, the provisions are not adequate protection (Chatterjee, 2005).

Credit is derived from a Latin word "Credere" meaning trust. When a seller transfers his wealth to a buyer who has agreed to pay later, there is a clear implication of trust that payment will be made at agreed date (Achou & Tenguh, 2008). Major causes of serious banking problems are directly related to lax credit standards for borrowers. Banks as financial institutions extend credit to their customers in form of loans, overdrafts, off balance sheet activities i.e. Letter of credit (LC) guarantees, and credit card facilities. Banks grant credit to enhance their revenues streams, maintain a competitive edge, to act as its bargaining power in the industry, as the industry practice as well as to enhance the relationship with their customers. Credit risk management (CRM) in a financial institution starts with the establishment of sound

lending principles and an efficient framework for managing the risk. Policies, industry specific standards and guidelines, together with risk concentration limits are designed under the supervision of risk management committee. These policies, standards and procedures also govern how credit risk is measured, monitored, reported and controlled. As market conditions change rapidly, adequacy and effectiveness of internal controls should be reviewed regularly to manage the credit risk effectively. Risk management is defined as the process that bank puts in place to control its financial exposures (Santimero, 1997).

A credit risk is the risk of default on a debt that may arise from a borrower failing to make required payments. Credit risk is one of the most significant risks that banks face, considering that granting credit is one of the main sources of income in commercial banks. The management of the credit risk related to that credit affects the profitability of the banks. The importance of credit risk management in banks is due to its ability in affecting the banks' financial performance, existence and growth (Yousuf, & Felfoldi, 2018).

The main source of credit risk includes, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, massive licensing of banks, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank (Diaz, 1994). An increase in bank credit risk gradually leads to liquidity and solvency problems. Credit risk management can be defined as identification, measurement, monitoring and control of credit risk arising from the possibility of default in loan payment. Through effective management of credit risk exposure banks not only support the viability and profitability of their own business but also contribute to systemic stability and to an efficient allocation of capital in the economy. Mekasha argued that credit risk management maximizes banks' risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the impact of credit risk management on banks' profitability. Furthermore, bank's profitability is inversely influenced by the level of loans and advances, non-performing loans and deposits thereby exposing them to great risk of liquidity and distress (Mekasha, 2011).

Credit risk management in the banking sector is important not only because of the Global Financial Crisis (GFC) experienced in recent years but also due to its greater impact on bank's financial performance, growth and survival. After global financial crisis of 2007-2008, the credit portfolio management function has become most crucial functions of the bank and financial institutions. The Basel III, third instalment of Basel accord was developed after crisis to strengthen bank capital requirements by increasing bank liquidity and decreasing bank leverage that encourages banks to measure credit risk of bank's portfolios. The Basel committee also raises an issue concerning the application of the risk weights used in the capital adequacy framework to determine exposure to risk assets for the purpose of determining large credit exposure (Kwadwo, 2020).

Profitability is the primary goal of commercial banks. Without profitability the bank will not survive in the long-run. A profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Important changes in the operating environment particularly credit risk is likely to affect bank profitability. Empirical analysis finds that both bank- specific as well as macroeconomic factors are important determinants in the profitability of banks (Mekasha, 2011).

The relationship between credit risk and commercial banks performance has been the concern of emerging studies both in developed and developing countries. The relationship between credit risk and commercial banks performance has been the concern of various studies that prove that credit risk is among the major factors affecting profitability performance of commercial banks, so the reality of Nepalese commercial banks should be considered on this issue. Credit risk management is an important predictor of bank financial performance. Thus, success of bank performance depends on effectiveness of credit risk management. With the growth rate of banking industry from the 1984 A.D., the risk on banking has also made a mark simultaneously. Virtually all banks have suffered from the credit risk, which is associated with the non-payment of loan by the borrowers. Nepal Bank Limited and Rastriya Banijya Bank are the greatest victims of such risk, leading these banks to have negative net worth. That is why, this study is mainly focused on the impact of credit risk management on profitability of the commercial banks.

Credit is the amount of money lent by the creditors (banks) to the borrower either on the basis of security or without security. Credit and advances is an important item on the asset side of the balance sheet of commercial bank. Bank earns interest on credit and advances which is one of the major sources of income for banks. Bank prepares credit portfolio; otherwise it will not only effect debts but also affect profitability adversely. Credit is regard as the most income generating assets especially in commercial bank. It also regarded as the heart of commercial bank in the sense that, it occupies large volume of transactions. It covers the main part of investment. It is the main factor for creating profit and determining the profitability. It should affect the overall economy. While the commercial banks have faced difficulties over the years for a multitude of reasons, the major cause of serious financial problems continues to be directly related to credit standard-s for borrowers, poor portfolio risk management or lack of attention to change in the economic circumstances and competitive climate. The credit decision should be base on thorough evaluation of the risk conditions of the lending and the characteristics of the borrower (Varshney & Swaroop, 1994).

The problem of credit risk management, as well as carrying out a quantitative assessment and analysis of the credit risk and rating of borrowers, is relevant to all banks involved in lending to individuals and legal entities. In general, when commercial banks grant loans to individuals and legal entities, the credit risk involved is characterized by the following quantitative parameters: risk as the probability of the borrower's failure to repay the loan; acceptable risk; average risk; possible losses given loan default; the average value of losses; the maximum allowable losses; the number of loans given by the bank; the possible number of different loans the bank can give; the number of problem loans.

The impact of credit risk management on profitability of commercial banks is therefore one the most important tasks for the financial liquidity and stability of banking sector in connection with increased sensitivity of banks to the credit risks and changes in the development of prices of financial instruments. The most significant impact on performance of the bank has just financial risk. The unsystematic risks have a higher impact on performance of the bank as systematic risks (Nguyen, 2020). Therefore, this study examines the impact of credit risk management on profitability of Nepalese commercial banks.

1.2 Problem Statement

The problem of credit risk management, as well as carrying out a quantitative assessment and analysis of the credit risk and rating of borrowers, is relevant to all banks involved in lending to individuals and legal entities. In general, when commercial banks grant loans to individuals and legal entities, the credit risk involved is characterized by the following quantitative parameters: risk as the probability of the borrower's failure to repay the loan; acceptable risk; average risk; possible losses given loan default; the average value of losses; the maximum allowable losses; the number of loans given by the bank; the possible number of different loans the bank can give; the number of problem loans.

The credit creation process exposes the banks to high default risk, which might lead to financial distress including bankruptcy. All the same, beside other services, banks must create credit for their clients to make money, grow and survive stiff competition at the market place. The principal concern of this study is to ascertain to what extent banks can manage their credit risks, what tools or techniques are at their disposal and to what extent their performance can be augmented by proper credit risk management policies and strategies by analyzing the latest data of different commercial banks.

Nepalese commercial banks have faced many difficulties over the year for a multitude of reasons; the major cause of serious banking problem continue to be directly related to change that being due to many political turmoil and change in rules and regulations. One such example can be the global financial crises of 2008 that is affecting the economy of the country till date. At present time Nepalese commercial banks have faced COVID-19 which is affected by whole world. Major problem of the banking sector in Nepal is the Credit Risk. Poor lending practices, which are indicated by poor financial analysis of borrowers, inadequate or substandard collateral and improper portfolio analysis, poor tracking of credit and intention of borrowers to default have resulted in the high amount of Non-Performing Loan of major commercial banks (Thakur, 2021).

The degree of possible risk in the banking sector is of major concern to the various stakeholders including the top management who operates the banking activities, depositors whose funds are being used and regulatory bodies who are responsible for the protection of banking system. The commercial banks operating in Nepal have

faced difficulties over the past years for multiple reasons. The major reasons identified were relaxed credit standards and poor portfolio risk management. Most of the commercial banks in Nepal are evidenced to have approved loans without proper examinations which may lead to increase in a number of loan defaults and non-performing loans (Thapa, 2017).

In addition, it is contended that the existing credit risk management procedures are inadequate to handle the existing credit risk challenges in Nepal. Nevertheless, in recent years, the central bank of Nepal has introduced policies to improve bank performance and has taken measures to minimize the negative effect of lending and this is done by increasing capital requirement for banks and facilitating the merger of financial institutions to build resilient and robust financial system. In a country where the financial sector is dominated by the commercial banks, any failure in the sector has an immense implication on the economic growth of the country. Thus, there is need for the Nepalese banking industry to ensure that effective strategies will be implemented to minimize risk as well as maximize financial and market returns. The study aims at answering the following research questions:

i) What are the practices of credit risk management in Nepalese commercial bank?
ii) Is there any relationship between credit risk management and profitability of commercial banks in Nepal?
iii) What is the impact of credit risk management on profitability of Nepalese commercial banks?

1.3 Objectives of the Study

The main objective of this research is to investigate how credit risk management has impact on the profitability of commercial banks of Nepal. Thus, the general objective of this study is to assess the role of risk management on profitability of commercial bank in Nepal. The specific objectives are:

i. To assess the indicators of credit risk management and profitability of Nepalese commercial banks.
ii. To examine the relationship between credit risk management and profitability of commercial banks in Nepal.

iii. To analyze the impact of credit risk management on profitability of Nepalese commercial banks.

1.4 Rationale of the Study

At present the commercial banks are gaining a wide popularity through their efficient management and professional services and playing an important role for the economic growth. This study provides such information which is useful for shareholder's management bodies of the bank and outsiders i.e. other financial institutions, potential investors, stock brokers etc. The success of any organization is largely dependent on how properly the organization can manage the risk. Banking sector involves several risks, which need to be handled promptly for the survival and growth. As this research is made mainly to analyse the credit risks and their management in reference to NRB directives and measures, it provides valuable insight to different stakeholders about the major problems of banks and bank's action for its management. The success of any organization is largely dependent on how properly the organization can manage the risk. Banking sector involves several risks, which need to be handled promptly for the survival and growth. As this research is made mainly to analyze the credit risks and their management in reference to NRB directives and measures, it will provide valuable insight to different stakeholders about the major problems of banks and bank's action for its management. The key stakeholders who will be largely facilitated by this research includes,

- Commercial banks under study would highly benefited by this research. This research identifies their current credit risk management styles, NRB guidelines on credit risk management and organization of basic compliance of such guidelines etc. Further, the banks would know not only the current performance but also the idea about their strength and weaknesses.
- Individuals, who have keen interest in Nepalese economy and banking sector and would benefited. This research provides an insight into the organizational credit risk management patterns within the standards set by NRB.
- Policymakers would also be benefited as this paper identifies the problems in credit risk management and identifies the need for formulation of new policies or amendment of old policies.

- Investors, management, employers, policy maker, government, researcher, depositors and borrowers also know about the credit risks with these banks to carry out business.

1.5 Limitations of the Study

Some of the basic limitations of the study are as follows.

- Out of 20 commercial banks only three banks namely Siddhartha Bank Ltd (SBL), Sanima Bank Ltd. (Sanima) and Laxmi Sunrise Bank Ltd.(LSBL) are taken as sample for study.
- The study is based only on secondary data taken from annual financial report of sample banks.
- The evaluation is made through the analysis of financial statement published and presented by the banks. Therefore generalization of the whole banking industry cannot be made.
- The secondary data of only ten years has been taken from the establishment of the bank i.e. from 2012/13 to 2022/23. Inaccessibility of sufficient information also limits the conclusion drawn from study.
- Only limited financial and statistical tools are used for the study.
- This research is limited only to the study of commercial banks of Nepal and excluded the other types of financial institution.
- This study has assessed the impact of credit risk management on financial performance of Nepalese commercial banks.

CHAPTER II

REVIEW OF LITERATURE

The researcher has reviewed various related studies and NRB directives for the study. Firstly, the review on the concept of risk and credit risk management is briefly discussed as below:

2.1 Theoretical Review

Theory of Risk

Risk refers to uncertainty on the investment faced by the investors. It is the possibility that actual outcomes may be different from those expected. Risk can be defined as the possibility of deviation of the actual return from the expected return. Kupper (2000) defines risk as the volatility of corporation's market value. Risk management, on the other hand, is the process of measuring or assessing risk and then developing strategies to manage the risk. In general, the strategies employed include transferring the risk to another party, avoiding the risk, reducing the negative affect of the risk, and accepting some or all of the consequences of a particular risk (Kupper, 2000). Risk and uncertainties are the integral part of banking business. In banking sector, risk refers to the possibility that the bank will turn into liquidation. There are several inherent risk in banking which can be classified into three broad categories i.e. Credit Risk, Market Risk and Operational Risk.

Primarily, risk in the banking context is credit risk through lending, which occupies about 60% of total risk portfolio. Therefore, this study is mainly focused on the credit risk. However, the brief introduction of Market Risk and Operational Risk have also been included. The major sources of risk in banking business are briefly discussed as below (Poudel, 2012):

i. Credit Risk

Credit risk is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. Anthony Saunders defines the credit risk as "the risk that the promised cash flows

from loans and securities held by FIs (Financial Institutions) may not be paid in full". Credit risk involves ability or unwillingness of a customer or counterparty to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions. Santomero (1997) views credit risk is generally made up of transaction risk or default risk and portfolio risk. The portfolio risk in turn comprises intrinsic and concentration risk. The portfolio risk depends on both external and internal factors. The external factors are the state of the economy, wide swings in commodity/equity prices, foreign exchange rates and interest rates, trade restrictions, economic sanctions, Government policies, etc. The internal factors are deficiencies in loan policies/administration, absence of prudential credit concentration limits, inadequately defined lending limits for Loan Officers/Credit Committees, deficiencies in appraisal of borrowers' financial position, excessive dependence on collaterals and inadequate risk pricing, absence of loan review mechanism and post sanction surveillance, etc (Santomero, 1997).

Another variant of credit risk is counterparty risk. Counterparty risk comes from non-performance of a trading partner. The non-performance may arise from counterparty's refusal to perform due to an adverse price movement caused by systematic factors, or from some other political or legal constraint that was not anticipated by the principals. Diversification is the major tool for controlling non-systematic counterparty risk (Yusuf, 2003).

Counterparty risk is like credit risk, but it is generally viewed as a more transient financial risk associated with trading than standard creditor default risk. In addition, counterparty's failure to settle a trade can arise from other factors beyond a credit problem (Roger, 2003).

So, the goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Bank should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization (Santomero, 1997).

ii. Market Risk

Market risk is the risk incurred in the trading of assets and liabilities due to changes in interest rates, exchange rates, and other asset prices. So, Market risk is exposure to the uncertain market value of the firm's asset. Major factors affecting Market risk are:

a. Liquidity Risk:

Anthony Saunders says "Liquidity risk arises whenever financial institutions' liability holders, such as depositors or insurance policyholders, demand immediate cash for their financial claims". When liability holders demand cash immediately – that is, put their financial claims back to the FI – the FI must either borrow additional funds or sell off assets to meet the demand for the withdrawal of funds. An institution is said to have liquidity if it can easily meet its liability holders' demand for cash either because it has cash on hand or can otherwise raise or borrow cash (Chatterjee, 2005).

In banking sector, Liquidity risk is created when banks hold different sizes of assets and liabilities and mismatch occurs in maturity of the assets and liabilities. Extreme illiquid asset in bank may result in bankruptcy whereas excess liquid asset may carry interest rate risk over the period of time. As it is fatal risk, prudent liquidity management is the primary function of banking sector. Liquidity management is also to make sure that expected shortfall amounts are funded at a reasonable cost, ensure excess fund are invested properly with reasonable returns and without carrying any interest rate risk to the bank (Achou, & Tenguh, 2008).

b. Interest Rate Risk (IRR)

Interest rate risk is the risk incurred by a financial institution when the maturities of its assets and liabilities are mismatched. Interest Rate Risk is the probability of decline in earnings, due to the adverse movements of the interest rates in various markets. The applicable interest earned on assets and liabilities and hence net interest margin is the function of market variables and it may get changed overnight or over a period of time according to the market situation. Changes in the interest rate can significantly alter net interest income depending on the mismatch of assets and

liabilities held by the bank. Changes in interest rates also affect the market value of bank's equity (Roger, 2003).

c. Foreign Exchange Risk

Foreign exchange risk is the risk that exchange rate changes can affect the value of a bank's assets and liabilities denominated in foreign currencies. The bank is also exposed to foreign exchange risk, which arises from the maturity mismatching of foreign currency positions. In the foreign exchange business, banks also face the risk of default of the counterparties or settlement risk. While such type of risk crystallization will not cause principal loss, banks may have to undertake fresh transactions in the cash/spot market to replace the failed transactions. Thus, the bank may incur replacement cost, which depends upon the currency rate movements (Chatterjee, 2005).

iii. Operational risk

Operational risk is associated with the problems of accurately processing, settling, and taking or making delivery on trades in exchange for cash. It also arises in record keeping, processing system failures and compliance with various regulations. The Basel Committee on Banking Supervision, Basel September (2000), defines operational risk as "the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events (Chatterjee, 2005).

Operational risk arises from inadequate control systems, operational problems and breaches in internal controls, fraud and unforeseen catastrophes leading to unexpected losses for a bank. Many of the operational-risk-related functions such as regulatory compliance, finance management, frauds, IT, legal, and insurance are carried out by the staff and thus human resources itself becomes a cause for operational risk (Yusuf, 2003).

Review of NRB Directives Related to Credit Risk

The main focus of this study is to analyze the directives of Nepal Rastra Bank related to Credit Risk Management of Commercial Banks. The directives issued from time to time are one of the tools used by the central bank to control and monitor the

commercial banks. In the present context, the directives are issued by NRB quite regularly. In 2021, NRB, by using the rights given by the Nepal Rastra Bank Act 2058, has issued unified directives to regulate all three categories of financial sectors in Nepal to ensure that the banking industry functions as per the international standard and also to have more effective control mechanism for overall financial sector. In this new unified directive, loan classification and provisioning of loans of financial institutions are mentioned on Directive with the objective to minimize the possible risks associated with credits extended by financial institutions in the form of overdraft, loans and advances, bills purchased and discounted. Therefore, as per this new unified directive No. 2, banks should classify the loans and advances on the basis of aging of principal amount into the following 4 categories (NRB, 2023).

Directive No.2-Classification of Loans and Advances and Loan Loss Provision

Classification of Loans and Advances:

a. **Pass Loan;**

Loan and advances which principal amount payment are not due yet or if the due has not exceeded the due date for a period of 3 months are included under this category. Such loans and advances are defined as Performing Loan.

b. **Substandard Loan**

All the loans and advances, which due principal amounts have exceeded the due date for a period of 3 months to 6 months are included in this category.

c. Doubtful Loan

All the loans and advances, which principal amounts are due for a period of 6 months to 1 year, are included under this category.

d. Bad Loan

All the loans and advances which principal amount has crossed the due date for a period of more than 1 year as well as the advances which have least possibility of

recovery or considered unrecoverable and those having thin possibility of even partial recovery in future shall be included in this category (NRB, 2023).

i) Pass Loans and advances are defined as Performing Loans.
ii) Loans and Advances falling under the category of Sub-standard, Doubtful, and Bad Loan are classifieds and defined as Non- Performing Loan.

Loan Loss Provisioning

1. The loan loss provisioning on the basis of the outstanding loans and advances and bills purchases are classified as per the new unified directives 2080, shall be provided as follows (NRB, 2023):

Classification of Loan	Loan Loss Provision
Good	1 Percent
Watch list	5 Percent
Substandard	25 Percent
Doubtful	50 Percent
Bad	100 Percent

Loan loss provision set aside for performing loan is defined as "General Loan Loss Provision" and Loan Loss provision set aside for Non-Performing Loan is defined as "Specific Loan Loss Provision".

Where the banks provide for loan loss provisioning in excess of the proportion as required under directives of NRB, the whole amount of such additional provisioning may be included in General Loan loss Provision under the supplementary Capital.

Directive No 3 (Single obligor limit)

Single obligor limit refers to the limit of credit facility to a single person, a firm, a company or a group of borrowers. That means, there is certain limit beyond which a bank cannot provide credit facilities to a borrower or the borrowers who comes under the same group. NRB has provisioned single obligor limit while providing credit facilities by the bank. According to unified directive No 3, the single obligor limit for

the fund-based loan is 25 % of core capital whereas for non-fund based loan is 50 % of core capital (NRB, 2023).

The main reason of this provision is to protect bank from suffering losses due to investing in single client. In another word, this directive is intended to diversify the concentration risk (NRB, 2023).

Loan Loss Provision for minimizing concentration risk

According to NRB Directives, if any firm, person or group of borrowers is provided the credit more than the limit of single obligor, the bank should have to make 100 % provision for the loan exceeding the limit (NRB, 2023).

Sector wise lending

NRB has issued a directive for the commercial banks to send sector wise lending report on a monthly basis. The main objective of this report is to identify the different sectors in which the bank has extended its credit (NRB, 2023).

Security wise Lending

NRB has issued a directive for the commercial banks to send security wise lending report on a monthly basis. The main objective of this report is to identify the different securities on the basis of which the bank has extended its credit (NRB, 2023).

Loan Concentration on Single Sector

According to NRB directive No. 3, if the commercial bank has extended the credit facilities more than 100 % of core capital in single sector, such loan should have to be approved by the board of directors (NRB, 2023).

Directive No. 1-Capital Adequacy Ratio

Capital Adequacy Ratio (CAR) is the proportion of Capital Fund or Shareholders equity on the total risk weighted asset of a bank. In other words, it is the capital portion, which is used to finance the asset. The total risk weighted asset, on the other hand, includes both on & off balance sheet items, which has been rated with certain

percentage of risk. The risk weight of asset ranges from zero for cash, balance at NRB and investment in government bonds to 100 % for loans and advances. The higher the risk weighted asset means lower will be the capital adequacy ratio as CAR is the ratio between Capital fund and Risk Weighted Asset. According to unified directive 2080, the capital fund includes two types of capital:

A. Primary Capital

Primary capital refers to core capital of a bank, which includes the share capital employed by the shareholders and all the reserve maintained by a bank. Primary capital includes:

Primary Capital

1) Paid Up Capital
2) Share Premium
3) Non-Redeemable Preference Share
4) General Reserve Fund
5) Retained Earnings
6) Capital Redemption Reserve
7) Net Profit after Provision, Tax & Bonus (Current Year)
8) Capital Adjustment Fund
9) Other Free Reserve
10) General Reserve Fund

B. Supplementary Capital

Supplementary Capital refers to all the reserves bank has made for specific purpose, such as loan loss, foreign exchange loss etc. The supplementary capital includes:

Supplementary Capital

1) General Loan Loss Provision (Good Loans)
2) Asset Revaluation Reserve
3) Hybrid Capital Instrument
4) Unsecured Subordinated Term Debt
5) Exchange Equalization Reserve
6) Additional Loan Loss provision
7) Investment Adjustment Reserve

C. Capital Fund

Capital Fund includes both the primary and supplementary capital. It can be stated in equation as below:

Capital Fund = Primary Capital + Supplementary Capital

Risk Weighted Asset, on the other hand, refers to the all the on and off balance sheet assets, which has provided certain percent of risk weight that ranges from zero for cash, balance with NRB, investment in government securities to 100 percentage for loans and advances, fixed asset etc.

Risk Weighted Asset includes both the on and off balance sheet assets. On balance sheet asset includes three types of risk-weighted asset (i.e. 0 %, 20% and 100%). Zero percentage risk weighted assets include cash and bank balance, gold (tradable), investment in NRB and Government Bonds, loan against own bank's fixed deposit receipts and government bonds, Interest receivable on National Saving Bonds. 20 % risk weighted asset includes balance with local and foreign banks, loan against other bank's fixed deposit receipts, money at call, loan against internationally rated bank's guarantee and other investment on internationally rated banks. 100% risk weighted asset includes investment on shares and debentures, loans and advances, fixed assets, other investment, all other assets (excluding tax paid and accrued interest receivable.)

Off balance sheet assets includes four types of risk-weighted asset (i.e. 0%, 20%, 50% and 100%). Bills collection has 0 % risk. Letter of credit with maturity period less than 6 months and guarantee against counter guarantee of international rated foreign banks have 20 % risk. 50 % risk weighted asset includes letter of credit with maturity period more than 6 months, bid bond, underwriting and performance bond. 100 % risk weighted items include advance payment guarantee, financial guarantee, other guarantee, irrevocable loan commitment, contingent liability on income tax and acceptance and other contingent liability (NRB, 2023).

The Capital Adequacy ratio of a bank is calculated as below:

a. Capital Adequacy Ratio for Core Capital

Capital Adequacy Ratio = Core Capital
Total Risk Weighted Asset

b. Capital Adequacy Ratio (CAR) for Total Capital Fund

Capital Adequacy Ratio = Capital Fund
Total Risk Weighted Asset

2.2 Empirical Review

Sah and Pokharel (2023) analyzed the financial performance of Nepalese commercial banks and risk management. Bank and financial institutions require a method for assessing performance, considering some crucial financial statistics, and identifying strengths and weaknesses. The risk minimization is an effective tool for assessing the performance of bank and financial institution. This model studied Capital adequacy, Asset quality, Management quality, Earnings capacity, and Liquidity condition of sample banks. The study has made a modest attempt to use the CAMEL technique to examine the performance of three commercial banks in Nepal from 2011/12 to 2020/21. Rastriya Banijya Bank, a wholly government-owned, Nepal SBI Bank Limited (NSBIL) joint venture, and Prime Commercial Bank Limited (PCBL), privately owned, were considered as a sample banks for the analysis. The result explained that PCBL and NSBIL could keep their risk-weighted assets at more excellent Tier I and II capital levels, demonstrating their financial soundness. This also revealed that NSBIL could support a higher percentage of well-performing loans. RBBL, NSBIL, and PCBL, all BFIs maintained average returns on shareholder equity and returns on assets. It also found PCBL was first in terms of the ratio of liquid assets to total deposits, followed by NSBIL banks and RBBL. In light of this, this research will be tremendously instructive to academics, researchers, and bank management. They can utilize it to create a financial plan for the effectiveness of the bank performance as a whole.

IJCRT (2022) conducted study on credit risk management analysis of public banks in India. The study stated reliable indicator and metric for determining whether an economy's economic operations are sound is performance review of the banking sector. This study is solely based on secondary data that was gathered from the Reserve Bank of India. The performance and financial soundness of a few Indian

public banks have been assessed in the current study for the years 2018 through 2022. The financial health of the chosen banks has been examined using the CAMEL technique. To arrive at the result through the comparison and significant examination of several CAMEL factors, Composite Rankings, mean (μ), median (Med.) and standard deviation (σ) have been utilised. According to the CAMEL analysis, State Bank of India is placed first, followed by Union Bank of India, while Bank of Baroda took the third spot. Punjab National Bank is in the fourth spot, and the last spot was acquired by Bank of India. The State Bank of India is ranked first among the other banks included in the study when all of CAMEL's criteria are taken into account, according to the model. While State Bank of India lags behind in terms of capital adequacy and liquidity, it performs well in terms of asset quality, management effectiveness, and earning capacity.

Chhetri (2021) analyzed the effect of Credit risk management on financial performance of Nepalese commercial banks. The main objective of this study is to investigate the effect of credit risk on the financial performance of commercial banks in Nepal. The panel data of seventeen commercial banks with 85 observations for the period of 2015 to 2020 have been analyzed. The regression model revealed that non – performing loan (NPLR) has negative and statistically significant impact on financial performance (ROA).Capital adequacy ratio (CAR) and bank size (BS) have negative and statistically no significant impact on financial performance (ROA). Credit to deposit (CDR) has positive but no significant relationship with the financial performance (ROA) and the study concluded that the management quality ratio (MQR) has positive and significant relationship with the financial performance (ROA) of the commercial banks in Nepal. The study recommends that, it is fundamental for Nepalese commercial banks to practice scientific credit risk management, improve their efficacy in credit analysis and loan management to secure as much as possible their assets, and minimize the high incidence of non-performing loans and their negative effects on financial performance.

Kwadwo (2020) studied on credit risk management and profitability in select savings and loans companies in Ghana. The objective of the study are: to study and analyse the effect of credit risk management indicators on profitability of S&L Companies and to find out the impact of Non-performing Loans on the operational activities of

the S&L Companies. The study used both primary and secondary data. In order to ensure bias minimisation and fair representation of the population, the researcher employed the probability-sampling technique. The sampling of the Savings and Loans Companies for this study was through the systematic random sampling method. The selection of respondents on the other hand was through the stratified random sampling technique. The researcher used a descriptive survey for the study. The research utilised the quantitative method of data analysis. The SPSS analytical software was used for the analysis of both the primary, and the secondary data. The samples 254 out of the 695 staff of the seven selected S&L Companies were taken.

The findings indicated that NPLR had negative and statistically significant relationship with both ROA and ROE (profitability). This indicates the severity of the impact of deterioration in asset quality (NPL) on the profitability of S&L companies in Ghana. The negative relationship of NPL ratio with both ROA and ROE was an expected outcome since non performing assets has accompanying cost such as recovery cost, and cost of provision for bad debts, which erodes the profit of the lending institutions. In addition, it was found that a negative and insignificant relationship existed between Loans and Advances to Deposit ratio (LTDR) and ROE but had a positive and insignificant relationship with ROA. The LTDR is a measure of how much depositors money is used to finance credit activities so the higher the ratio the more depositors fund is used and additional revenues generated outside the current assets of the company hence, the positive relationship between LTDR and ROA. Bank size (LNTA) had a negative and insignificant relationship with ROA but related positive and insignificant with ROE.

Nguyen (2020) studied on credit risk control for loan products in commercial banks: Bank for Investment and Development of Vietnam. The objectives of the study are: to measure customers' credit quality and to identify types of borrower and types of borrowing so that banks can apply appropriate lending policies. The study used secondary data from desktop research and primary data from interviews, qualitative research. The secondary information included the credit policies, lending process, methods or system that the case bank is using in credit risk management. Data had analyzed straightly from the case bank's internal documents that related to credit risk management. In addition, the study used findings which are from the case bank's

annual reports and local government regulations. The primary data, which is from the interviews with the case bank's employees and supervisor would also be conducted. The outcome of this research is expected to have opinions from respondents who work for the case bank, banking supervisors who evaluate the case bank's performance and the author's opinions. The SPSS analytical software was used for the analysis of both the primary, and the secondary data.

The findings indicated that in the world of banking, competition between commercial banks is increasing more and more. Lenders are trying to satisfy customers in various credit services, which include lending services. To keep themselves in the play, banks focus on improving credit growth However, higher credit growth will not truly bring higher profits if banks fail to manage credit risk. This thesis studies credit risk control for business loan products and aims to identify different approaches to control the risk effectively. The thesis includes theories that relate to credit risk management. For the empirical part, a mixed research method of qualitative and desktop research is used to study the credit risk issue of a case bank, Bank for Investment and Development of Vietnam (BIDV). Qualitative researches are carried out by interviews via email with the target bank's officers and its supervisors. In addition to primary data from the interviews, the research includes secondary data from reliable sources such as the case bank's annual reports, local government regulations, and international banking standards. With regard to BIDV, firstly, its assets classification process follows old local credit regulations which need to be amended. Secondly, the credit organization is facing difficulties in checking credit profile due to the lack of a transparent information system. Thirdly, loan covenants are used to supervise and monitor borrowers, however, they have not been utilized. Out of these is sues, the State Bank of Vietnam is recommended to revise and adjust the assets classification regulation and consider to grant more rights to the state-owned bad bank, Vietnamese Assets Management Company, to support credit risk management in the commercial banking sector. In terms of BIDV, investments in building transparent information technology system are fundamental. Besides that, the lender should offer more training program.

Shahzad (2019) analyzed the influence of credit risk management strategies on the performance of commercial banks. The objectives of the study are to determine the most important variables that underpins the credit risk assessment models of banks in

the UK and the UAE; and to determine the extent to which credit risk assessment strategies and techniques and profitability are linked in UAE and UK banks. The research prioritised an 'action research' design that used both quantitative and qualitative data within a mixed methods research design. Using non-probability convenience sampling, primary data was first collected from 100 middle-level bank managers (50 managers from the UK and 50 managers from the UAE) by means of a self-administered questionnaire. Qualitative data was subsequently collected from 20 top managers (10 managers from Emirati banks and 10 managers from UK banks) through semi-structured interviews. From the analysis of this data, 18 key variables were identified and defined across three categories: credit risk management strategies, factors influencing risk management and commercial bank profitability.

This study undertakes a comparative investigation of the influence and adoption of credit risk management strategy on the performance of commercial banks in the United Arab Emirates (UAE) and the United Kingdom (UK). The research assesses the uses and approaches to credit risk management in the UAE in comparison to the UK, beginning with a thematic literature review that identified key theories, strategies and principles of the extant credit risk assessment literature, whilst contextualising the distinctiveness of Islamic banking. Adopting a deductive ontological and positivist epistemological position, the research prioritised an 'action research' design that used both quantitative and qualitative data within a mixed methods research design.

Ali and Dhiman (2019) studied on the impact of credit risk management on profitability of public sector commercial banks in India. The objective of the study is to analyze the effect of credit risk management indicators on profitability. The study used panel regression model. The study used secondary data from desktop research and primary data from interviews, qualitative research. Credit risk was measured by the capital adequacy ratio, and non-performing loans whereas profitability was measured by the ROE. The research focuses on top ten public sector commercial banks selected on the basis of total assets by using secondary data. The empirical findings indicate that ROA (profitability) is positively related to CAR, management quality and earnings ability whereas it is found to be negatively related to AQ and liquidity. Results of the research suggest that the independent variables of the sampled public sector banks significantly impact the profitability during the study period.

Pradhan and Shah (2019) studied on credit risk management of commercial banks in Nepal. The objectives of study are to measure credit risk level in the commercial banks, to analyze the banks' credit risk management policy and to examine different obstacles or problems resulting from credit risks. Based on a descriptive research approach the study has used survey-based primary data. The study is quantitative and descriptive in nature, as it elaborates the association between obstacles faced in credit risk management of banks. Primary data has been used for analyzing the relationship between dependent and independent variables. The study identified the higher-level managers working in commercial banks of Nepal located in Kathmandu as its target population.

The study found that credit risk mitigation measures and credit risk management practices are positively associated with loan repayment in the banks, while obstacles have no relation with the loan repayment. Findings have justified the study objectives and the underlying hypotheses. The study also justifies that credit risk iteration as well as credit risk management practices has been well implemented in Nepali banks as discovered from the mean scores of the responses. Thus, it can be concluded that credit risk management such as complying with credit risk policy, clearly defined roles and responsibility for the responsible employees of the credit risk department. Similarly, banks should provide the employees with required skills and knowledge to help them perform regular activities and make tactful decisions to ensure profitability and performance of the bank. Commercial banks tactfully follow the credit risk mitigation measures so as to avoid the risk of having NPAs and LLPs.

Yousuf and Felfoldi (2018) analyzed the effect of credit risk management on profitability in private banks in Syria. The objectives of the study are: to examine the credit quality and identify types of borrower and types of borrowing. The study was based on secondary data. Data were analyzed by using descriptive analysis and statistical analysis. The research shows that there is a statistically significant relationship between capital adequacy and profitability. The capital adequacy ratio affects profitability negatively. Non-performing loans do not affect profitability.

Konovalova, Kristovska, & Kudinska (2017) studied on credit risk management in commercial banks. The objectives of the study are: to determine the level of risk represented by different groups (classes) of retail clients (borrowers) and to reduce

and prevent credit risk in the future as well as to improve the management of banking risks. The study used both primary and secondary data. 100 samples have been used. Descriptive and analytical research designs were used. The article proposes a model of credit risk assessment on the basis of factor analysis of retail clients / borrowers in order to ensure predictive control of the level of risk posed by potential clients in commercial banks engaged in consumer lending. The main results of the study are the creation of a model of borrowers' internal credit ratings and the development of the methods of improving credit risk management in commercial banks. When lending to individuals (retail clients) the most significant factors affecting the value of the credit risk of a bank are the average income of the borrower, the loan amount, and the loan term. International articles reviewed are also presented in meta table.

Table 1

Summary of Review

S.N	Author (s)	Variables	Methodology	Major Findings
1	Sah and Pokharel (2023)	Dependent variables: ROA and ROE Independent variables: Capital, assets, management, earnings and liquidity	The study was based on secondary information from three selected banks. . The study has made a modest attempt to use the CAMEL technique to examine the performance of three commercial banks in Nepal from 2011/12 to 2020/21.	The study found that NSBIL could support a higher percentage of well-performing loans. RBBL, NSBIL, and PCBL, all BFIs maintained average returns on shareholder equity and returns on assets. It also found PCBL was first in terms of the ratio of liquid assets to total deposits, followed by NSBIL banks and RBBL. In light of this, this research will be tremendously instructive to academics, researchers, and bank management. They can utilize it to create a financial plan for the effectiveness of the bank performance as a whole.
2.	IJCRT (2022)	Dependent variables: ROA Independent variables: Capital, assets, management, earnings and liquidity	The study is solely based on secondary data. To arrive at the result through the comparison and significant examination of several CAMEL factors, composite rankings, mean, median and standard deviation have been used.	The study found that the as per CAMEL analysis, State Bank of India is placed first, followed by Union Bank of India, while Bank of Baroda took the third spot. Punjab National Bank is in the fourth spot, and the last spot was acquired by Bank of India. The State Bank of India is ranked first among the other banks included in the study when all of CAMEL's criteria are taken into account, according to the model. While State Bank of India lags behind in terms of capital adequacy and liquidity.
3.	Chhetri,	Dependent	The panel data of seventeen	The study found that non-

	G.R. (2021)	variables: ROA and ROE Independent variables: CAR, CDR, MQR	commercial banks with 85 observations for the period of 2015 to 2020 have been analyzed. The regression model was used. ROA, Capital adequacy ratio (CAR), and bank size (BS) have been taken as study variables.	performing loan (NPLR) has negative and statistically significant impact on financial performance (ROA).Capital adequacy ratio (CAR) and bank size (BS) have negative and statistically no significant impact on financial performance (ROA). Credit to deposit (CDR) has positive but no significant relationship with the financial performance (ROA) and the study concluded that the management quality ratio (MQR) has positive and significant relationship with the financial performance (ROA) of the commercial banks in Nepal.
4.	Kwadwo, (2020)	Dependent variables: ROA and ROE Independent variables: NPL, CDR, CRR	The study used both primary and secondary data. In order to ensure bias minimisation and fair representation of the population, the researcher employed the probability-sampling technique.	The findings indicated that NPLR had negative and statistically significant relationship with both ROA and ROE (profitability). This indicates the severity of the impact of deterioration in asset quality (NPL) on the profitability of S&L companies in Ghana.
5.	Linh Nguyen (2020)	Dependent variables: ROA and ROE Independent variables: CAR, CDR, MQR	The study used secondary data from desktop research and primary data from interviews, qualitative research. The secondary information included the credit policies, lending process, methods or system that the case bank is using in credit risk management.	The findings indicated that in the world of banking, competition between commercial banks is increasing more and more. Lenders are trying to satisfy customers in various credit services, which include lending services. To keep themselves in the play, banks focus on improving credit growth However, higher credit growth will not truly bring higher profits if banks fail to manage credit risk.
6.	Shahzad Karim (2019)	Dependent variables: ROA and ROE Independent variables: CAR, CDR, NPLR	The research prioritised an 'action research' design that used both quantitative and qualitative data within a mixed methods research design. Using non-probability convenience sampling, primary data was first collected from 100 middle-level bank managers (50 managers from the UK and 50 managers from the UAE)	This study undertakes a comparative investigation of the influence and adoption of credit risk management strategy on the performance of commercial banks in the United Arab Emirates (UAE) and the United Kingdom (UK). The research assesses the uses and approaches to credit risk management in the UAE in comparison to the UK, beginning with a thematic literature review that identified key theories, strategies and principles of the extant credit risk assessment literature.
7.	Pradhan, and Shah (2019)	Credit risk Dependent variables: ROA and ROE Independent	Based on a descriptive research approach the study has used survey-based primary data. The study is quantitative and descriptive	The major findings of the study is that credit risk mitigation measures and credit risk management practices are positively associated with loan

		variables: CAR, CDR, MQR	in nature, as it elaborates the association between obstacles faced in credit risk management of banks. Primary data has been used for analysing the relationship between dependent and independent variables.	repayment in the banks, while obstacles have no relation with the loan repayment. Findings have justified the study objectives and the underlying hypotheses. Thus, it can be concluded that credit risk management such as complying with credit risk policy, clearly defined roles and responsibility for the responsible employees of the credit risk department.
8.	Ali, and Dhiman, (2019	Dependent variables: ROA Independent variables: CAR, CDR, CRR	The study used panel regression model. The study used secondary data from desktop research and primary data from interviews, qualitative research. Credit risk was measured by the capital adequacy ratio, and non-performing loans whereas profitability was measured by the ROE.	The empirical findings indicated that ROA (profitability) is positively related to CAR, management quality and earnings ability whereas it is found to be negatively related to AQ and liquidity. Results of the research suggest that the independent variables of the sampled public sector banks significantly impact the profitability during the study period.
9.	Yousuf and Felfoldi (2018)	Dependent variables: ROA and ROE Independent variables: CAR, CDR, NPA	The study was based on secondary data. Data were analyzed by using descriptive analysis and statistical analysis.	The study found that there is a statistically significant relationship between capital adequacy and profitability. The capital adequacy ratio affects profitability negatively. Non-performing loans do not affect profitability.
10	Konovalova., Kristovska ., Kudinska (2017)	Dependent variables: ROA and ROE Independent variables: CAR, CDR, CRR	The study used both primary and secondary data. 100 samples have been used. Descriptive and analytical research designs were used.	The main results of the study are the creation of a model of borrowers' internal credit ratings and the development of the methods of improving credit risk management in commercial banks.

Thakur (2023) studied a thesis on risk management of commercial bank and financial institution. The objectives of the study are: to analyze the level risk in banking industry; and to examine the interest income and interest payment status of selected banks. The study used secondary data. Descriptive and analytical research designs were used. The study had conducted model experiments using statistical information on credit risk of commercial banks. The study found that risk should be taken as one of the challenges of the banking industry but it is not sufficient to minimize the potential disasters. Banking risk should be managed as a separate part of the management. The study also found that out of all commercial banks operating in the country, Nepal Bank Ltd. and Rastriya Banijaya Bank are operating with nominal

profit, the later turning towards negatives from time to time. Because of non-recovery of accrued interest, the margin between interest income and interest expenses is declining. They have heavy burden of personal and administrative overhead. On the other hand, foreign JVBs are functioning in an extremely efficient way. They are making huge profit year after year. Because of their effective persuasion on long recovery, overdue and defaulting loans have been limited resulting in high margins between interest income and interest payment.

Bhattarai (2022) studied a thesis on restructuring process of commercial bank through credit risk management and responsibility of restructuring team. The objectives of the study are to analyze the credit risk in banking industry and to examine the credit policy and implementation status of selected banks. The study used secondary data. The study used quantitative data. Descriptive research design was used. The study used statistical and financial tools. The study found that increase in interest rate; decreases in economic activities cause decrease in the capacity of debtor and sometimes the debtor is knowingly do not pay back the loan. Other than these reasons in the context of Nepal lack of credit policy, lack of information about the loan holder (three c's capacity, character and capital), unhealthy competition and small market area, causes loan defaults. Default loan increases the resources mobilization cost and reduces the profit earning capacity of the bank. Therefore increases in default loans are the indicator of problematic situation to the bank.

Regmi, (2021) studied a thesis on importance of credit information bureau and its activities. The objectives of the study are: to determine impact of deposit in liquidity and its effect on lending practices, to know the volume of contribution made by both bank in lending and to examine lending efficiency and its contribution in profit. The study used secondary data. Descriptive research design was used. The study used statistical and financial tools. Two commercial banks were taken as sample out of 28 commercial banks. Purposive sampling method was used. The study found in terms of liquidity ratio, current ratio of NSBL is higher than that of NBBL. The ratio of liquid fund to current liability of NSBL is higher than NBBL. The ratio of loans and advances to total assets of NBBL is higher than NSBL. Likewise mean ratio of loans and advances to total deposit of NBBL is higher than NSBL. Among the various measurement of profitability ratio return on equity (ROE) and earning per share (EPS)

reflects the relative measure of profitability. The performance of NBBL is better than NSBL. Return on equity and earning per share of NBBL are higher than that of NSBL in all years. Co-efficient of correlation between deposit and loans & advances of sample banks have positive value. Also co-efficient of correlation between total income and loans & advances of both bank have positive relation. Coefficient of correlation between net profit and loans & advances of NSBL is negative as other variables like increase in interest suspense and loan loss provision affects net profit. Coefficient of correlation between net profit and loans & advances of NBBL is positive.

Shrestha (2020) studied a thesis on credit risk management of commercial banks in Nepal. The objectives of the study are: to analyze the significance and impact of Nepal Rastra Bank's directives on commercial banks; to examine the capital adequacy of selected banks and to examine the relation of capital funds to the other stakes of bank. The study used secondary data. Descriptive research design was used. The study used statistical and financial tools. Two commercial banks were taken as sample out of total commercial banks. Convenience sampling method was used. The study found that capital adequacy Ratio of KBL and Machhapuchhre are 13.40 percent and 12.86 percent respectively, which are more than 9 percent. Banks are following the directives but in same cases such like supplementary capital and balance at NRB there is shortfall. The excurses amount of total deposit in balance of NRB there is shortfalls. The banks have categorized the loan amount into four diffident categories as per NRB's directives. The increasing loan loss- providing amount decreased the profit of the banks. The charge in the single borrower limit has brought down the limits of the fund based and non-fund based loans which have resulted to reduced loan exposure to banks The study found that both KBL and SBI banks has not increased supplementary capital as it has shortfall in comparison with NRB guidelines and to meet the supplementary capital adequacy ratio even though it can be compensated by the excess amount of core capital. Only liquid banks can attract loan core deposit, which helps in reducing interest expenses and give loan to good customer at lower rate, which results in requirement of less provision and high net profit.

Thapa (2019) studied a thesis on credit risk analysis and non-performance assets of Nepalese commercial banks in Nepal. The objectives of the study are: to highlight

Loans and Advances trend in commercial banks, and to point out the amount of NPAs in Nepalese commercial banks. The study used secondary data. Descriptive research design was used. The study used five years data. The study used statistical and financial tools. Commercial banks were taken as sample for the study. The study found that the status of non-performing loan of commercial banks shows that, they are making positive improvement over it. By the end of mid July 2009, the ratio of non-performing loans to total loan and advances declined to 9.65 percent. Total amount of non-performing loan remained to Rs. 22182.9 million in the same year. In the last year the percent and amount of non-performing loan were 14.22 percent and Rs. 26770.42 million respectively. Loans and advances, the major component of assets, constituted the 46.66 percent of total assets in mid July 2009. Similarly, investment and liquid funds, another component of assets, registered the 19.06 percent and 8.98 percent of total assets in the same year.

2.3 Research Gap

From the review of various literatures, it has been found many research work have been done on the study of NRB Directives and its compliance and analysis of credit management through loan loss provision, non-performing loans and capital adequacy; however, very few thesis have been found on the credit risk management which is the most important aspect of the banking sector. So, the researcher can make further research on capital adequacy, concentration risk, collateral risk, and the actual practices followed by the management of Nepalese commercial banks from its own side besides the NRB directives to manage and control the credit risks etc.

Earlier studies and researches on the impact of credit risk management on the profitability of development banks and finance company are carried out on the apparent approach by taking the most common indicators in consideration. Few researches which focused on the impact of credit risk management on the profitability of commercial banks have tried to analyze the impact comparing it with its own financial indicators. The study also reviews statistical tools such as correlation coefficient and regression analyses have been used in most of these studies. This study is different from other researches in terms of sample banks, variables used, data presentation as well as statistical and financial tools used for interpretation and analysis of data.

Hence the study had attempted to fill this gap by measuring the credit risk of LSBL, SBL and Sanima Bank by studying their credit risk management system. This study also aims to find out the organizational structure of LSBL, SBL and Sanima Bank for the proper implementation and compliance of NRB Directives and to manage the credit risk. Therefore, this study is being helpful to those interested parties, scholars, students, teachers and civil society, other stakeholders, business man and government for academically as well as policy perspectives.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology refers to the various sequential steps to be adopted by a researcher so as to obtain answer to the research question. In this chapter, the focus has been made on research design, population and sample, sources of data, data collection techniques, data processing and presentation.

3.1 Research Design

This study employed descriptive and causal comparative research designs to deal with the fundamental issues of credit risk and their management system. This study employs descriptive research design to deal with the fact-finding and searching adequate information associated bank specific variables on credit risk and their management system of Nepalese commercial banks. In addition, causal comparative research design is used to analyze the cause and effect relationship of bank specific variables on credit risk management. Under causal comparative research design correlation analysis is used to understand the directions, magnitudes and forms of observed relationship.

3.2 Population and Samples

For this study all the 20 commercial banks operating in the Nepal are the total population. To fulfil objective of the study, only 3 (Siddhartha Bank Ltd, Sanima Bank Ltd. and Laxmi Sunrise Bank Ltd.) were selected using convenience sampling method. These commercial banks are selected as there exists similarities between these banks in many respects such as capital base, profit, deposit, lending and date of establishment. Another basis of selecting the sample banks are the major share holding by Nepalese investors.

3.3 Sources of Data

For this study, secondary data are used. Secondary data are collected mainly from published sources like annual reports, prospectus, newspaper, journal, Internet and other sources. Secondary data published in the annual reports of concerned

organizations are collected through personal visit in respective organization as well as from their web sites. The secondary data from 2013/14 to 2022/23 has been taken.

3.4 Data Collection Techniques

All the annual report published is verified and approved through AGM of respective banks and also approved by NRB Since these annual reports were approved by concerned body the reports were considered authentic to be present in this research. For the credit risk analysis, information is collected through staffs each from SBL, LSBL and Sanima Bank working in Credit and Credit Administration and Control Departments.

3.5 Data Processing and Presentation

The data obtained from the different sources are in raw form. The raw data is processed and converted into required form. For this study, required data are taken from the secondary source (bank's publication) and presented in this study. For presentation, different tables are used. Computation has been done with the help of scientific calculator and computer software program.

Financial Tools

In this study, various ratios have been used as per requirement. The major ratios used in this study include:

i. Loans and advances to Total Risk Weighted Assets Ratio

The ratio of loans, advances and bills purchased to total risk weighted assets measures the volume of loans and advances in the structure of total risk weighted assets (i.e. the total assets after the adjustment of certain degree of risk or the risk assets). Granting Loans and advances always carry a certain degree of risk. Thus this asset of banking business is regarded as risky assets. To determine the adequacy of core capital:

$$\text{Capital Adequacy Ratio} = \frac{\text{Core Capital}}{\text{Total Risk - Weighted Assets}} x100\%$$

ii. Non-performing Loan to Total Loans and advances Ratio

This ratio determines the proportion of non-performing loans in the total loan portfolio. Higher the ratio implies the bad quality of assets of banks in the form of loans and advances

$$\text{NPL Ratio} = \frac{\text{Total Non Performing Loan (TNPL)}}{\text{Total Loan (TL)}} x100\%$$

iii. Loan Loss Provision to Non Performing Loan Ratio

This ratio determines the proportion of provision held to non-performing of bank. This ratio measures up to what extent of risk inherent in NPL is covered by total loan loss provision. The higher the ratio, the better cushion that the bank provides for recovering from loss caused by NPL. This can be presented as:

$$\text{LLP Ratio} = \frac{\text{Total Loan Loss Provision (TLLP)}}{\text{Total Non Performing Loan (TNPL)}} x100\%$$

iv. Loan Loss Provision to Total Loans and Advances

This ratio indicates the amount of Loan Loss Provision, a cushion for the possibility of default, to total loans and advances of a bank. Since high provision has to be made for non-performing loan, higher provision for loan loss reflects increasing non-performing loan in volume of total loans and advances.

$$\text{LLP Ratio} = \frac{\text{Total Loan Loss Provision (TLLP)}}{\text{Total Non Performing Loan (TNPL)}} x100\%$$

v. Core Capital to Total Risk Weighted Asset (RWA)

Core Capital to Total Risk Weighted Asset (RWA) ratio measures the proportion of funding of total Risk Weighted Asset from the core capital. Risk weighted asset refers to all the on balance sheet and off balance sheet asset which has been weighted by some portion of risk. To determine the adequacy of core capital:

$$\text{Capital Adequacy Ratio} = \frac{\text{Core Capital}}{\text{Total Risk - Weighted Assets}} x100\%$$

vi. Supplementary Capital to Total Risk Weighted Asset

This ratio measures how much supplementary Capital a bank has to finance the total RWA. Supplementary Capital refers to the reserve maintained by the bank for specific purpose such as loan loss, foreign exchange loss etc. To determine the adequacy of core capital:

$$\text{Capital Adequacy Ratio} = \frac{\text{Core Capital}}{\text{Total Risk - Weighted Assets}} x100\%$$

vii. Capital Fund to Total Risk Weighted Asset (RWA)

Capital fund to total RWA ratio measures how much RWA is financed from the Capital Fund. To determine the adequacy of core capital:

$$\text{Capital Adequacy Ratio} = \frac{\text{Core Capital}}{\text{Total Risk - Weighted Assets}} x100\%$$

Statistical Tools

In order to get the concrete results from the research, data are analyzed by using different types of tools. So for this study following statistical tools are used:

1. Arithmetic Mean:

Arithmetic mean has been widely used in this study. This tool has been used to calculate the single figure that can represent the whole data for the period. It is computed by using following formula:

Mean ($\overline{X}$) = $\frac{\sum X}{n}$ Where, $\overline{X}$ = Mean

$\sum$ X = Sum of all the Variable X n = Variables involved

2. Standard Deviation:

Standard Deviation is a tool to measure the risk. Here, standard deviation is used as a measure of dispersion. It has also been used as a measure to identify the risk. Higher the deviation greater the risk. It can be computed by using following formula

$$\text{S.D}(\delta) = \sqrt{\frac{1}{\text{n}}\sum\left(\text{X} - \overline{\text{X}}\right)^2}$$

3. Coefficient of Variation

The corresponding relative measure of dispersion is known as the coefficient of variation. The higher co efficient of variations of series refers more variable or less consistency or less uniformed and the series for which coefficient of variation is less, is said to be less variable or more consistent and more uniform variable, it is calculated by the following formula.

$$\text{Co- efficient of variation. (C.V.)} = \frac{\sigma}{\bar{x}}$$

Where, X = (mean of Series), CV = Coefficient of variation

(σ) = Standard deviation

4. Correlation Coefficient

Correlation may be defined as the degree of linear relationship existing between two or more variables. Two variables are said to be correlated is accompanied by the change of another variable. But the correlation coefficient always remains within the limit of +1 to -1. By Karl Pearson, the simple correlation coefficient (between two variables say X and Y) is given by:

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

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, $\sum X^{2=}$ Sum of square observations in series X, $\sum Y^{2=}$Sum of squared observations in series Y and ∑XY= Sum of product of observations in series X and Y

5. Regression Analysis

Multiple regression analysis is a logical extension of the simple linear regression analysis. Instead of single independent variable, two or more independent variables are used to estimate the unknown values of a dependent variable. To examine the impact of credit risk management on profitability, the following multiple regression equation is analyzed. Multiple Regression Model

$\hat{Y}_{ROA} = \beta_0 + \beta_1 X_{CAR} + \beta_2 X_{LLPR} + \beta_3 X_{NPLR} + \beta_4 X_{CRR} + e$

$\hat{Y}_{ROE} = \beta_0 + \beta_1 X_{CAR} + \beta_2 X_{LLPR} + \beta_3 X_{NPLR} + \beta_4 X_{CRR} + e$

Y = profitability (ROA) and (ROE)

X_{CAR}= Capital adequacy ratio

X_{LLPR}= loan loss provision ratio

X_{NPLR}= Non-Performing loan ratio

X_{CRR}= Cash reserve ratio

e= error component

β0= the intercept (constant)

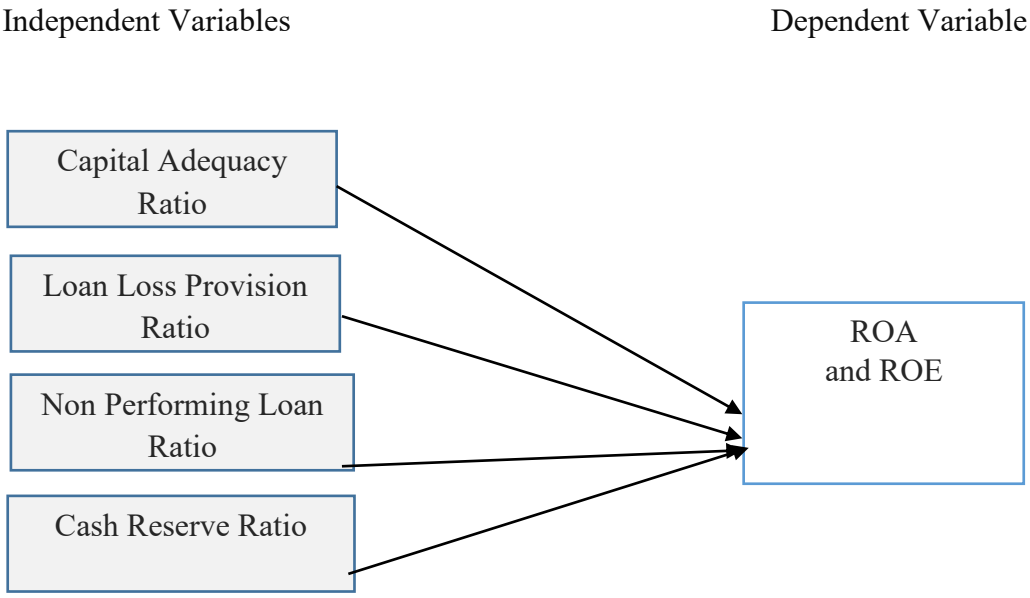
Where β1= regression coefficient of CAR , β2= regression coefficient of LLPR, β3= regression coefficient of NPLR, β4 = regression coefficient of CRR which represents the degree with which bank profitability changes as the independent variable change by one unit variable.

6. 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. r^2 so the coefficient of determination = Square of correlation = (r^2).

3.6 Research Framework and Definition of Variables

The conceptual framework is generally developed based on a literature review of existing studies and theories about the topic. In view of theory and major empirical evidences, it is expected that the profitability (return on equity) and return on assets of commercial banks may affect by credit risk management (capital adequacy ratio, loan loss provision ratio, non-performing loan ratio and cash reserve ratio). The conceptual framework is developed to test the impact of these credit risk management indicators on the profitability of licensed commercial banks of Nepal. In this study conceptual framework is portrayed in figure 1. Earning is the difference between income and expenses. Higher earning indicates higher income and lower expenses. Higher earning is always a result of better performance. In this study capital adequacy ratio, loan loss provision ratio, non-performing loan ratio and cash reserve ratio are taken as independent variables. Return on assets and return on equity are taken as dependent variable.



Sources: Nguyen, (2020)

Figure 1

Conceptual Framework (Relationship between Dependent and Independent variable

Definition of Variables:

Independent Variables

1. Capital Adequacy Ratio (CAR)

Capital fund to total Risk Weighted Asset (RWA) ratio measures how much RWA is financed from the Capital Fund. Capital Fund includes Core Capital plus Supplementary Capital. The higher the ratio does a bank have, the better is the bank's financial position and the bank will be in less risky position and can increase its asset, which ultimately will increase bank's overall profit (Ali & Dhiman, 2019).

2. Loan Loss Provision Ratio (LLPR)

This ratio indicates the amount of Loan Loss Provision, a cushion for the possibility of default, to total loans and advances of a bank. Since high provision has to be made for non-performing loan, higher provision for loan loss reflects increasing non-performing loan in volume of total loans and advances (Nguyen, 2020).

3. Non-performing Loan Ratio (NPLR)

This ratio determines the proportion of non-performing loans in the total loan portfolio. As per Nepal Rastra Bank directives the loans falling under category of substandard, doubtful and bad loan are regarded as non-performing loan. Higher the

ratio implies the bad quality of assets of banks in the form of loans and advances (Bhattarai, 2020).

4. Cash Reserve Ratio (CRR)

Banks maintain liquidity in various forms like ready cash at its disposal, certain percentage at central bank (NRB) as a statutory requirement, makes placements in other banks and some percentage is utilized in investment on government securities. Banks pay the depositors their money when demanded and if this is not met, it damages bank's image. The confidence of the public will be lost and this leads the bank towards its down fall. As we know that every bank has to maintain a reserve with Nepal Rastra Bank (NRB) equal to 5% of total local currency deposit. This is done so that there will be no problem relating to deficiency of liquid cash as it affects the goodwill of the banks (Bhattarai, 2020).

Dependent variables

1. Return on Assets (ROA)

Return on assets measures a company's success in earning a return for all providers of capital. Higher ROA means optimum utilization and management of the total assets. This ratio is calculated by dividing the net profit after tax by total assets (Nguyen, 2020).

2. Return on Equity

Return on equity measures a company's success in earning a return for the common stockholders. Higher ROE indicates better utilization of capital fund. The Return on Equity ROE is derived by dividing net profit after tax by total equities (Nguyen, 2020).

CHAPTER IV

RESULTS AND DISCUSSION

4.1 Introduction

This chapter consists of various calculation made for the analysis of credit risks of the sample banks. To make our study effective, precise and easily understandable, this chapter is categorized in three parts; presentation, analysis and interpretation. The analysis is fully based on secondary data. In presentation section, data are presented in terms of table.

4.2 Descriptive Analysis of Variables of the Study

Credit Risk Management Indicators

Capital Adequacy Ratio

The capital adequacy ratio (CAR) is a measurement of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures.

Table 2

Capital Adequacy Ratio (in %)

Year	SBL	Sanima	LSBL
2013/14	11.03	20.74	11.02
2014/15	11.80	14.87	12.33
2015/16	11.39	12.54	11.91
2016/17	11.10	11.08	10.81
2017/18	11.25	12.36	11.15
2018/19	12.74	15.57	13.58
2019/20	12.12	12.41	12.43
2020/21	12.70	13.19	11.83
2021/22	13.17	13.00	13.02
2022/23	13.36	13.57	12.15
Mean	12.07	13.93	12.02
S.D.	0.88	2.71	0.88
C.V.	7.28	19.48	7.33

Note. *Annual report of sample banks*

The capital adequacy ratio, also known as capital-to-risk weighted assets ratio (CRAR), is used to protect depositors and promote the stability and efficiency of

financial systems around the world. Generally, a bank with a high capital adequacy ratio is considered safe and likely to meet its financial obligations.

Table 2 shows the capital adequacy ratio of three commercial banks from the period of fiscal year 2013/14 to fiscal year 2022/23. The mean/average CAR of Sanima has found to be highest of 13.93% followed by CAR of, SBL and LSBL having 12.07% and 12.02% respectively. Sanima has the most fluctuation CAR with a standard deviation is 2.71% and CV of 19.48%. Siddhartha Bank has the lowest fluctuating CAR. The CV of Siddhartha Bank is 7.28% whereas; other two banks have more than 7.28%. According to NRB directives, total capital fund should not be less than the 11% of the total risk weighted exposure. Mean value of all sample bank have more than 11%. Therefore, the overall mean value of CAR is in satisfactory level. It implies that all banks have become successful to minimize its risk to maintain standard capital as adequate as required by regulations. However, Sanima seams higher capital adequacy ratio which has become successful to minimize its risk.

Loan Loss Provision Ratio (LLPR)

A loan loss provision is an income statement expense set aside as an allowance for uncollected loans and loan payments. This provision is used to cover different kinds of loan losses such as non-performing loans, customer bankruptcy etc. LLPR indicates the capacity of the bank to bear the loss on loans. A higher rate means a greater ability of the banks to face the loan losses.

Table 3

Loan Loss Provision Ratio (in percent)

Year	SBL	Sanima	LBL
2013/14	0.72	0.48	0.46
2014/15	0.78	0.54	0.51
2015/16	0.85	0.58	0.53
2016/17	0.90	0.56	0.47
2017/18	0.88	0.52	0.48
2018/19	0.82	0.05	0.52
2019/20	0.95	0.04	0.56
2020/21	0.74	0.20	0.25
2021/22	0.55	0.25	0.30
2022/23	0.81	0.40	0.45
Mean	0.80	0.36	0.45
S.D.	0.11	0.21	0.10
CV	14.12	58.13	22.17

Note. *Annual report of sample banks*

Table 3 shows the average LLPR, standard deviation and coefficient of variation of all sample banks from the fiscal year 2013/14 to fiscal year 2022/23. The average LLPR of SBL has found to be highest of 0.80% followed by LLPR of LSBL and Sanima Bank having 0.45% and 0.36% respectively. Sanima has the most fluctuating LLPR with SD of 0.21% and CV of 58.13%. SBL has the lowest fluctuating LLPR with CV of 14.12%; whereas other two banks have more than 14.12%.

Non-Performing Loan Ratio (NPLR)

A non-performing loan is a loan in which the borrower is in default and has not paid the monthly principal and interest repayments for a specified period. Usually, banks classify loans as non-performing loans when the repayments of principal and interest are due for more than 90 days or depending on the terms of the loan agreement. As soon as loan is classified as an NPL, it means that the likelihood of receiving repayments are significantly lower.

A high ratio means that the bank is at a greater risk of loss if it does not recover the owed loan amounts, whereas a small ratio means that the outstanding loans present a low risk to the bank.

Table 4

Non- performing Loan Ratio (in %)

Year	SBL	Sanima	LSBL
2013/14	1.52	0.479	0.62
2014/15	2.39	0.027	1.51
2015/16	2.75	0.017	1.15
2016/17	1.80	0.073	1.30
2017/18	1.47	0.019	0.80
2018/19	1.30	0.01	0.93
2019/20	1.09	0.030	1.29
2020/21	0.75	0.080	1.11
2021/22	1.38	0.450	1.04
2022/23	1.0	0.12	0.75
Mean	1.55	0.13	1.05
S. D.	0.62	0.18	0.28
C. V.	40.14	137.59	26.51

Note. *Annual report of sample banks*

Table 4 shows the mean NPLR of three commercial banks for the fiscal year 2013/14 to fiscal year 2022/23. The mean NPLR of SBL has found to be highest of 1.55% followed by LSBL and Sanima Bank having 1.05% and 0.13% respectively. The CV of Sanima has found to be highest of 137.59% with standard deviation of 0.18%;

whereas CV of other two banks have less than 137.59%. In individually, all the ratios of NPLR are acceptable because the mean value of NPLR of all three banks is not more than the limit set by NRB i.e. 5%. It shows the conditions of all banks are good. Among those banks, Sanima Bank is the best one. It shows the result of effective credit management of the bank and its efforts of recovering bad debts through establishment of recovery unit.

Cash Reserve Ratio (CRR)

The Cash Reserve Ratio refers to a certain percentage of total deposits the commercial banks are required to maintain in the form of cash reserve with the central bank. When central bank lowers CRR, the availability of funds in the bank increases, the interest rate decreases, and the bank profitability increases with the availability of money for funding generating more interest earnings. In contrast, when CRR increases, the availability of fund decreases with the banks, which means that less money to loan out is available resulting to fewer interest earnings and decline in profitability. The increase and decrease of CRR will result in non-availability and availability of fund in the banks denoting liquidity status of the banks.

Table 5

Cash Reserve Ratio (in %)

Year	SBL	Sanima	LSBL
2013/14	11.86	30.24	19.60
2014/15	9.60	30.96	12.33
2015/16	17.22	26.68	18.28
2016/17	8.63	22.32	12.59
2017/18	6.0	24.24	7.17
2018/19	8.68	26.08	7.32
2019/20	6.37	24.72	6.57
2020/21	4.56	22.87	5.59
2021/22	5.03	24.01	8.29
2022/23	3.54	22.15	8.29
Mean	8.15	25.43	10.60
S. D.	4.09	3.10	4.96
CV	50.15	12.20	46.79

Note. *Annual report of sample banks*

Table 5 shows the average CRR, standard deviation and coefficient of variation of all sample banks from the fiscal year 2013/14 to fiscal year 2022/23. There has been seen fluctuation in the CRR of each commercial bank. The mean CRR of Sanima Bank has found to be highest of 25.43% followed by CRR of LSBL and SBL having 10.60%

and 8.15% respectively. SBL has the most fluctuation CRR with a standard deviation is 4.09% and CV of 50.15%. Sanima Bank has lowest fluctuating CRR. The CV of Sanima Bank is 12.20% whereas other two banks have more than 12.20%.

According to NRB directive 2080/81, CRR should not be less than the 4% of the bank's total deposit. Mean value of all sample bank have more than 4%. Therefore, the overall mean value of CRR is satisfactory level.

Profitability Indicators

Return on Assets (ROA)

Return on assets is a profitability ratio that provides how much profit a company is able to generate from its assets. In other words, ROA measures how efficient a company's management is in generating earnings from their economic resources or assets on their balance sheet. ROA is shown as a percentage, and the higher the number, the more efficient a company's management is at managing its balance sheet to generate profits.

Table 6

Return on Assets (in %)

Year	SBL	Sanima	LSBL
2013/14	1.12	0.89	1.50
2014/15	1.43	1.39	1.50
2015/16	1.74	1.46	1.47
2016/17	1.51	1.55	1.04
2017/18	1.69	1.78	1.35
2018/19	1.53	1.86	1.52
2019/20	1.59	1.85	1.55
2020/21	1.49	2.07	1.66
2021/22	1.26	1.41	1.20
2022/23	1.25	1.44	1.12
Mean	1.46	1.57	1.39
S. D.	0.20	0.33	0.21
C. V.	13.63	21.30	14.75

Note. *Annual report of sample banks*

Table 6 shows the average ROA of three commercial banks from the fiscal year 2013/14 to fiscal year 2022/23. There has been seen fluctuating in the ROA of each commercial bank. The mean ROA of Sanima Bank has found to be highest of 1.57% followed by ROA of SBL and LSBL having 1.46% and 1.39% respectively. Sanima has the highest fluctuation ROA with standard deviation of 0.33% and CV of 21.30%. SBL has the lowest fluctuating ROA with SD of 0.20% and CV of 13.63%.

From the finding of the table it can said that Sanima Bank is able to make higher return to its assets by optimum and we can also analyze that the Sanima has higher risk associated with ROA and SBL has lowest risk associated with ROA.

Return on Equity (in percent): ROE

Return on equity is a measurement of how effectively a business uses equity – or the money contributed by its stockholders and cumulative retained profits – to produce income. In other words, ROE indicates a company's ability to turn equity capital into net profit. ROE measures profit as well as efficiency. A rising ROE suggests that a company is increasing its profit generation without needing as much capital. A higher ROE is usually better while a falling ROE may indicate a less efficient usage of equity capital.

Table 7

Return on Equity (in %)

Year	SBL	Sanima	LSBL
2013/14	11.90	5.72	13.95
2014/15	12.80	12.58	14.85
2015/16	13.85	15.09	15.91
2016/17	14.52	18.19	16.80
2017/18	16.31	22.69	17.21
2018/19	18.84	14.39	18.20
2019/20	8.52	18.67	15.56
2020/21	13.02	23.20	16.50
2021/22	9.25	16.09	17.52
2022/23	8.20	18.54	19.10
Mean	12.72	16.52	16.56
S.D.	3.43	5.09	1.55
C. V.	26.94	30.81	9.38

Note. *Annual report of sample banks*

Table 7 shows that the average ROE of the three commercial bank from the fiscal year 2013/14 to fiscal year 2022/23. The mean ROE of LSBL Bank has found to be highest of 16.56% followed by ROE of Sanima and SBL having 16.52% and 12.72% respectively. Sanima has the most fluctuating ROE with a standard deviation of 5.09% and CV of 30.81% which indicates that bank, is not able to appreciate the contribution of shareholders' effectively. LSBL has the lowest fluctuating ROE with standard deviation of 1.55% and CV of 9.38% which indicates that bank can generate more rate of return by owner's equity.

4.3 Descriptive Statistics

The descriptive statistics of the variables used in this study for the bank specific variables have been presented and analyzed in this section of the study. The descriptive statistics used in the study consists of mean, standard deviation, minimum and maximum values.

Table 8

Descriptive Statistics of the Variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	30	0.89	2.07	1.47	0.25
ROE	30	5.72	23.20	15.26	3.97
CAR	30	10.81	20.74	12.67	1.89
LLPR	30	0.04	0.95	0.53	0.24
NPLR	30	0.01	2.75	0.90	0.71
CRR	30	3.54	30.96	14.72	8.72

Note. SPSS Version 26

Table 8, the result indicates return on assets (ROA), return on equity (ROE), capital adequacy ratio (CAR), loan loss provision ratio (LLPR) non-performing loan ratio (NPLR) and cash reserve ratio (CRR) of the sample banks over the ten years. The table shows descriptive statistics of variables for the bank specific variables associated with commercial banks for the study period 2013/14 to 2022/23. Table 7 indicated that the sample banks are earning 1.47% return on assets with standard deviation of 0.25%. The mean value of return on equity indicates that banks are earning 15.26% return by utilizing shareholders' funds with standard deviation of 3.97%. The banks are keeping 12.67% CAR for its risk weighted assets on an average basis which is higher than the limits as prescribed by NRB and Basel norms (11%) with standard deviation of 1.89%. The mean value of loan loss provision ratio 0.53% shows that a sufficient amount of funds is kept aside by the banks against bad loans with standard deviation of 0.24%. The mean value of non-performing loans ratio of 0.90% depicts that selected banks have lower credit default on an average basis with standard deviation of 0.71%. The mean value of cash reserve ratio 14.72% shows

that banks are keeping certain percentage of total deposits as required to maintain in the form of cash reserve with central bank i.e. NRB which is higher than the limit as prescribed by NRB (4%) with standard deviation of 8.72%. The variation as indicated by standard deviation is largest for independent variable cash reserve ratio and lowest for dependent variable return on assets.

4.4 Relationship between CAR, LLPR, NPLR and CRR to ROA and ROE

The relationship of capital adequacy ratio, non-performing loan ratio and cash reserve ratio to return on assets and return on equity is determined in this section. For the analytical purpose, the return on assets and return on equity are assumed to be influenced with the volatility occurred in CAR, LLPR, NPLR and CRR Hence, ROA and ROE are taken as dependent variable whereas CAR, LLPR, NPLR and CRR are taken as independent variable. The correlation analysis is performed to determine the relationship of CAR, LLPR, NPLR, and CRR with ROA and ROE. To determine the effect of CAR, LLPR, NPLR and CRR on ROA and ROE, simple correlation as well as their coefficient of determination are calculated. To determine the magnitude of the effects of the independent variable to the dependent variable, multiple regression analysis is performed.

Correlation Analysis

The correlation analysis of the overall data is done to find out the relationship between different independent variables (CAR, LLPR, NPLR and CRR) with dependent variables (ROA and ROE).

Table 9

Relationship of ROA and ROE with CAR, LLPR, NPLR and CRR

Variables	ROA	ROE	CAR	LLPR	NPLR	CRR
ROA	1	-	-	-	-	-
ROE	0.496	1	-	-	-	-
CAR	-0.237	-0.387	1	-	-	-
LLPR	-0.195	-0.410	-0.273	1	-	-
NPLR	0.373	-0.301	-0.372	0.612	1	-
CRR	0.174	0.133	0.454	-0.477	-0.622	1

Note. Appendix-B

Table 9 shows the correlations between different variables. Table shows the correlation between independent and dependent variable i.e. independent variable consist CAR, LLPR, NPLR and CRR and dependent variable consist ROA and ROE.

Table 8 shows the relationship of profitability (i.e. ROA and ROE) is strongly correlated with LLPR and CRR. The relationship of ROA and ROE with LLPR and CRR are significant at 1% level of significance.

The table shows that profitability has positive significant relationship with CAR and negative significant relationship with CRR. It also shows that profitability has positive significant relationship with LLPR and negative significant relationship with NPLR.

Regression Analysis

Table 10

Model Summary I (Variation in ROA Explained by CAR, LLPR, NPLR and CRR)

R	R-Square	Adjusted R Square	Std. Error of the Estimate
0.428[a]	0.183	0.052	0.24952

(Source: Appendix-B)

a. Predictors: (Constant), CAR, LLPR, NPLE, CRR

b. Dependent Variable: ROA

Model summary indicates the R- square also known as coefficient of determination which can help in explaining variance. The value of R-square in as evident from table 10 is 0.183 which means 18.3% variation in profitability i.e. return on assets of Nepalese commercial banks is explained by CAR, LLPR, NPLR and CRR. However, the remaining 81.7% is explained by other factors which have not been explained in this study.

Similarly, adjusted R-square 0.052 which means 5.20% variation in return on assets of Nepalese commercial banks is explained by CAR, LLPR, NPLR and CRR after adjusting degree of freedom. This shows relationship between all independent variables and dependent variables.

Model summary also indicates the standard error of estimate is 0.24952 which shows the variability of the observed value of factors influencing profitability in commercial banks in Nepal from regression line is 0.24952 units.

Regression result for independent effect of CAR, LLPR, NPLR, and CRR on ROA is shown in the table 11 below.

Table 11

Regression Model I (Independent effect of CAR, LLPR, NPLR and CRR on ROA)

Variables	B	Std. Error	T	Sig.
(Constant)	2.195	0.385	5.702	0.001
CAR	-0.056	0.028	-2.041	0.042
LLPR	-0.151	0.247	-3.610	0.048
NPLR	-0.031	0.094	-3.335	0.040
CRR	0.007	0.007	3.985	0.034

(Source: Appendix-B)

a. Predictor: (Constant), CAR, PLLR, NPLR, CRR

b. Dependent Variable: ROA

Table 11 shows the regression result for independent effect of CAR, LLPR, NPLR and CRR on ROA. The constant for return on assets (ROA) of Nepalese commercial banks is 2.195. Based on the coefficients, the regression equation for the impact of credit risk management on profitability (ROA) of Nepalese commercial banks can be written as:

$$\hat{Y}_{ROA} = 2.195 - 0.056B_1 - 0.151B_2 - 0.031B_3 + 0.007B_4 + ei$$

The constant for return on assets (ROA) of Nepalese commercial bank is 2.195. The regression coefficient based on ROA are CAR, LLPR, NPLR and CRR are -0.056, -0.151, -0.031 and 0.007 respectively which indicates 1-unit increment in CAR leads to 0.056 decrements in ROA. Similarly, 1-unit increment in LLPR leads to 0.151 decrement in ROA. Likewise, 1-unit increment in NPLR leads to -0.031 decrements in ROA. Finally, 1-unit increment in CRR leads to 0.007 increment in ROA of Nepalese commercial banks. From the above finding, independent variable CAR has not significance result since its p- value is greater than the level of significance i.e.

p>0.01. However, independent variable LLPR, NPLR and CRR have statistically significant results since their p-value is greater than 0.01.

Table 12

Model Summary II (Variation in ROE Explained by CAR, LLPR, NPLR and CRR)

R	R-Square	Adjusted R Square	Std. Error of the Estimate
0.696[a]	0.484	0.401	3.07349

(Source: Appendix-B)

a. Predictor: (Constant), CAR, PLLR, NPLR, CRR

b. Dependent Variable: ROE

Table 12 shows R- square is 0.484 which shows that 48.40% of variation in return on equity (profitability) of Nepalese commercial banks is explained by CAR, LLPR, NPLR and CRR. However, the remaining 51.60% is explained by other unknown factors which have not been explained in this study.

Similarly, adjusted R-square 0.401 which means 40.10% variation in return on equity of Nepalese commercial banks is explained by CAR, LLPR, NPLR and CRR after adjusting degree of freedom. This shows the strong relationship between all independent variables and dependent variables. This means CAR, LLPRL, NPLR and CRR have strong impact in profitability of commercial banks in Nepal.

Model summary also indicates the standard error of estimate is 3.07349 which show the variability of the observed value of factors influencing profitability in commercial banks in Nepal from regression line is 3.07349 units.

Regression result for independent effect of CAR, LLPR, NPLR, and CRR on ROE is shown in the table 13 below:

Table 13

Regression Model II (Independent effect of CAR, LLPR, NPLR and CRR on ROE)

Variables	B	Std. Error	T	Sig.
(Constant)	35.966	4.742	7.584	0.001
CAR	-1.298	0.341	-3.806	0.001
LLPR	-6.528	3.042	-2.146	0.042
NPLR	-1.357	1.156	-3.174	0.025
CRR	0.034	0.089	-3.379	0.008

(Source: Appendix-B)

a. Dependent Variable: ROE

Table 13 shows the regression result for independent effect of CAR, LLPR, NPLR and CRR on ROE. Based on the coefficients, the regression equation for the impact of credit risk management on profitability (ROE) of Nepalese commercial banks can be written as:

$\hat{Y}_{ROE} = 35.966-1.298B_1 - 6.528B_2 – 1.357B_3 +0.034B_4 + ei$

The constant for return on assets (ROE) of Nepalese commercial bank is 35. 966. The regression coefficient based on ROE are CAR, LLPR, NPLR and CRR are -1.298, -6.528, -1.357 and 0.034 respectively which indicates 1-unit increment in CAR leads to 1.074 decrement in ROE. Similarly, 1-unit increment in LLPR leads to 6.528 decrement in ROE. Likewise, 1unit increment in NPLR leads to -1.357 decrement in ROE. Finally, 1-unit increment in CRR leads to 0.034 increment in ROE of Nepalese commercial bank.

From the above finding independent variables CAR has significant relationship with ROE since its p-value is less than 0.01. Similarly, CRR has not significant relationship with ROE since its p value is more than 0.05. However, other independent variables LLPR has significant and NPLR also have significant results since their p-value is lesser than 0.05.

4.5 Findings

1) The study found that the mean/average CAR of Sanima has found to be highest of 13.93% followed by CAR of SBL and LSBL having 12.07% and 12.02% respectively. Sanima has the most fluctuation CAR with a standard deviation is 2.71% and CV of 19.48%. Siddhartha Bank has the lowest fluctuating CAR. The CV of Siddhartha Bank is 7.28% whereas; other two banks have more than 7.28%.
2) The study found that the average LLPR of SBL has found to be highest of 0.45% followed by LLPR of LSBL and Sanima Bank having 0.45% and 0.36% respectively. Sanima has the most fluctuating LLPR with SD of 0.21% and CV of 58.13%. SBL has the lowest fluctuating LLPR with CV of 14.12%; whereas other two banks have more than 14.12%.

3) The study found that the mean NPLR of SBL has found to be highest of 1.55% followed by LSBL and Sanima Bank having 1.05% and 0.13% respectively. The CV of Sanima has found to be highest of 137.59% with standard deviation of 0.18%; whereas CV of other two banks have less than 137.59%. In individually, all the ratios of NPLR are acceptable because the mean value of NPLR of all three banks is not more than the limit set by NRB i.e. 5%. It shows the conditions of all banks are good. Among those banks, Sanima Bank is the best one. It shows the result of effective credit management of the bank and its efforts of recovering bad debts through establishment of recovery unit.
4) The study found that there has been seen fluctuation in the CRR of each commercial bank. The mean CRR of Sanima Bank has found to be highest of 25.43% followed by CRR of LSBL and SBL having 10.60% and 8.15% respectively. SBL has the most fluctuation CRR with a standard deviation is 4.09% and CV of 50.15%. Sanima Bank has lowest fluctuating CRR. The CV of Sanima Bank is 12.20% whereas other two banks have more than 12.20%.
5) The study found that the mean ROA of Sanima Bank has found to be highest of 1.57% followed by ROA of SBL and LSBL having 1.46% and 1.39% respectively. Saniam has the highest fluctuation ROA with standard deviation of 0.33% and CV of 21.30%. SBL has the lowest fluctuating ROA with SD of 0.20% and CV of 13.63%.
6) The study found that the mean ROE of LSBL Bank has found to be highest of 16.56% followed by ROE of Sanima and SBL having 16.52% and 12.72% respectively. Sanima has the most fluctuating ROE with a standard deviation of 5.9% and CV of 30.81% which indicates that bank, is not able to appreciate the contribution of shareholders' effectively. LSBL has the lowest fluctuating ROE with standard deviation of 1.55% and CV of 9.38% which indicates that bank can generate more rate of return by owner's equity.
7) Based on descriptive analysis of sample banks, CRR seems more fluctuating as it has highest standard deviation. However, ROA appears less fluctuating as it has lowest standard deviation.
8) Based on the results of correlation between dependent variable and independent variables, it can be found that there is significant relationship of CAR and CRR

with ROA and ROE and significant relationship of LLPR and NPLR with ROA and ROE.

9) The study found that the sample banks are earning 1.47% return on assets with standard deviation of 0.25%. The mean value of return on equity indicates that banks are earning 15.26% return by utilizing shareholders' funds with standard deviation of 3.97%. The banks are keeping 12.67% CAR for its risk weighted assets on an average basis which is higher than the limits as prescribed by NRB and Basel norms (11%) with standard deviation of 1.38%. The mean value of loan loss provision ratio 0.53% shows that a sufficient amount of funds is kept aside by the banks against bad loans with standard deviation of 0.24%. The mean value of non-performing loans ratio of 0.90% depicts that selected banks have lower credit default on an average basis with standard deviation of 0.71%. The mean value of cash reserve ratio 14.72% shows that banks are keeping certain percentage of total deposits as required to maintain in the form of cash reserve with central bank i.e. NRB which is higher than the limit as prescribed by NRB (3%) with standard deviation of 8.72%. The variation as indicated by standard deviation is largest for independent variable cash reserve ratio and lowest for dependent variable return on assets.

10) The study found that value of R-square in as evident from study is 0.183 which means 18.30% variation in profitability i.e. return on assets of Nepalese commercial banks is explained by CAR, LLPR, NPLR and CRR. However, the remaining 81.70% is explained by other factors which have not been explained in this study.

11) The constant for return on assets (ROA) of Nepalese commercial bank is 2.195. The regression coefficient based on ROA are CAR, LLPR, NPLR and CRR are -0.056, -0.151, -0.031 and 0.007 respectively which indicates 1-unit increment in CAR leads to 0.056 decrements in ROA. Similarly, 1-unit increment in LLPR leads to 0.151 decrement in ROA. Likewise, 1-unit increment in NPLR leads to -0.729 decrements in ROA. Finally, 1-unit increment in CRR leads to 0.007 decrement in ROA of Nepalese commercial banks.

12) It is found that there is highly positive relationship between CAR and profitability (ROA). This indicates as the CAR of Nepalese commercial banks increases; the profitability of the banks also increases.

13) The results show that LLPR has positive relationship with ROA. This shows that as the LLPR of the banks increases, the ROA of the banks decrease and vice-versa
14) The result found that NPLR and CRR have negative relationship with ROA. This indicates that as increases in NPLR and CRR of commercial banks, the ROA of the banks decreases.

15) Model summary II shows that CAR, LLPR, NPLR and CRR are responsible for 48.40% change in profitability (ROE) of Nepalese commercial banks rest of change depends on other factors.
16) The constant for return on assets (ROE) of Nepalese commercial bank is 35. 966. The regression coefficient based on ROE are CAR, LLPR, NPLR and CRR are -1.298, -6.528, -1.357 and 0.034 respectively which indicates 1-unit increment in CAR leads to 1.298 increment in ROE. Similarly, 1-unit increment in LLPR leads to 6.528 increment in ROE. Likewise, 1unit increment in NPLR leads to -0.357 decrement in ROE. Finally, 1-unit increment in CRR leads to -0.034 decrement in ROE of Nepalese commercial bank.
17) It is found that there is highly positive relationship between CAR and profitability (ROE). This indicates as the CAR of Nepalese commercial banks increases; the profitability of the banks also increases.
18) The result found that the relationship between CRR and ROE is highly negative. This shows that as the CRR of commercial banks increases, the ROE of the banks decreases and vice-versa.
19) It is found that there is positive relationship between LLPR with ROE of Nepalese commercial banks. This indicates that as LLPR increases, the profitability of the banks also increases and vice-versa.
20) The result shows that there is negative relationship between NPLR and ROE. This indicates that as NPLR and CRR of Nepalese commercial banks increases, the profitability of the banks decreases and vice-versa.

4.6 Discussion

The main purpose of this study was to examine the impact of credit risk management on profitability of commercial banks in Nepal and also to assess the impact of credit

risk practices on perceived performance of commercial banks in Nepal. The major finding of this study shows that there is significantly relationship between Credit Risk Management and the profitability.

The finding of this study shows that there is significantly relationship between Credit Risk Management and the profitability. The shows a positive relationship between CAR with ROA and ROE. The result shows that increase in capital adequacy ratio leads to significant increase in the profitability of the banks. Importantly this outcome is consistent with the finding provided in Pradhan and Shah (2019), Shahzad (2019), Kwadwo (2020), Ali and Dhiman (2019) and Nguyen (2020). Similarly, LLPR has significant negative relationship with ROA and positive significant relationship with ROE. Similarly, LLPR has significant positive relationship with ROA and ROE. The result indicates that increase in LLPR leads to increase in the profitability. The result is supported with the findings of Konovalova, Kristovska, and Kudinska (2017) and Tuladhar (2017). In addition, from most of other studies reviewed there were mixed results and were unable to establish a relationship between LLPR and bank profitability.

Another empirical finding from the regression analysis shows that there is significant another empirical finding from the regression analysis shows that there is significant negative relationship between NPLR with ROA and ROE. This outcome is consistent with finding of Konovalova, Kristovska, and Kudinska (2017), Tuladhar (2017) and Kwadwo (2020). The results indicate that increase in NPLR leads to decrease in the profitability of the banks. Likewise, the findings of the study show that there is statistically significant negative relationship of CRR with ROE the result is supported with the finding of Kwadwo (2020). Finally, CRR has significant negative relationship with the ROA and significant negative relationship with ROE of the banks. The result can be explained as increases in CRR leads to decreases in the profitability of the banks. This result is supported with the findings of Tuladhar (2017) and Kwadwo (2020). So, there is different result with different topic under credit risk management but this study included almost part of credit risk management

CHAPTER V

SUMMARY AND CONCLUSION

This chapter of the study is divided into three sections. The first section provides the brief summary of the study. The second section shows the conclusions of the study and finally the third section includes implication to find out in the background of the analysis carried out.

5.1 Summary

The study has been divided into five chapters. The first chapter contains background of the study, statement of the problems and research question, objectives of the study, rationale of the study and limitations of the study. Second chapter is the brief review of literature related to this study which included the conceptual review and empirical review of the major studies and research gap. Third chapter deals with the methodology followed to achieving the objective of the study, which include research design, population and Sample, sampling procedure, collection of data and data analysis tools and techniques. Finally, chapter four deals with results and discussion of data collected from various sources. It also includes the finding and discussion of the study. For the detail analysis of sample commercial banks in Nepal, in this study the sample bank's data were collected through secondary sources and different data analysis tools have been used. For the analysis of data, mainly this study focused on capital adequacy ratio, loan loss provision ratio, non-performing loan ratio and cash reserve ratio and their relation with the return on assets and return on equity.

The overall purpose of this research is to investigate how credit risk management has impact on the profitability of commercial banks of Nepal. Thus, the general objective of this study is to assess the role of credit risk management on profitability of commercial bank in Nepal. Hence, three commercial banks i.e. Siddhartha Bank Limited, Sanima Bank Limited and Laxmi Sunrise Bank Limited were taken in consideration for the purpose of the study. For analytical purpose, secondary data were gathered from annual reports, different sources and different statistical tools have been used to analyse the data of sample commercial banks. For the study, six variables that have been used for the study were capital adequacy ratio (CAR), loan

loss provision ratio (LLPR), non-performing loan ratio (NPLR), cash reserve ratio (CRR), return on assets (ROA) and return on equity (ROE). In which first four variables are credit risk management indicators and second two variables are profitability indicators. For analytical purpose, ten years (2013/2014 to 2022/2023) secondary data were gathered from the website of selected commercial banks and different statistical tools have been used to analyse the data of sample commercial banks.

This study has raised prime issue to analyse whether the capital adequacy ratio, loan loss provision ratio, non-performing loan ratio and cash reserve ratio are associated with return on assets and return on equity or not. To deal with the above issue, this study has set the objective to investigate influencing factors of profitability in the context of Nepalese commercial banks. In this study after analysing the statistical data, the mean/average CAR of Sanima has found to be highest followed by CAR of SBL and LSBL respectively. Sanima has the most fluctuation CAR with a standard deviation and CV. Siddhartha Bank has the lowest fluctuating CAR. The CV of Siddhartha Bank is lower whereas; other two banks have higher value.

The average LLPR of SBL has found to be highest followed by LLPR of LSBL and Sanima Bank having lower respectively. Sanima has the most fluctuating LLPR. SBL has the lowest fluctuating LLPR. The mean NPLR of SBL has found to be highest than LSBL and Sanima Bank respectively. The CV of Sanima has found to be highest than other two banks; whereas CV of other two banks have lesser value. In individually, all the ratios of NPLR are acceptable because the mean value of NPLR of all three banks is not more than the limit set by NRB. It shows the conditions of all banks are good. Among those banks, Sanima Bank is the best one. It shows the result of effective credit management of the bank and its efforts of recovering bad debts through establishment of recovery unit.

The mean CRR, standard deviation and coefficient of variation of all sample banks are fluctuating trend. There had seen fluctuation in the CRR of each commercial bank. The mean CRR of Sanima Bank has found to be highest followed by CRR of LSBL and SBL respectively. SBL has the most fluctuation CRR. Sanima Bank has lowest

fluctuating CRR. The CV of Sanima Bank is lower whereas other two banks have higher.

The mean ROA of Sanima Bank had found to be highest followed by ROA of SBL and LSBL respectively. Sanima has the highest fluctuation ROA. SBL has the lowest fluctuating ROA. The mean ROE of LSBL Bank has found to be highest followed by ROE of Sanima and SBL respectively. Sanima has the most fluctuating ROE which indicated that bank is not able to appreciate the contribution of shareholders' effectively. LSBL has the lowest fluctuating ROE which indicated that bank can generate more rate of return by owner's equity.

5.2 Conclusions

It is concluded that regarding to the first objective of the study, the mean CAR of the all sample banks have above the regulatory requirements which shows that all banks have become successful to minimize its risk to maintain standard capital as adequate as required by regulations. The NPLR of all the sample banks have below the limit set by Nepal Rastra Bank which shows that the condition of all banks in credit recovery is good. Mean CRR of all sample bank have more than regulatory requirements. According to NRB directive 2080/81, CRR should not be less than the four percent of the bank's total deposit. Mean value of all sample bank have more than four percent. Therefore, the overall mean value of CRR is satisfactory level.

Similarly, relating to second objective, the finding of the study period revealed that CAR has positive significant correlation with profitability. Similarly, LLPR has positive significant correlation with ROA and ROE. Likewise, NPLR has negative significant correlation with profitability. Finally, CRR has negative significant correlation with ROA and ROE. A high ratio means that the bank is at a greater risk of loss if it does not recover the owed loan amounts, whereas a small ratio means that the outstanding loans present a low risk to the bank. According to NRB directives, total capital fund should not be less than the regulatory requirements of the total risk weighted exposure. Mean value of all sample bank have more than regulatory requirements. Therefore, the overall mean value of CAR is in satisfactory level. It implies that all banks have become successful to minimize its risk to maintain standard capital as adequate as required by regulations. However, Sanima seams

higher capital adequacy ratio which has become successful to minimize its risk. It is concluded that Sanima Bank is able to make higher return to its assets by optimum and we can also analyze that the Sanima has higher risk associated with ROA and SBL has lowest risk associated with ROA.

From the third objective, the regression analysis concluded that CAR has significant positive relationship with profitability, where it has been observed that capital adequacy ratio is a major influencer of profitability of the banks. The overall result concluded that the credit risk management is an important predicator for the profitability of banks. Therefore, the success of the bank in term of profitability depends on its credit risk management. From the study finding of independent variables CAR has significant relationship with ROE since its p-value is significant. Similarly, CRR has significant relationship with ROE. However, other independent variables LLPR and NPLR do not have significant results.

5.3 Implications

Based on findings of the study, and taking into considerations of the relevant issues, the following appropriate recommendations have been carried out:

Implications for Improvements

As the findings of the study have revealed, risk management is an important predicator for the profitability of banks. It is recommended for banks to emphasize more on risk management. In general, banks need to maintain an optimum level of cash reserve ratio so that they will not have difficulty in meeting their financial obligations, protect their depositor's investment and thus promotes the stability of the financial system. Banks should keep loan loss provision as required by Nepal Rastra Bank which bust up the ability of the banks to face the loan losses.

The study further recommends for banks to control and monitor non-performing loan, and keep the level of non-performing loan as low as possible by emphasizing more on the ability to pay back before credit approvals are given, a practice that will enable banks to achieve higher performance. Also, banks need to emphasize on cash reserve

ratio. Meaning that banks should maintain appropriate level of cash reserve ratio as required by NRB to manage the liquidity problems in the banks.

The study recommends the management of the Nepalese banks to put more emphasis on credit risk identification since proper identification of risk would help to develop the basis for the other stages of management of credit risk. This study recommends that commercial banks should regularly revise the credit management practices to ensure they do not use redundant management of credit risk practices.

Implications for future Researchers

a. Future research could be conducted by taking into consideration some other variable like bank size, coverage ratio, loan to deposit ratio, interest spread rate, and additional research on this topic might be conducted with longer time period.
b. Futures research could be conducted on management of credit risk on performance of development banks, finance company, microfinance banks since they accept deposits and their lending mechanism are almost similar to those of commercial banks.
c. Future research could be conducted considering macroeconomic factors like inflation, GDP.
d. Future research could be conducted by using qualitative views obtained through interviews, questionnaire, and survey to establish an in-depth effect of credit risk management practices on banks profitability in financial perspective.

REFERENCES

Achou, T. F. & Tenguh, N.C. (2008). *Bank performance and credit management*. *Polish Journal of Management Studies*. *4*(1), 85-90.

Ali, L., & Dhiman, S. (2019). The impact of credit risk management on profitability of public sector commercial banks in India. *Journal of Commerce & Accounting Research*, *8*(2), 86-92.

Bhattarai, L. P. (2020). *Restructuring process of commercial bank through credit risk management and responsibility of restructuring team*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Bhattarai, M. (2018). Restructuring process of commercial bank and responsibility of restructuring team. *Nepal Rastra Bank Samachar*. *3*(52), 28-30.

Chatterjee, D. P. (2005). *Risk management, Indian institute of banking and finance*. New Delhi: Macmillan India Ltd.

Chhetri, G. R. (2021). Effect of Credit risk management on financial performance of Nepalese commercial banks. *Journal of Balkumari College*. *10*(1), 22-28

Diaz, G. F. (1994). The origin of Mexico's 1994 financial crisis. *The Cato Journal, 17*(3), 45-48

Francis, J. C. (2002). *Investment analysis and management*. New York: MC Graw-Hill Inc.

Ghimire, B. R. (2012). Credit sector reform and NRB. *New Business Age*, 47-49

Kafle, R. P. (2016). *Non-performing loans of Nepalese commercial banks*, Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Khakurel, K. (2018). *A study in investment policy of KBL Bank Ltd in comparison to Machhapuchhre Bank Limited*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Konovalova N., Kristovska I., & Kudinska M (2017). Credit risk management in commercial banks, *Polish Journal of Management Studies*. *13*(2), 25-33.

Kupper, E. (2000). *Risk management in banking: An unpublished Research Paper* [Online]. Available: <http:// www.basel.com >.

Kwadwo, B. (2020). Credit risk management and profitability in select savings and loans companies in Ghana. *International Journal of Advanced Research 2*(1), 42-46

Mekasha, G. (2011). Credit risk management and its impact on performance of Ethopian commercial banks. *Addis Ababa University Research Paper,*10-13

Neupane, H. M. (2014). *Nepal Rastra Bank Samachar*. Kathmandu: Nepal Rastra Bank, 46th Anniversary.

NRB, (2019). *Unified directives for banking and financial institution*. Kathmandu: Nepal Rastra Bank.

NRB, (2021). Banking and financial statistics. *A Journal of Banking Operation Department,* Kathmandu: Nepal Rastra Bank, *7*(2), 39-41.

NRB, (2020). Banking and finance strategies. *Nepal Rastra Bank Samachar*. *2*(56), 6-8,

Nguyen, L. (2020). Credit risk control for loan products in commercial banks: Bank for Investment and Development of Vietnam. *Polish Journal of Management Studies*. *16*(1), 55-60.

Poudel, R. S. (2012). The impact of credit risk management on financial performance of commercial banks in Nepal, *International Journal of Arts and Commerce*. *1*(5),12-16.

Pradhan, M. L. (2011). Importance of credit information bureau and its activities, Kathmandu: *Nepal Rastra Bank Samachar*. *2*(45), 21-25.

Regmi, B. (2019). *Importance of credit information bureau and its activities*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Roger, W. F. (2003). Capital standards for banks: The evolving Basel Accord, *Federal Reserve Bulletin*. *89*(9), 395-405.

Pradhan, S. & Shah, A. K. (2019).Credit risk management of commercial banks in Nepal. *Journal of Business and Social Sciences Research. 4*(1), 15-20.

Santimero, A. (1997). *Commercial bank risk management: an analysis of process,* Pennsylvania: University of Pennsylvania Press.

Shahzad, K. (2019). The Influence of credit risk management strategies on the performance of commercial banks: A comparative Case Study of UAE and UK Commercial Banks. *Polish Journal of Management Studies*. *15*(2), 38-42.

Sharma, M. R. (2011). Joint venture banks in Nepal co-existing or crowding out. Kathmandu: *The Nepalese Journal of Public Administration, 5*(1), 95-98.

Shekher, K., & Shekher, A. (1994). *Banking theory and practices*, New Delhi: Vikash Publishing House.

Shrestha, M. (2013). Credit risk management of commercial banks in Nepal. Kathmandu: *Nepal Rastra Bank Samachar*. *2*(47), 23-28.

Shrestha, N. (2013). *A Study on non-performing assets and loan loss provision of commercial bank with references to KBL/KBL/NIC ASIA,* Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Shrestha, S. (2018). *Credit risk management of commercial banks in Nepal*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Thakur, A. K. (2021). *Risk management of commercial bank and financial institution*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Thapa, S. (2017). *A study of credit risk analysis and non-performance assets of Nepalese commercial banks in Nepal*. Unpublished Master Level Thesis, Faculty of Management Tribhuvan University, Kathmandu.

Van-Horne, J. C. (1999). *Financial management and policy*. New Delhi: Prentice Hall of India.

Varshney, N. P., & Swaroop, G. (1994). *Banking law and practices*. New Delhi: Prentice Hall of India.

Yousuf, K. A., & Felfoldi, J. (2018). The effect of credit risk management on profitability: An empirical study of private banks in Syria. *Oradea Journal of Business and Economics*, *3*(2), 43-50.

Yusuf, K. A. (2003). A framework for credit risk management*, Harvard Business Review*. *2* (48), 48-51.

IMPACT OF CREDIT RISK MANAGEMENT ON PROFITABILI...

By: Rusha Dhakal

As of: Jul 4, 2024 12:46:22 PM
15,536 words - 67 matches - 4 sources

Similarity Index
6%

Mode: Summary Report

sources:

369 words / 2% - from 18-Jan-2024 12:00AM
elibrary.tucl.edu.np

358 words / 2% - from 26-Feb-2024 12:00AM
elibrary.tucl.edu.np

134 words / 1% - from 17-Apr-2024 12:00AM
elibrary.tucl.edu.np

150 words / 1% - Internet
Karim, Shahzad. "The Influence of Credit Risk Management Strategies on the Performance of Commercial Banks: A Comparative Case Study of UAE and UK Commercial Banks"

paper text:

ABSTRACT A credit risk is the possibility that a borrower will not make the necessary payments, resulting in default on the debt. Given that providing credit is one of the primary ways that commercial banks generate revenue, credit risk is among the biggest threats that banks encounter. This study's main goal is to find out how Nepal's commercial banks' profitability is affected by credit risk management. Examining the indicators of credit risk management and Nepalese commercial bank profitability, evaluating the correlation between credit risk management and Nepalese commercial bank profitability, and investigating the influence of credit risk management on Nepalese commercial bank profitability are the specific goals. Only three of the study's twenty commercial banks—Siddhartha Bank Ltd., Laxmi Sunrise Bank Ltd., and Sanima Bank Ltd.—were chosen through the convenience sampling approach in order to meet the study's objectives. Secondary sources of data from 2013–14 to 2022–23 served as the study's foundation. The overall capital fund should not be less than 11% of the entire risk-weighted exposure, it is found. The average number across all sample banks is more than 11%. As a result, the CAR's overall mean value is good. It suggests that every bank has managed to reduce risk to the extent necessary to maintain standard capital levels as mandated by laws. The total outcome demonstrates that one key factor influencing bank profitability is credit risk management. As a result, the bank's capacity to control credit risk determines its profitability. Based on the study's independent variable findings, CAR and ROE have a significant link because their p-value is less than 0.01. Similarly, because its p value is smaller than 0.05, CRR and ROE have a significant association. Nevertheless, because the p-value for the other independent variables, LLPR and NPLR, is higher than 0.01, the results are not significant. Keywords:

Credit risk management , commercial banks, **capital adequacy ratio, profitability, non-performing loan**

CHAPTER I INTRODUCTION 1.1. Background of Study Credit risk, interest rate risk, liquidity risk, market risk, foreign exchange risk, and solvency risk are the risks that are most relevant to banks. According to Ali and Dhiman (2019), risk management is a human activity that combines risk identification, risk assessment, strategy development, and risk mitigation through the use of managerial resources. However, credit risk refers to the possibility of suffering a loss as a result of a debtor's failure to make loan or other credit-related payments (principal, interest, or both). The likelihood that a borrower would default by not making