IMPACT OF CREDIT RISK MANAGEMENT ON PERFORMANCE OF COMMERCIAL BANKS IN NEPAL

A Dissertation Submitted to the Office of the Dean, Faculty of Management in Partial Fulfillment of the requirement for the Master's Degree

By

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RECOMMENDATION

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Has been prepared as approved by this Department in the prescribed formal of the Faculty of Management. This dissertation is forwarded for examination.

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"IMPACT OF CREDIT RISK MANAGEMENT ON PERFORMANCE OF COMMERCIAL BANKS IN NEPAL".** The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

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

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REPORT OF RESEARCH COMMITTEE

Ms. Rena Maharjan has defended research proposal entitled **"IMPACT OF CREDIT RISK MANAGEMENT ON PERFORMANCE OF COMMERCIAL BANKS IN NEPAL".** successfully. The research committee has registered the dissertation for further progress. It is recommended to conduct the work as per suggestions and guidance of supervisor Bala Ram Thapa and submit the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We have examined the dissertation entitled **"IMPACT ON CREDIT RISK MANAGEMENT ON PERFORMANCE OF COMMERCIAL BANKS IN NEPAL".** presented by Ms. Rena Maharjan for the degree of **Master of Business Studies (MBS)** and conducted the viva voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

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Rena Maharjan
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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
BS	Bank Size
BFIs	Banking, Finance, Insurance and Securities
CAR	Capital Adequacy Ratio
CAL	Cost per Loan Assets
CRR	Cash reserve Ratio
DF	Degree of Freedom
EBL	Everest Bank Limited
FIs	Financial Information System
F/Y	Fiscal Year
HBL	Himalayan Bank Limited
LN	Natural Logarithm
ROA	Return on Assets
ROE	Return on Equity
SBL	Siddhartha Bank Limited
SPSS	Statistical Package for Social Science Research

ABSTRACT

The study delves into credit risk management and performance evaluation of prominent Nepalese commercial banks, specifically Siddhartha Bank, Laxmi Bank, Himalayan Bank, and Everest Bank. Through a comprehensive analysis of key financial indicators, the research investigates the intricate connection between credit risk and bank profitability. Employing a range of financial and statistical tools, the study provides valuable insights. The study examined the impact of various bank-specific factors on credit risk management and performance in Nepalese commercial banks. Data was sourced from annual reports of a select sample of banks. Through statistical analysis in both MS-Excel and SPSS, Pearson's correlation coefficients, regression models, and variance inflation factors were computed.

The results revealed that capital adequacy ratio, non-performing loans, cash reserve ratio, and bank size demonstrated a positive and significant correlation with return on assets. However, cost per loan assets did not exhibit a significant impact on return on assets. In terms of return on equity, the study found that capital adequacy ratio and cash reserve ratio had a notable influence, while non-performing loan ratio, cost per loan assets, and bank size did not show a significant relationship with return on equity in Nepalese commercial banks.

The ratio of Non-Performing Loans to Total Loans and Advances (NPLLR) showcases diversity in credit risk management effectiveness. Temporal shifts are observed in Capital Adequacy Ratio (CAR) and Management Quality Ratio (MQR), while Bank Size (BS) signifies differences in management approaches and market impact. The study suggests that further research is essential to achieve a more holistic comprehension of how credit risk management intricately relates to bank profitability.

Key Words:-Capital Adequacy Ratio, Return on Assets, Non- Performing Loan, Bank size, and Cash reserve.

CHAPTER I
INTRODUCTION

1.1 Background of the study

Commercial banks are the most importance savings, mobilization and financial resource allocation institutions (Treacy and Carey, 2000). Consequently, these roles make them an importance phenomenon in economic growth and development. In performing this role, it must be realized that banks have potential, scope and prospects for mobilizing financial resource and allocating them to productive investments. Therefore, no matter the sources of the generation of income or the economic policies of the country, commercial banks would be interest in giving out loans and advances to their numerous.

Banks are the financial institution that accepts funds in the form of deposits repayable on demand or short notice (Saunders, 2011). Banking as industry is very profitable and renowned business. The complexities aroused due to modernization and urbanization is made easy due to establishment of banks and financial institutions. The bank has simplified the complex transaction like money saving, fund transfer, lending etc. Banks in the economy in mainly to fulfill the need like mobilize savings, capital formation, monetization of the economy, permeation of employment, upliftment of poor, promotion of private investment, rapid economic development, safety of wealth, transfer of money and so on. Accepting deposits and mobilization of deposits is major functions of the bank.

Credit risk is one of the most general risks that exist in the financial market and a major risk faced by financial institutions (Duffie and Singleton, 2003). Credit risk generally refers to the risk that a borrower will default on any type of debt by falling to make payment which it is obligated to do. An investigation of real risk assets allocations of banks conducted by McKinsey and Company (1997) demonstrates that credit risk exposure takes up to 60.0% of risks that banks face while market risk and operation risk take 20.0% respectively. The recognition, measurement control and management of risk are, therefore, very important for banks. There is no financial institution that could avoid the above risks.

Beside all these benefits and importance, we can consider Commercial banks are in the risk business. In the process of providing financial services, they assume various kinds of risks among them credit risk covers the significant portion of the total risk. While commercial banks have faced difficulties over the years for a multitude of reasons, the major cause of serious banking problems continues to be directly related to the lax credit standards for borrowers and counterparties, poor portfolio risk management, or a lack of attention to changes in economic or other circumstances that can lead to deterioration in the credit standing of a bank's counterparties. Since the exposure to credit risk continues to be the leading source of problem in commercial banks world-wide, the bank should now have a keen awareness of the need to identify, measure, monitor, manage and control the credit risk as well as determine that they hold adequate capital against these risks and that they are adequately compensated for the risks incurred.

The risk that counterparty will not settle on an obligation for full value, either when due or at any time thereafter is credit risk. In exchange for-value systems, the risk is generally defined to include replacement risk and principal risk. In short credit risk is risk covered by loan. A "loan" is a financial asset resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation to repay on a specified date or dates, or on demand, usually with interest.

Credit risk management has been long the focus of government, regulatory authorities and financial institutions. Contemporary economic is basically a credit economy which has been based on the trusts of different entities. By trust, the lender has the ability that based on the repayment of book value and interest in a certain time or period, to received money, goods or service (Wu, 2002). Government bonds, enterprise loans, consumer loans, credit swap are typical examples of credit products used under a credit economy. No doubt, a credit economy is born with risks. Default occurs when, for example, the bond issuers could not meet their promised obligations or the quality of the bonds has been changed due to other reasons in the, market. Serious breach of credit contracts can lead to the loss of banks and even bankruptcy.

Risk arises while extending loans. Loans and repayments of the loans on time determine performance and profit that bank makes and also ascertains loss it has to face higher the debt higher will be the provision for the debt (Bhattarai, 2016). It's

essential for any financial institution to control and maintain credit limit, as BFIs major sources for injecting funds in the economy, the economy also inversely affected by losses faced by credit risk management. Banking and financial institution are prone to various risk as an institute responsible for utilizing funds of depositors and circulate funds in the market. Risk faced by bank is led by change in various factors, such as, interest rate, foreign exchange rate, and so on. Howe ever, credit risk has a greater impact on the profitability and performance of bank (Nepal Rastra bank, 2018). Asset quality is an aspect of bank management entails the evaluation of a firm asset in order to facilitate the measurement of the level and size of credit risk associated with its operation (Basle, 1997).

The main focus of the study is to analysis the relationship of credit risk management and bank performance of commercial banks. Specifically, it examine the impact of capital adequacy ratio (CAR), non-performing loan ratio (NPLR), cost per loan assets (CLA), cash reserve ratio (CRR) and bank size on return on assets (ROA) and return on equity (ROE). This study is the credit risk assessment in the financial institution based on their impact of credit risk on bank performance and profitability.

1.1.1 Profile of sample banks

Siddhartha Bank Limited (SBL)

Relationship Forever, Established in the year 2002, Siddhartha Bank Limited (SBL) is recognized as one of the most efficient and professional banks in Nepal. A core philosophy of the bank lies in nurturing relationships with customers and clients. To ensure convenient access to services, SBL integrates digital banking in most operations. Using online banking or Siddhartha Bank Smart App, SBL services can be accessed by customers from anywhere in the world. The technology used is continuously improved for enhanced customer experience. Earning confidence of its customers through these facilities and prompt services, SBL is one of the most trusted commercial banks in Nepal. SBL follows all rules, processes and laws, ensuring due diligence in its operations, as directed by the governing body. In addition to benefiting its clients, customers and stakeholders, SBL contributes to developing Nepal. As a responsible corporate, SBL supports innumerable CSR activities throughout the country.

Laxmi Bank Limited (LBL)

Laxmi Bank was established in 2002 as the 16th commercial bank in Nepal. Today, through its branches and a host of IT enabled channels, the Bank serves a wide range of customers. Despite a relatively short history, Laxmi Bank has emerged as a major player across all business lines – retail, midmarket, corporate, infrastructure and treasury. The Bank is widely recognized as one of the best-managed banks in Nepal with high standards of corporate governance culture, risk-management systems and a strong technology. Laxmi Bank's microfinance subsidiary – Laxmi Laghubitta Bittiya Sanstha Ltd, a category D financial institution licensed by Nepal Rastra Bank is in operation since 2012 and has a network of 90 branches with loans of over NPR 7.52 billion.

Himalayan Bank Limited (HBL)

Himalayan Bank Limited, established in 1993 as a Joint Venture of Habib Bank Limited of Pakistan has been successfully reigning the banking industry since its inception. The bank holds the legacy of introducing various banking services for the first time in Nepal from the very beginning. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL which was able to win customers' hearts during that time. Since its establishment, the bank has been highly focused on innovative approaches and customer satisfaction. The bank started its journey from Employees Provident Fund Building, popularly known as Sanchayakosh Building at Thamel, Kathmandu.

Everest Bank Limited (EBL)

Catering to more than 12 lacs customers, Everest Bank Limited (EBL) is a name you can depend on for professionalized & efficient banking services. Founded in 1994, the Bank has been one of the leading banks of the country and has been catering its services to various segments of the society. With clients from all walks of life, the Bank has helped the nation to develop corporately, agriculturally & industrially. Punjab National Bank (PNB), India's first Swadeshi Bank, commenced its operation on April 12, 1895 form Lahore and was the first bank purely managed by Indian with Indian Capital. During the long history of the Bank, 9 banks have been merged with PNB. Everest Bank Limited (EBL) provides customer-friendly services through its

wide Network connected through ABBS system, which enables customers for operational transactions from any branches. The bank has 127 Branches, 161 ATM Counters, 32 Revenue Collection Counters and 3 Extension Counters across the country making it a very efficient and accessible bank for its customers, anytime, anywhere.

1.2 Statement of the Problem

The current situation has brought a cutthroat competition in banking business. There for the success and failure of the finance company largely depend on the total credit risk management and performance of banks. The financial sector, particularly the banking system, could play a very important role in the successful transition and economic recovery of Nepal. Banks and other financial institutions are a unique set of firms whose assets and liabilities, regulatory restrictions, economic functions, and operations establish them as an important subject for study. The bank's performance monitoring, analysis, and supervision need special analysis of their operations and activities from the viewpoint of different audiences such as owners, clients, regulators, and management itself. Different versions of financial ratio analysis are used for a bank's performance analysis using financial statement items as initial data sources. Such analysis is not found in case of Nepalese context with latest information. The major statements to be analyzed in this study will definitely be the credit management adopted by Nepalese Commercial Banks. This study highly focused on following statements. Credit risk refers to the probability of loss due to borrower's failure to make payments on any type of the debt. Bank should be manage their liquidity problems for minimize risk. Bhattarai (2016) have conducted a research in effect of credit risk on the performance of Nepalese commercial banks and they found non- performing loan ratio has negative effect of bank performance where as CLA, bank size has positive effect of bank performance and CAR, CRR not considered as the influencing on bank performance. This study tries to analysis the present performance of bank which would give the answer of the following queries.

i. What is the relationship between credit risk management and performance of SBL, LBL, HBL and EBL?
ii. What is the impact of CAR, NPLR, CLA, CRR and Bank size on ROA of SBL, LBL, HBL and EBL?

iii. What is the impact of CAR, NPLR, CRR, CLA and Bank size on ROE of SBL, LBL, HBL and EBL?

iv. Do credit risks have an effect on profitability of commercial banks?

1.3 Objectives of the study

The main purpose of the study is to examine the factors impact credit risk management and bank performance of sample banks in Nepal. To achieve the main purpose, the following purposes are set:

i. To examine the relationship between credit risk management and performance of sample banks.

ii. To analyzed the impact of CAR, NPLR, CLA, CRR and Bank size on ROA of sample banks.

iii. To analyzed the impact of CAR, NPLR, CLA, CRR and Bank size on ROE of sample banks.

1.4 Rationale of the study

This study provides importance information to those who are planning to invest in the study will give a clear framework. Loan is the main product of commercial bank. It plays the significance impact on the financial institution's liquidity and profitability. But the most worry factor in banking industry is the total management of loan. Due to the excessive amount of nonperforming assets in finance companies, there is the wide spread suspicion on the performance on the commercial bank. Nepal Government has just enacted the debt recovery act and approved the long waited regulation on debt recovery to speed up the financial reforms in the financial sector. As the proposed study is focused on the total aspect of credit risk management of commercial bank, it would giant information to speed up the process. The proposed study would be of enormous assistance to the executives of commercial bank on how they should manage the different composition of loans. The study would be important as it provide theoretical framework of different aspect of credit risk management.

1.5 Limitations of the study

The limitations of this are listed below:

i. The study has based on secondary data provided by banks, Nepal Rastra Bank for sample banks.

ii. The study based on data and information provided by Siddhartha Bank Ltd, Laxmi Sunrise Bank Ltd, Himalayan Bank Ltd and Everest Bank Ltd, so the study might not cover whole commercial banks.
iii. The study based on trend analysis and statists, correlation and multiple regression methods of analysis and using secondary data of sample commercial banks, other research design and primary data is not taken into consideration.
iv. The study covers recent data and information of past 10 years from 2012/13 to 2021/22 and the study based on quantitative analysis.

1.6 Chapter plan

In this study is carried out in different stages and procedures, as needed. As well as study organized in following chapters in order to make the study easy to understand.

Chapter I: Introduction

This chapter describes the basic concept and background of the study. It has served orientation for readers to know about the basic information of the research area, various problems of the study, statement of problems, objectives of the study and rational of the study and limitation of the study.

Chapter II: Review of literature

The second chapter of the study assures readers that they are familiar with important research that has been carried out in similar areas. It includes a discussion on the theoretical framework.

Chapter III: Research methodology

It describes about the various source of data related with study and various tools and techniques employed for presenting the data. Financial and statistical tools which are used to obtain the results are described in this chapter.

Chapter IV: Results and discussion

This chapter is major part of the whole study in which all collected relevant data are analyzed and interpreted by the help of different financial and statistical tools. In this chapter explained the major finding and discussion of the study.

Chapter V: Summary and conclusion

This chapter includes this summary, conclusions and the implication of the study. The findings are included in this chapter along with the suggestions and their implications.

CHAPTER II
LITERATURE REVIEW

Review of literature means reviewing research studies or other relevant proposition in the related credit management of commercial bank. A summary of the writings of recognized authorities and previous research provide that the researcher is familiar with what is already known and what is still unknown and untested (Best and Khan - 2008). This study shows that all past and previous studies and conclusions. For review study, the researcher uses different books and journal, thesis, reviews and abstracts, indexes, reports, and dissertation or research studies published by various institutions. It is an integral mandatory process in research works. It is a crucial part of all dissertations.

2.1 Theoretical review

Concept of credit

Credit is the sum amount of money lent by the creditor (Bank) to the borrower (Customers) either on the basis of security or without security. Sum of the money lent by a bank, is known as credit (Oxford Advanced Learners Dictionary 1992). Credit and advances is an important item on the asset side of the balance sheet of a commercial bank. Bank earns interest on credits and advances, which is one of the major sources of income for banks. Bank prepares credit portfolio, otherwise it will not only add bad debts but also affect profitability adversely (Varshney and Swaroop 1994). Credit is financial assets resulting from the delivery of cash or other assets by a lender to a borrower in return for an obligation of repay on specified on demand. Banks generally grants credit on four ways (Chhabra and Taneja 1991).

i. Overdraft
ii. Cash credit
iii. Direct credit
iv. Discounting of bills

i) Overdrafts: It denoted the excess amount withdrawn over their deposits. In other words, bank provide sum limit of money to their value customer according to their believe ness and level of transaction.

ii Cash credit: The credit is not given directly in cash but deposit account is being opened on the name of credit taker and the amount credited to that account. In this way, every credit creates deposit.

iii Direct credit: The direct credit is an electronic transfer of funds through the automated clearing house system. The payment is initiated by the payer, which sends funds directly into the bank like letter of credit and guaranties.

iv Discounting of bills: Discounting of bills refers to the encashment of the bill before the date of its maturity. The bank deducts the charges from the bill.

Basel accords: The Basel accord refers to a set of banking supervision regulation set by the Basel Committee on Banking Supervision (BCBS). The Basel accords formed the goal of creating an international regulatory framework for managing credit risk and market risk. (BCBS) consisting of G10 country (Belgium, Canada, France, German, Italy, Japan, Netherland, Sweden, Switzerland, United Kingdom and United Stated) adopted the credit risk based capital requirement guidelines in July 1988. Their key function is to ensure that bank hold enough cash reserve to meet their financial obligation and survive in financial and economic distress, aims to strength corporate governance, risk management and transparency.

Basel I: Basel Committee on Banking Regulation and Supervision practices consist of G10 countries, adopted the credit risk based capital requirement guidelines in July 1988. This guideline is commonly known as Basel I capital accord and this accord was updated in April 1998. The regulation aimed to improve the stability of the financial system by setting minimum reserve requirements for international bank. Banks with a significant international presence were required to hold 8% of their risk weight assets as cash reserves.

Basel II: (BCBS), Basel II resealed on June 26, 2004 updated in November 2005 and a comprehensive version of the frame work were issued in June 2006. Basel II also known as the "International Convergence of Capital Measurements and capital Standard Revised framework". Basel II is based on three main pillars:

i. Pillar 1: Minimum capital requirements
ii. Pillar 2: Supervisory review process
iii. Pillar 3: Market discipline

Basel III: The Basel III regulations were created in November 2010 after the financial crises. Basel III identified the key reasons that caused the financial crises. They include poor corporate governance and liquidity management, over- levered capital structures due to lack of regulatory restrictions, and misaligned incentives in Basel I and Basel II. It introduced various capital, leverage, and liquidity ratio requirements sources:

CAMELS analysis: CAMELS model as a tool is very effective, efficient and accurate to be used as a performance evaluate in banking industries and to anticipate the future and relative risk (Mekasha, 2011). CAMEL ratios are calculated in order to focus on financial performance also evaluate relative risk. The CAMEL rating frame work is a system of rating for onsite examinations of banking institutions. Financial condition of an individual FI depends on multiple factors such as quality of its assets, liquidity position, capital base, management quality, market sensitivity and earnings. All these factors affect the different type of risk credit risk, interest risk, liquidity risk, market risk, foreign risk, operational risk etc. The six components, market risk (S) was added to CAMEL in 1997.

Capital adequacy: Capital adequacy is an important indicator of the financial of a banking entity (Barr et al., 2002). This indicates the bank capacity to maintain capital commensurate with the nature and extend of all types of risks, as also the ability of the bank's manager to identify, major, monitor and control these risks. The ability of management to meets the requirement for additional capital. Capital adequacy is very useful for a banking to conserve and protect stakeholder's confidence and prevent the bank from bankruptcy. The first component, capital adequacy ultimately determines how well FIs can manage with stocks to their balance sheets. This tracks capital adequacy ratios that take into account the most important financial risk foreign exchange risk, credit and interest rates risk by assigning risk weighting to the institution assets. For the purpose of capital adequacy measurement, bank capital divided into Tier I and Tier II.

Tier I (core capital) = Paid up capital + Share premium + Non- redeemable preference shares + General reserve fund +Accumulated profit – Goodwill – Fictitious assets – Investment financial instrument issued by organization.

Tier II (supplementary capital) = General loan loss provision + Assets revaluation reserve + Hybrid capital + Subordinate term loan + Equalization reserve + Investment adjustment reserve.

$$CAR = \frac{Tier\ I + TierII}{Total\ Risk\ Weighted}$$

Assets quality: Credit risk one of the factors that affect the health of an individual FI. (Fragouli and Aldayel, 2018). The extent of credit risk of the credit risk depends on the quality of assets held by an individual FI. The quality of assets held by an FI depends on exposure to specific risks, trends in non-performing loans, and the health and profitability of bank borrowers especially the corporate sector.

Management quality: The management of the bank takes crucial decisions on its risk perception. It set vision and goals for the organization and see that it achieves them. This parameter used to evaluate management efficiency as to assign premium to better quality banks. Management quality is to standard and policies, capability to plan and be anticipatory, leadership and innovativeness and managerial aptitude of the top level management.

Earnings performance: Earnings capacity and profitability keeps up the sound health of FI. Chronically unprofitable FI risk insolvency on one hand and the other, unusually high profitable can reflects excessive risk taking of an FI. There are indicators of profitability, Return on assets (ROA), Return on equity (ROE), interest spread margin, gross margin, operating profit margin and net profit margin.

Liquidity: Liquidity management in banks has assumed key prominence due to competitive force of peer banks and the smooth flow of foreign capital in the domestics market. Banks should ensure that it's able to maintain adequate level of liquidity to meet its financial commitments in a timely manner. To fulfill the demand of the customers, creditors and depositors, banks must maintain liquidity in their assets.

Sensitivity to market risk: Commercial banks are increasingly involved in diversified operations such as lending and borrowing, transaction in foreign exchange, selling of pledged for securities. All these are subject to market risk like interest rate risk, foreign exchange rate risk and financial assets and commodity price risk. The

health of an FI more sensitive to market risk is more hazardous than that of less sensitive.

Credit risk management

Financial environment is dynamic. In this dynamic financial environment fluctuation in interest rates, exchange rates and commodity and real estate prices are not something new (Paudel, 2012). These fluctuations in economic and financial variables weaken the corporate strategies and performance of bank. Thus it's necessary that banks have a framework of risk management. Effective credit risk management allows commercial banks to reduce risk and potential non-performing assets. Once commercial bank understands their risks and their costs, they will be able to determine their most profitable business and thus price product according to the risks. 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. Therefore, the management of the risk related to that credit affects the profitability of the banks (Li and Zou, 2015). Credit risk refers to the probability of loss due to a borrower's failure to make payments on any type of debt. Credit risk management is the practice of mitigating losses by understanding the adequacy of a bank's capital and loan loss reserves at any given time a process that has long been a challenge for financial institutions.

The global financial crisis and the credit crunch that followed put credit risk management into the regulatory spotlight. As a result, regulators began to demand more transparency. They wanted to know that a bank has thorough knowledge of customers and their associated credit risk. And new Basel III regulations will create an even bigger regulatory burden for banks. To comply with the more stringent regulatory requirements and absorb the higher capital costs for credit risk, many banks are overhauling their approaches to credit risk. But banks who view this as strictly a compliance exercise are being short-sighted. Better credit risk management also presents an opportunity to greatly improve overall performance and secure a competitive advantage.

Therefore, the finance companies must have an explicit credit risk strategy by organizational changes, risk measurement techniques and fresh credit processes and systems. There are five areas that credit risk management should focus on.

a) Credit sanctioning and monitoring process.

b) Approach to collateral

c) Credit risks arise from new business opportunities

d) Credit exposures relative to capital or total advances

e) Concentration on correlated risk factors

Credit risk management technique

As the majority of the finance companies' assets are in the form of loan, as the lending function is simple and create the value of the companies. The main danger is the chance of the borrower not to pay the loan amount. So the proper and prudent management of the credit risk is very necessary. Merton and Morten has suggested three techniques for the managing the credit risk in their article published in the Journal of Banking and Finance (Miller & Merton; 1995).

Risk based pricing

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

Assets restriction

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

Monitoring

If lenders have a contractual right to monitor assets value continuously and to seize assets, then loan losses can be minimized either by auditing asset values and seizing assets before shortfalls exists or by requiring the posted value if collateral assets to equal or exceed the promised payments. For private loans, for which finance companies have considerable expertise in organization, monitoring with continuous surveillance is costly.

Type of risk:

1. Credit risk – Credit risk is the possibility of loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Whereas counterparty risk, default risk and country risk are credit risks. 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 inability or unwillingness of a customer or counterparty to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions. Santomero (1997). Thus managing credit risk for efficient management of a FI has gradually become the most crucial task. Credit risk management encompasses identification, measurement, matching mitigations, monitoring and control of the credit risk exposures. As a leading bank of Bangladesh, Basic Bank Limited has a fully functioning department to perform the crucial task of Credit Risk Management (CRM)" (Lalon, 2015).

2. Operational risk – Operational risk is defined as the risk of loss resulting from inadequate or failed internal process, people, controls, systems and external events. 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 Leippoldy (2003).

3.Market risk – Market risk is the potential financial losses suffered by financial institutions due to movement in market prices, which is beyond control. The source of market risk includes movement of interest rate, foreign exchange rate, equity risk, currency risk and commodity 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

b. Interest Rate Risk

a. Liquidity Risk:

Saunders, (2011) defined that 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. 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 where as 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.

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 (Santomereo, 1997). 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.

2.2 Empirical review

Paudel (2012) explored various parameters pertinent to credit risk management as it affected bank's financial performance. Investigate whether this investment in credit management is viable to the banks, to investigate impact of credit risk management on a bank's financial performance in Nepal. The Specific objectives to establish the impact of default rate on performance of banks. Impact of debt collection on performance and establish the impact of cost per loan assets on performance and capital adequacy ratio which was presented in descriptive, correlation and regression was analyze by secondary data. Thirty-one banks were involved for population of sample, covered the period from 2001 to 2011. The econometric model used in the study where dependent variable return on assets (ROA) and independent variables defaults rate (DR), cost per loan assets (CLA), capital adequacy ratio (CAR). It's showed that there is a significant relationship between dependent variable and independent variables. Risk management indicated has direct relationship with performance however it's showed that there was negative relationship between (ROA) and (CLA). This indicated, there was no any relationship between cost per loan assets and performance. The result of the showed that credit risk management an important predicted of bank financial performance and maintained optimum level of capital adequacy. Efficiently managed the credit risk hence improved bank financial performance.

Bhattarai (2016) examined the effect of credit risk on performance of Nepalese commercial banks. The descriptive and causal comparative research designs have been adopted for the study. The pooled data of 14 commercial banks for the period 2010 to 2015 have been analyzed using regression model. The regression results revealed that 'non-performing loan ratio' had negative effect on bank performance whereas 'cost per loan assets' had positive effect on bank performance. In addition to credit risk indicators, bank size had positive effect on bank performance. Capital adequacy ratio and cash reserve are not considered as the influencing variables on bank performance. This study concluded that there is significant relationship between bank performance and credit risk indicators.

Pradhan and Shah (2019) focused on credit risk assessment practices in commercial banks on the basis of their internal efficiency, assessment of assets and borrower. The model of the study is based on the analysis of relationship between credit risk management practices, credit risk mitigation measures and obstacles and loan repayment. Based on a descriptive research approach the study has used survey-based primary data and performed a correlation analysis on them. It discovered that credit risk management practices and credit risk mitigation measures have a positive relationship with loan repayment, while obstacles faced by borrowers have no significant relationship with loan repayment. The study findings can provide good insights to commercial bank managers in analyzing their model of credit risk management system, policies and practices, and in establishing a profitable and sustainable model for credit risk assessment, by setting a risk tolerance level and managing credit risks via-vis the prevailing market completion.

Charles and Kenneth (2013) examined banks have continued to invest huge sums of scarce financial resources on risk management modeling, with a view to maximizing returns and minimizing bank's risk exposure through provision for loan losses. However, empirical evidence on the magnitude of the relationships between credit risk and bank's profitability in Nigeria is rather scarce. A few studies that have examined the links failed to consider the role of capital adequacy in accordance with Basel II accord in a unified framework. Using a time series and cross sectional data from 2004-2009 obtained from selected banks annual reports and accounts in Nigeria, this study examined the impact of credit risk management and capital adequacy on banks financial performance in Nigeria. This is with a view to providing further empirical evidence on how credit risk management strategies and capital requirement variables affect banks' profitability in Nigeria. Panel data model was used to estimate the relationship that exists among loan loss provisions (LLP), loans and advances (LA), non-performing loans (NPL), capital adequacy (CA) and return on asset (ROA). Results showed that sound credit risk management and capital adequacy impacted positively on bank's financial performance with the exception of loans and advances which was found to have a negative impact on banks' profitability in the period under study. Based on the findings, it is therefore, recommended that Nigerian banks institute appropriate credit risk management strategies by conducting rigorous credit

appraisal before loan disbursement and drawdown. It is also recommended that adequate attention be paid to enhance Tier-One capital of Nigerian bank. Ruziqa (2013) examined the impact of credit and liquidity risk on bank's financial performance. This study especially focuses on Indonesian Conventional Bank with total asset above 10 trillion Rupiah within 2007 to 2011. Bank financial performances are measured by return on asset, return on equity and net interest margin; credit risk are measured by non-performing loan ratio and liquidity risk are measured by liquidity ratio. Furthermore, this study also measured bank capital and bank size's effect on bank financial performance.

Abdelrahim (2013) investigated determinants challenges and developing means of credit risk managements of Saudi Banks. Had conclude that objectives identified the characteristics of credit risk management of Saudi banks, investigated the determinants of effectiveness of credit risk management of Saudi banks, find out most serious facing the effectiveness of credit risk and explore the determinants, challenges and development methods of effectiveness of credit risk management of Saudi banks. The methodology used descriptive and analytical used "CAMEL" model for analyzing performance of credit risk management. Used a questionnaire to collect the primary data and in addition to secondary data that was collect from annual reports of Saudi Banks. The study concluded that dependent variables effectiveness of credit risk management and independent variables capital adequacy ratio (CAR), Assets qualities (A), management soundness (M), earning of credit facilities (E), liquidity (L) and bank size (S). Selected a purposive sample of 100 respondents in the cities of Taif, Mecca, Jeddah and Riyadh and also included bank manager and financial exports. The study concluded that liquidity has significant strong positive impact beside bank size which has significant strong negative impact on effectiveness of credit risk management. The study was recommends an overall strategy for effective credit risk management of Saudi Banks based on enhancing capital adequacy, upgrading asset quality, strengthening management soundness, increasing earnings, having adequate liquidity and reducing sensitivity to market risk besides hedging credit risk; having adequate provisions for doubtful credit; renegotiating loan terms, transferring credit risk to a third party, extending credit maturity and lowering interest rate on insolvent loan.

Soyemi (2014) examined the risk management practices among deposit money banks in Nigeria with a view to relating these practices to their financial performance in the 2012 financial year. The study used secondary data gathered through content analysis of the sampled banks' annual reports and accounts on variables such as nonperforming loans, liquidity, operating cost and capital adequacy to measure risk management practices. The cross sectional data obtained was analyzed using descriptive statistics to depict patterns. Thereafter a robust standard error, OLS regression was used to estimate any significant influence between the banks' risk management practices and their financial performance. The findings appear to be largely consistent with previous works as the explanatory variables significantly accounted for variations in the financial performance [ROA-92% (71.78); ROE-84% (46.55)] in both models.

Abiola and Olausi (2014) investigated the impact of credit risk management on the performance of commercial banks in Nigeria. Financial reports of seven commercial banking firms were used to analyze for seven years (2005 – 2011). The panel regression model was employed for the estimation of the model. In the model, return on equity (ROE) and return on asset (ROA) were used as the performance indicators while Non-Performing Loans (NPL) and Capital Adequacy Ratio (CAR) as credit risk management indicators. The findings revealed that credit risk management has a significant impact on the profitability of commercial banks' in Nigeria.

Bhattarai, (2015) examined the non-performing loans (NPL) of financial institutions are considered as a significant issue in the context of Nepal for last few decades. The paper aims to identify the impact of macroeconomic variables (GDP, Inflation, and Real Effective Exchange Rate) and bank specific variables (size, change in loan, real lending rate of interest, and share of loan to total assets) on the non-performing loan of the commercial banks in Nepal. The study was conducted mainly with secondary sources. The data were collected for 26 commercial banks covering the period of 2002-2015 with 227 observations. The study found that macroeconomic variables such as the real effective exchange rate have significantly negative impact on nonperforming loan. The impact of GDP growth rate was found to be insignificant in this study. One year lagged inflation rate has significant positive impact on nonperforming loan. The banks which charge relatively higher real interest rate have higher non-performing loan, which is consistent with the findings of previous studies.

The ownership dummy has positive coefficient and significant at one percent level showing that if the bank is government owned the non-performing loan would be higher than that of the private owned banks. As well, more lending in the previous years and current year reduces the non-performing loan since the coefficient of change in loan in current and previous years have negative coefficient and significant at one percent level.

Etale, and Ayunko (2016) examined the impact of non- performing loans on bank performance in Nigeria, used return on capital employed (ROEC) and proxy for the bank performance the dependent variable and sub -standard loans (SUL), doubtful loans (DOL), and bad loan (BA) as proxy for non-performances loan independent variables. Adopted ex- post facto research design as there was existent of variable and secondary time series data at the time of the study. 21 years' periods covered 1994-2014 data collected from central bank. Used descriptive statics multiple regression analysis and employed data analysis techniques. The results showed that BAL and DOL had statistically negative significant influence on ROCE, which SUL had statistically negative significant impact on ROCE. These results showed high level of non-performing loan would reduce the performance of banks in the long-run in Nigeria.

Ekinci and Poyraz,(2019) aimed of this paper is to analyze the impact of credit risk on banks performance. The dataset consists of 26 commercial banks operating in Turkey 2005 to 2017. The secondary data collected from the statistical report of the Banks Association of Turkey. Three panels' data are considered respectively state-owned banks, privately-owned banks and foreign banks in order to compare banks according to their ownership structure. Return on Asset (ROA) and Return on Equity (ROE) were used as proxies for financial performance indicators while Non-Performing Loans (NPLs) was used as credit risk indicators. The estimation results showed that there is a negative relationship between credit risk and ROA as well as between credit risk and ROE. This result suggested that there is a relationship between credit risk management and profitability of Turkish deposit banks from the period of 2005 to 2017. Accordingly, banks should focus more on credit risk management, especially on the control and monitoring of non-performing loans. In addition, managers should focus more on modern credit risk management techniques.

The banking industry has experienced many financial crises in the past few decades. In the recent times, US subprime lending crisis of 2007-08 has appeared to be as one of the worst financial crisis. Credit risk management has gained lots of importance due to financial crises faced by the banking system which affected many countries across the globe. Credit risk is to be handled carefully and effectively in banks because it determines the bank's survival, growth and profitability. This present study tries to explore an empirical association between the credit risk management and banks financial performance. An attempt has been made to know the statistical Ali & Dhiman (2019) impacted of credit risk management indicators on profitability of public sector commercial banks for the period 2010-2017. The present research focuses on top ten public sector commercial banks selected on the base of total assets.

Isanzu (2017) analyzed study aim was to empirically examine the impact of credit risk on the financial performance of Chinese banks. Secondary data was collected from five largest commercial banks in the country for the period of 7 years from 2008 to 2014. The study used nonperforming loans, capital adequacy ratio, impaired loan reserve, and loan impairment charges as measures of credit risk and for a measure of financial performance return on asset was used. Data analysis was done using a balanced panel data regression model, and the study findings reveal nonperforming loan and Capital adequacy have a significant impact of on financial performance of Chinese commercial banks; therefore, the need to control credit risk is crucial for bank financial performance.

Teshome, Debela and Sultan (2017) examined the determinants of the financial performance of private commercial banks in Ethiopia. The study uses secondary data for eight private banks which are in the industry for more than ten years. These banks are chosen from sixteen private commercial banks which are currently functional in Ethiopia banking industry. The data for this study is obtained from annual reports of the banks, minutes and the national bank report. Correlation and multiple linear regressions of panel data for the eight banks for the years 2007 to 2016 is analyzed using random effect model. E views 9software was used for analyzing the data. Return on Asset and Return on Equity are the selected dependent variables while non-performing loan, capital adequacy ratio, bank size, leverage ratio, credit interest income ratio, loan loss provision ratio and operation cost efficiency were the

independent variables. Results show that Capital Adequacy Ratio (CAR), Credit Interest Income (CIR) and Size of the bank (SIZE) have positive and statistically significant effect on financial performance. Non-performing Loans (NPLs), Loan Loss Provision (LLP), Leverage Ratio (LR) and Operational Cost Efficiency (OCE) have negative and statistically significant effect on banks' financial performance. The study suggests that Ethiopian commercial banks are advised to manage their loan loss, be cost efficient, and fix their leverage ratio at maximum level to enhance their profitability.

Aldayel, and Fragouli (2018) analyzed credit is one of the largest risks in any bank, whereas, many enterprises complain of lack of excessive high criteria which set by financial institutions such as commercial banks, resulting in huge losses due to bad loans. This study investigated the impact of credit risk management practices on the financial performance of Commercial Banks in Saudi Arabia. Three research questions were raised alongside specific objectives, and three null hypotheses were tested at 0.05 level of significance. Descriptive survey research design was adopted. Findings revealed that Saudi Commercial Banks engage in credit risk management practices to combat and avoid credit risks. As well it concluded that these banks embrace different approaches to risk screening and analysis before granting credit to clients to reduce loan losses. The major recommendation was that the regulatory institution of Saudi Arabia banks, which is SAMA, should intensify its monitoring skills of the commercial banks to ensure strict adherence granting credit by financial institutions.

Rajeswari (2014) analyzed risk is the fundamental element that drives financial behavior. Financial institutions, should manage the risk efficiently to survive in the highly uncertain world. The future of banking will undoubtedly rest on risk management dynamics. Only those banks that have efficient risk management system will survive in the market in the long run. Credit risk is the oldest and biggest risk that a bank, by virtue of its very nature of business, inherits. This has, however, acquired a greater significance in the recent past for various reasons. Foremost among them is the economic liberalization across the globe. India is on exception to this swing towards market-driven economy. Better credit portfolio diversification enhances the prospects of the reduced concentration credit risk profile and non- performing assets

of public sector banks. The study identifies various credit risks in scheduled banks and methodologies followed by banks to reduce risks, these by creating a better understanding of credit risks in Banking Sector.

Mushtaq, Ismail, and Hanif (2015) identified Credit risk is one of the major risks in banking operations nowadays. For sustainable financial performance, credit risk management is of crucial importance. Non-performing loans are the major element of credit risk that negatively affects the banking performance. To cater such risk, banks have to maintain certain percentage of capital as cushion with central bank as per BASEL requirements. Efficient credit risk management contributes positively towards banking profitability. This study aims to investigate; how credit risk and capital adequacy affects the performance of commercial banks in Pakistan. This study identifies the exposure of Pakistani commercial banks towards credit risk and impact of credit risk management practices for 6 years. The findings of this study help the risk managers to ensure prudent credit risk management practices that will help in reducing non-performing loans and improving banking performance.

Mohammad and Onni (2015) analyzed modern banking concept one of the most important functions of a bank or financial Institution is “Management of Credit Risks”. Risk is inherent in all aspects of commercial operations. However, for Banks, credit risk is an essential factor that needs to be managed. Due to increase in the number of non-performing loans and competition in the banking market, most of the commercial banks are strongly focus on credit risk assessment. Credit risk arises due to the possibility that the borrower may fail to repay the loan. Following the recent global financial crisis, which originated from poor management of credit risk, it is the most discussed topic in the banking industry of Bangladesh. In order to establish the creditworthiness, credit analysts typically use a combination of financial or accounting data and non-financial variables as well as a number of different models, or analytical tools. Some of the methods involve a subjective approach; others are more systematic in that they use quantitative techniques to evaluate a credit against objective benchmarks. This study develops a credit risk grading model which will contribute significantly in the risk assessment.

Akomeah, and Frimpong (2020) examined the effect of credit risk management on the performance of selected listed commercial banks in Ghana. Objectives found the

effect of credit risk management on the performance of commercial banks and to the effect of non-performing loans, loan loss provision, and capital adequacy ratio and bank size on the financial performance of the bank. The study covered the period 2007 to 2016. Used secondary data and selected 7 sample of commercial bank. Data collected was analyzed statistically and quantitatively by the used of measure of central tendency, namely mean, medium, maximum, minimum and standard deviation. Dependent variable bank performance is profitability is measure by used return on assets (ROA) and independent variable non- performing loans (NPL), loan loss provision (LLP) and capital adequacy ratio (CAR), control variable of bank size. Finding indicated that credit risk management has significant influence on banks financial performance in Ghana. Banks need to maintain an optimum level of CAR. Promoted the stability of the financial system and increased banks size to become active in the market come out with a greater variety of products so as to diversity risk and achieved higher return on assets

Otieno, Nyagol and Onditi (2021) conducted a research on relationship between credit risk management and financial performance: empirical evidence from microfinance banks in Kenya stated that a sound Microfinance banking subsector is vital for economic development as the sector supports low-end entrepreneurs operating SMEs that form the bulk of Kenyan economy. In Kenya, the microfinance-banking subsector has been faced with risk management challenges. This necessitated the adoption of the Risk Based Supervision approach of supervising Microfinance banks in 2010. Additionally CIS feature was extended to MFBs to check on credit default. Panel data analysis based on system GMM technique was used to estimate a multiple regression model and test for significance of relationship between Risk management and financial performance. The findings were that credit risk management with PAR and LLPCR parameters had a strong negative correlation (r=-0.68), giving a significant negative relationship with both ROAA and ROAE performance measures as depicted by regression coefficient of - 0.2 estimated by GMM. Thus, the study concluded the existence of a significant relationship credit risk management and performance and that credit risk management impacts performance of MFBs. The study recommended that credit managers should operate under a sound credit granting process with well-defined credit-granting criteria detailing the MFB's target market, a thorough

understanding of the borrower, purpose and structure of the credit, and its source of repayment.

Uwuigbe, Oyewo and Uwuigbe (2022) studied on credit management and bank performance of listed banks in Nigeria. The study critically assessed the effects of credit management on Banks's performance in Nigeria. In achieving the objectives identified in this study, the audited corporate annual financial statement of listed banks covering the period 2007-2011 were analyzed. More so, a sum ten (10) listed banks were selected and analyzed for the study using the purposive sampling method. However, in an assessing the research postulations, the study adopted the use of both descriptive statistics and econometric analysis using the panel linear regression methodology consisting of periodic and cross sectional data in the estimation of the regression equation. Findings from the study revealed that while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and unsecured loan ratio and bank's performance was not significant. Hence, the study recommends that banks management should put in place or institute sound lending framework, adequate credit administration procedure and an effective and efficient machinery to monitor lending function with established rules.

Credit risk management an important predicted of financial performance and maintains optimal level of capital adequacy. In that article compared to national and 23 international article there is not any more different each other's. By studies articles find out main that effect of credit risk management and bank performance depend on the bank's return on assets, return on equity, capital adequacy ratios, default rate, nonperforming loan ratios, and costs per loan asset, liquidity and policy of banks. Nonperforming loan has negative effect on banks performance it reduces the performance of banks.

2.3 Research gap

During the review of previous studies, it was found that most of the researches Paudel (2012), Bhattarai (2016), Ekinci & Poyraz (2019) have been conducted on the determinants of credit risk management and bank performance of commercial banks. During the review of previous thesis and article, it was found that no research has been conducted by taking these sample banks and these data. Present study is based

on the data taken from four commercial banks. By reviewing an earlier thesis, it was found that researchers only analyzed the bank performance depend on the ROA with other financial indicators but this study has examined also bank's performance depend on the ROE, CRR and Bank size. This study examined those factors that play important role in determining credit risk management and bank performance of commercial banks. This study also examines the impact and relationship of credit risk management and bank performance ROA and ROE of with other financial indicators like CAR, NPLR, CLA, CRR and Bank size. This study used to secondary data from 2012/13 to 2021/22, and used statistical tools like coefficient of correlation and trend analysis. Probably this will be the appropriate research in the area of credit risk management and bank performance of commercial bank.

CHAPTER III
RESEARCH METHODOLOGY

Research is a systematic and organized effort to investigate facts and methodology is the method of doing research in well manner and also the research for gaining the knowledge about method of goal achievement, which we desire is known as research methodology. So, research methodology means the analysis of specific topic by using proper method.

3.1 Research design

Research design refers to the planning or making a decision before starting with the research study for the fulfillment the objectives of the study the descriptive and analytical research design. Descriptive research design helps to gain an accurate profile events persons or situation. This research design meets the objective of the study. Research design is the plan, structure and strategy of investigation conceived to obtain answers to the research question and to control variances. General objectives of this research study is to examine and evaluate the credit risk management and performance of commercial bank especially two non-joint venture bank and two joint venture in order to achieve the objectives.

3.2 Population and sample

The method of selecting for study a small portion of the population to draw conclusion about characteristics of the population is known as sampling. Sampling may be defined as the selection of part of the population on the basis of which a judgment or inference about the universe is made. There is lots of mushrooming financial institute, which are regarded as a population of the study. The total population of the study is the 21 commercial bank in Nepal. According to the convenience sampling method there are two non- joint venture banks and two joint venture bank. The sample are selected as per the convenience of the research and select the sample in easy available.

Sample banks:

Siddhartha Bank Limited (SBL)

Laxmi Bank Limited (LBL)

Himalayan Bank Limited (HBL)
Everest Bank Limited (EBL)

3.3 Nature and source of data

This study based on secondary data provided. Data and information have been extracted from the annual reports of the bank collected from the concerned bank and downloaded from official websites. The supplementary data and information have been acquired from various sources like newspaper, magazines, brochures, booklets, periodicals and bulletins, published and unpublished reports, related documents and journals available in library of Tribhuvan University, and Nepal Rastra Bank.

3.4 Data collection and data processing procedure

The study is based on secondary data. For this, the published material, books of different authors, unpublished thesis report, journals, internet web sites, AGM reports of commercial banks, bulletins published by NRB are the major sources of the secondary data. The annual reports of the concerned banks were obtained from their websites. The main sources of data are annual report of concern financial institutes. To find the results of the research, collected data is processed, analyzed and interpreted by using several tools like SPSS, Ms-excel and Ms-word.

3.5 Data analysis tools

The data collected from different sources will be recorded systematically as necessary only useful and related data are grouped as per need research work. Data are presented in appropriate forms of tables and graph. To analyze the data in this research, some trend analysis and statistical tools are used which are explained here.

3.5.1 Trend analysis

Trend analysis is a technique used technical analysis that attempt to predict the future movement of variable on the basis of its historical trends, past data. Trend analysis is based on the idea that what has happened in the past gives traders an idea of what will happen in the future. Under this method, collects information from multiple time periods and plots the information on a horizontal line to get some meaningful information. To evaluate the performances of an organization by creating the ratios from the figure of different accounts consisting in balance sheet and income statement

is known as ratio analysis. Five types of ratios have been analyzed in this study, which are related to fund mobilization of the banks. They are presented below:

1.Capital adequacy ratio

It indicates that a bank has an adequate amount of capital to deal with unexpected losses. When the ratio is low, a bank is at a higher risk of failure, and so may be required by the regulatory authorities to add more capital. The capital adequacy ratio (CAR) is a measure of how much capital a bank has available, reported as a percentage of a bank's risk weighted credit exposure. The purpose is to establish that banks have enough capital on reserve to handle a certain amount of losses, before being at risk for becoming insolvent.

$$\textbf{CAR} = \frac{\text{Tier I + Tier II}}{\text{Total Risk Weight}}$$

1. Non-performing loan ratio:

A non-performing loan is loan which the borrower is default and hasn't made any scheduled payments of principal and interest for a specified period within 90 days. An NPL ratio is used to measure the level of bank's credit risk and quality of outstanding loans. A high ratio of NPL means the bank bears a greater risk of loss if it fails to recover the owed amount, low ratio means that the outstanding loan pose a low risk to the bank. Non-performing loans cut banks earnings and can became the reason for huge losses, which impact the bank's sound performance.

$$\text{NPL} = \frac{\text{Non Performing Loan}}{\text{Total Loan}}$$

2. Cost per loan assets

Cost per loan assets (CLA) is the average cost per loan advanced to customer in monetary term. Cost per loan assets is calculated dividing total operating costs by total amount of loans. The function of this is to point out efficiency in distributing loans to customers Appa (1996), Ahmed (1998), Kolapo (2012). Thus, cost per loan assets is considered as a determinant of the bank`s performance and is viewed as an indicator of credit risk. Banks that are efficient in managing their expenses (costs), holding other factors constant, earn high profits. Therefore, it is expected that cost per loan assets and bank performance to be negatively associated. This may not always be true because in cases where there are high expenditures due to a lot of businesses

done, the bank can still increase the returns. However, the empirical studies show the mixed results on this issue. In view of theoretical perspective and empirical evidences, a negative relationship is expected between cost per loan assets and ban's performance.

$$CLA = \frac{\text{Total Operating Cost}}{\text{Total Amount of Loan}}$$

3. Cash reserve ratio

Cash reserve ratio (CRR) is defined as a particular minimum amount of deposits that needs to be maintained as a reserve by every commercial bank. CRR is to ensure that banks don't run out of cash when depositors require the funds for their personal needs. Cash reserve ratio is one of the control variable used in analyzing effect of credit risk on the performance of banks. Traditionally, cash reserve ratio (CRR) has been one of the monetary tools in the hands of the central bank. Cash reserve ratio (CRR) is a specified minimum fraction of the total deposits of customers which commercial banks have to hold as reserves with the central bank. By changing (CRR) the central bank can control the amount of liquidity.

$$CRR = \frac{\text{Reserve maintain to Central Bank}}{\text{Bank Deposit}}$$

4. Bank size

Bank size as measured by total assets is one of the control variables used in analyzing performance of the bank system (Smirlock, 1985). Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector. This variable controls for cost differences in product and risk diversification according to the size of the financial institution. This is included to control for the possibility that large banks are likely to have greater product and loan diversification. In most finance literature, natural logarithm of total assets of the banks is used as a proxy for bank size.

5. Return on assets ratio

Return on assets is a profitability ratio that provides how much profit a bank is able to generate from its assets. Return on assets measures how efficient a bank management is in generating earning 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 bank's management is at managing its balance sheet to generate profits.

$$\text{Return On Assets Ratio} = \frac{\text{Net Income}}{\text{Total Assets}}$$

6. Return on equity ratio

Return on is measure of financial performance of bank. The return on equity ratio is a profitability ratio that measures the ability of a bank to generate profit from its shareholder's investments in the bank. The ratio essentially measures the rate of return that the owners of common stock of bank receive on their shareholding. ROE is also indicator of how effective management is at using equity financing to fund operations and grow the bank.

$$\text{Return On Equity Ratio} = \frac{Net\ Income}{Total\ Equity}$$

3.5.2 Statistical tools

Statistical tools are the mathematical techniques used to analyze and interpret performance. It is used to describe the relationship between variables and interpret the results. Statistic also used to test the objectives that are set to know the information of the population. The research holds various statistical tools, which are defined as follows.

1. Average/mean

An average is a single value related from a group of values to represent them in some way, a value, which is supposed to stand for whole group of which it is a part, as typical of all the values in the group. There are various types of averages. Arithmetic mean (AM, Simple & Weighted), median, mode, geometric mean, harmonic mean are the major types of averages. The most popular and widely used measure representing the entire data by one value is the AM. The value of the AM is obtained by adding together all the items and by dividing this total by the number of items.

Arithmetic Mean (AM) is given by,

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

Where,

$\overline{X}$ = Arithmetic mean

$\sum x$ = Sum of all the values of the variable X

n = Number of observations

2. Standard deviation (σ)

The standard deviation (σ) measures the absolute description. It is defined as the positive square root of the mean of the square of the deviation taken from the arithmetic mean. If the standard deviation is greater, the magnitude of the deviation 33 also is greater. A small standard deviation means a higher degree of fact vice-versa. This can be symbolically as:

$$\boldsymbol{S.D.}\ (\boldsymbol{\sigma}) = \sqrt{1/n \sum (x - \overline{x)2}}$$

Where,

σ = Standard deviation

n = number of observations

$\overline{X}$= Arithmetic mean

3. Coefficient of variation

The coefficient of variation reflects the relation between standard deviation and mean. The relative measure of dispersion based on the standard deviations known as coefficient of variation. The coefficient of dispersion based on standard deviation multiplied by 100 is known as the CV.

It is used for comparing variability of two distributions; the CV is defined as,

$$\boldsymbol{CV} = \frac{\sigma}{\overline{X}}\ X\ 100$$

Greater the CV, the more variable or conversely less consistent, less uniform, less stainable and homogenous than the consistent more uniform, more stable and homogenous.

4. Coefficient of correlation (r)

Correlation analysis is the statistical tools that we can use to describe the degree to which one variable is liner related to another. Coefficient of correlation is the measurement of the degree of relationship between two casually related sets of figure whether positive or negative. Its values lie somewhere ranging between - 1 to +1. If the both variables are constantly changing in the similar direction, the value of

coefficient will be –1; two variables take place in opposite defection. The correlation is said to be perfect negative. In this study, simple correlation is use to examine the relationship of different factors with working capital and other variable.

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

Coefficient of Correlation between dependent variables and independent variables.

ROA and ROE has played a very important role in performance of commercial banks and similarly measure the degree of relationship between the two variables. In this analysis, ROA and ROE are dependent variable (Y) and capital adequacy ratio, non-performing loan, cost per loan assets, cash reserve ratio and bank size are independent variables (X). The main objectives of computing 'r' between these two variables are to justify whether dependent and independent variables significantly used a proper way or not. The following table shows the value of 'r', 'r2' probable Error (P. Er) and P. Er between deposit and loan & advances for the study period 2015/16 to 2019/20.

5. Regression analysis

Regression analysis is the development of the statistical model that can be used to predict the values of the dependent variables based upon the values of at least one independent variable. Regression analysis helps us to know the relative's movement in the variables.

Multiple regression analysis

This is defined as a statistical device which is used to predict the most probable value of a dependent variable on the basis of the known as of two or more independent variables so, this is a logical extension of the simple regression analysis. In this study, the following multiple regression equation is analyzed. As a test of the presence of multicollinearity among independent variables in the model, the tolerance value (TV) and variance inflation factor (VIF) have been computed. The variance inflation factor (VIF) shows a value less than 2 for each variable.

ROA = a+b1 CAR + b2 NPL + b3 CLA + b4 CRR + b5 Size + eit……...

ROE = a+b1 CAR + b2 NPL + b3 CLA + b4 CRR + b5 Size + eit …….

Where, ROA and ROE are dependent variables and CAR, NPL, CPLA, CRR and Size are independent variables.

3.6 Conceptual framework

The conceptual framework is designed to understand the factors that may impact the credit risk management and bank performance ROA and ROE. In the view theories and major empirical evidence, it is expected that the credit risk management and bank performance of commercial banks ROA and ROE may impact by capital adequacy ratio, non-performing loan, cost per loan assets, cash reserve ratio and bank size of the bank. The conceptual framework is developed to test the impact of these variables on the bank performance.

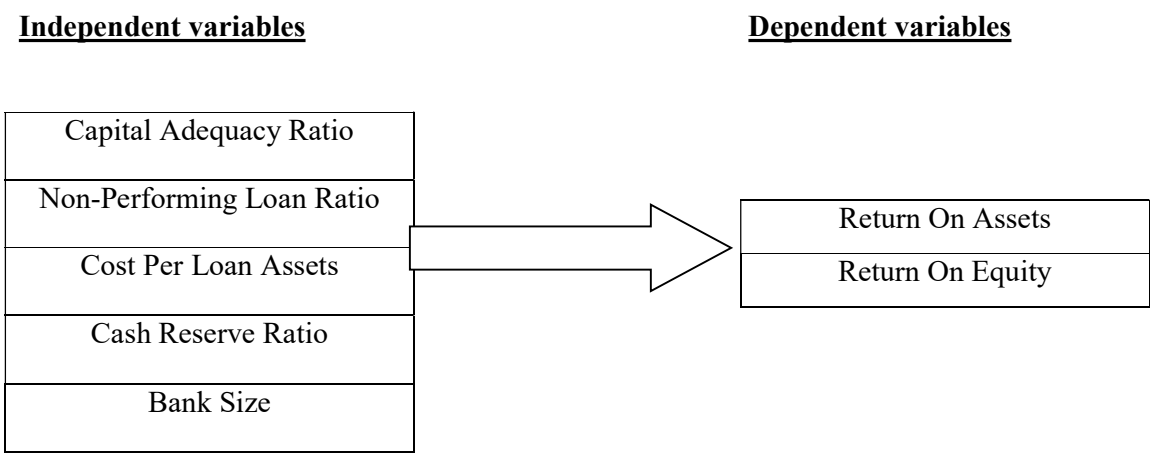


Figure 3.1 conceptual framework Sources: *Bhattarai (2016)*

Independent Variables

Independent variables are the variable which causes changes in other variables. The variable as a stimulus or operates other variables. Zikmund (2016) Independent variable as the variable that is expected to influence the dependent variable is some way.

Capital adequacy ratio

It indicates that a bank has an adequate amount of capital to deal with unexpected losses. When the ratio is low, a bank is at a higher risk of failure, and so may be required by the regulatory authorities to add more capital. It is a measure of the amount of bank's capital expressed as a percentage of its risk weighted exposure. It consists of the types of financial capital considered the most reliable, primarily shareholders' equity.

Non- performing loan ratio

A non -performing loan is loan in which the borrower is in default and has not paid the monthly principal and interest repayments for a specified period. Non-performing loans occur when borrowers run out of money to make repayments or get into situations that make it difficult for them to continue making repayments towards the loan.

Cost per loan assets

Cost per loan assets considers as determinant of bank performance and viewed as an indicator of credit risk. Bank that are efficient in managing their expenses (cost), holding other factors constant, earn high profits. The function of this is to point out efficiency in distributing loans to customers (Appa, 1996; Ahmed et al., 1998; Kolapo et al., 2012).

Cash reserve ratio

Cash reserve ratio (CRR) is defined as a particular minimum amount of deposits that needs to be maintained as a reserve by every commercial bank. Cash Reserve Ratio (CRR) is the amount of cash banks need to hold on to without being allowed to invest or lend it for interest.

Bank size

Bank size is an important financial tool used to represent the volume of the bank in many ways. The size of the bank can be measured in several ways, for example, through turnover, paid-up capital, capital employed, total assets, net sales, market capitalization etc. In this present study bank size is measured by total assets scaled in natural capitalization.

Dependent variable

The dependent variable is response variable or output. Variables are depending on the independent variables its means any change in dependent variable is due to independent variable. Return on equity and Return on asset are dependent variables of banks performance.

Return on equity

The return on equity essentially measures the rate of return that the owners of common stocks of a company receive on their shareholding. Return on equity (ROE) is the measure of a company's net income divided by its shareholders' equity. ROE is a gauge of a corporation's profitability and how efficiently it generates those profits. The higher the ROE, the better a company is at converting its equity financing into profits.

Return on assets

Return on assets is an indicator of how profitable a company is relative to its total profitable a bank is relatives to its total assets. Analysis an idea as to how efficient a bank's management is at using its assets to generate earnings. ROA measures the profit earned per dollar of assets and reflect how well bank management uses the banks real investments resources to generate profits (Naceur, 2003 and Alkassim, 2005).

CHAPTER IV

RESULT AND DISCUSSION

Introduction review of literature and research methodology is presented in the previous chapters that provide the basic inputs to analyze and interpret the data. Presentation and analysis of data is the main body of the study. In this chapter collected data are analyzed and interpreted as per the stated methodology in the previous chapter. The main sources of data are secondary data. In this chapter, researcher has analyzed and diagnosed credit risk management and bank performance of commercial Siddhartha Bank Ltd, Laxmi Bank Ltd, and joint venture bank Everest Bank Limited and Himalayan Bank Limited Different tables and diagrams are shown to make the analysis simple and understandable. All the credit risk management and bank performance of commercial bank is analyzing by calculating following ratio.

The credit management and fund mobilization presented to evaluate and analyze the performance and risk of commercial Banks i.e. Siddhartha Bank Ltd, Laxmi Bank Ltd and Everest bank Ltd and Himalayan Bank Ltd.

4.1 Trend analysis

Ratio analysis shows the mathematical relationship between two accounting figures. It helps to analyze the financial strengths and weaknesses of the banks. It is also inevitable for the quantitative judgment with which the financial performance of banks can be presented properly.

4.1.4 Capital adequacy ratio

It indicates that a bank has an adequate amount of capital to deal with unexpected losses. When the ratio is low, a bank is at a higher risk of failure, and so may be required by the regulatory authorities to add more capital. The capital adequacy ratio (CAR)is a measure of how much capital a bank has available, reported as a percentage of a bank's risk weighted credit exposure. The purpose is to establish that banks have enough capital on reserve to handle a certain amount of losses, before being at risk for becoming insolvent.

Table 4.1

Capital Adequacy Ratio of Sample Banks

	Bank			
Fiscal Year	SBL	Laxmi Bank	EBL	HBL
2012/13	0.1170	0.1176	0.1159	0.1155
2013/14	0.1139	0.1191	0.1115	0.1123
2014/15	0.1110	0.1081	0.1333	0.1114
2015/16	0.1125	0.1079	0.1266	0.1125
2016/17	0.1273	0.1399	0.1469	0.1273
2017/18	0.1212	0.1242	0.1420	0.1212
2018/19	0.1277	0.1183	0.1374	0.1277
2019/20	0.1317	0.1183	0.2530	0.1317
2020/21	0.1778	0.0163	0.1083	0.1180
2021/22	0.1404	0.1102	0.1203	0.1106
Mean	0.1221	0.1041	0.1347	0.1147
S.D.	0.0254	0.0288	0.0417	0.0050
C.V.	20.78%	30.96%	27.69%	4.36%

Sources: Annual Reports of Selected Commercial Banks

Figure4.1

Capital Adequacy Ratio of Sample Bank

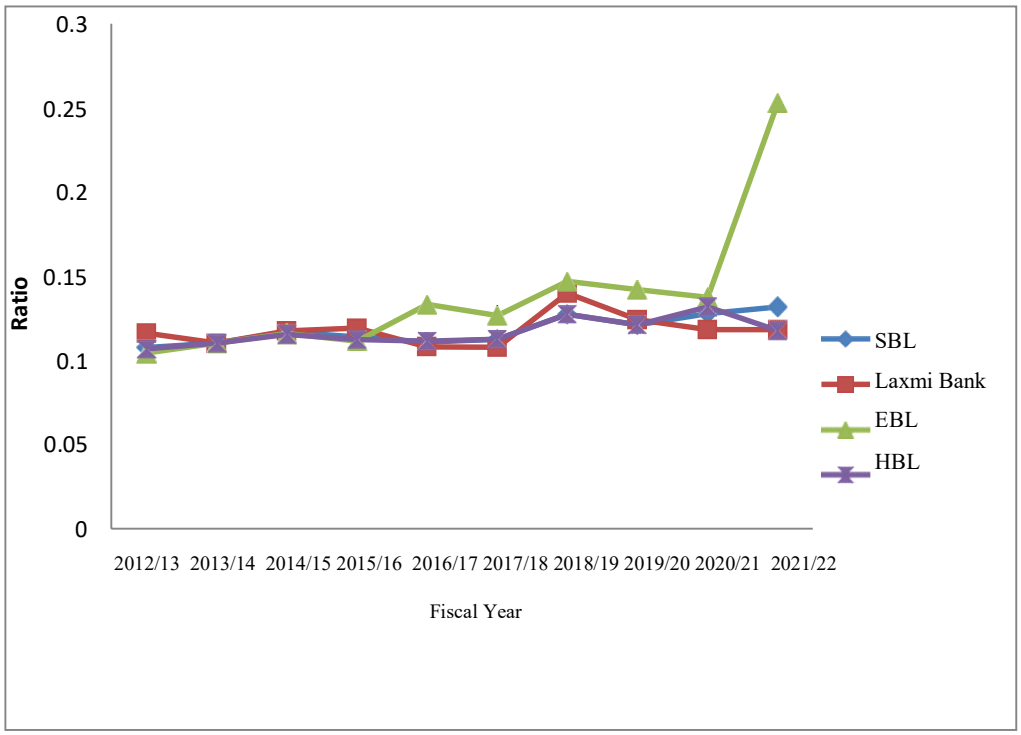


Table 4.1 and Figure 4.1 shows the descriptive statistics means, standard deviation, CV and value of each year Capital Adequacy Ratios (CAR) and trends of CAR of selected commercial banks in ten year periods. The provided table contains financial data for four banks (SBL, Laxmi Bank, EBL, HBL) over several fiscal years, along with statistical measures. SBL exhibited stable and consistent returns with a low coefficient of variation (CV). Laxmi Bank had less stable returns with higher variability in its performance. EBL showed somewhat more variability than SBL but less than Laxmi Bank, with the highest average return. HBL had extremely stable and consistent returns with the lowest CV. In summary, SBL and HBL had stable returns, while Laxmi Bank and EBL experienced more variability, with EBL having the highest average return. Non-performing loan ratio.

The non-performing loan measures the effectiveness of a bank receiving repayments. The bank evaluates the expected loss from the non-performing loan and books of corresponding provision. The non-performing loan measures the effectiveness of a bank receiving repayments on it loans.

Table 4.2

Non-Performing Loan Ratio of Sample Bank

	Banks			
Fiscal Years	SBL	Laxmi Bank	EBL	HBL
2012/13	0.0239	0.0151	0.0064	0.0289
2013/14	0.0275	0.0115	0.0097	0.0196
2014/15	0.0180	0.0130	0.0130	0.0320
2015/16	0.0147	0.0080	0.0038	0.0123
2016/17	0.0130	0.0093	0.0025	0.0085
2017/18	0.0109	0.0192	0.0018	0.0140
2018/19	0.0075	0.0111	0.0016	0.0112
2019/20	0.0138	0.0104	0.0022	0.0101
2020/21	0.0119	0.0112	0.0033	0.0262
2021/22	0.0142	0.0132	0.0084	0.0189
Mean	0.0145	0.0125	0.0052	0.0186
S.D.	0.0064	0.0039	0.0064	0.0039
C.V.	42.39%	32.05%	77.76%	42.51%

Sources: Annual reports of selected commercial banks.

Figure 4.2

Non-performing loan ratio

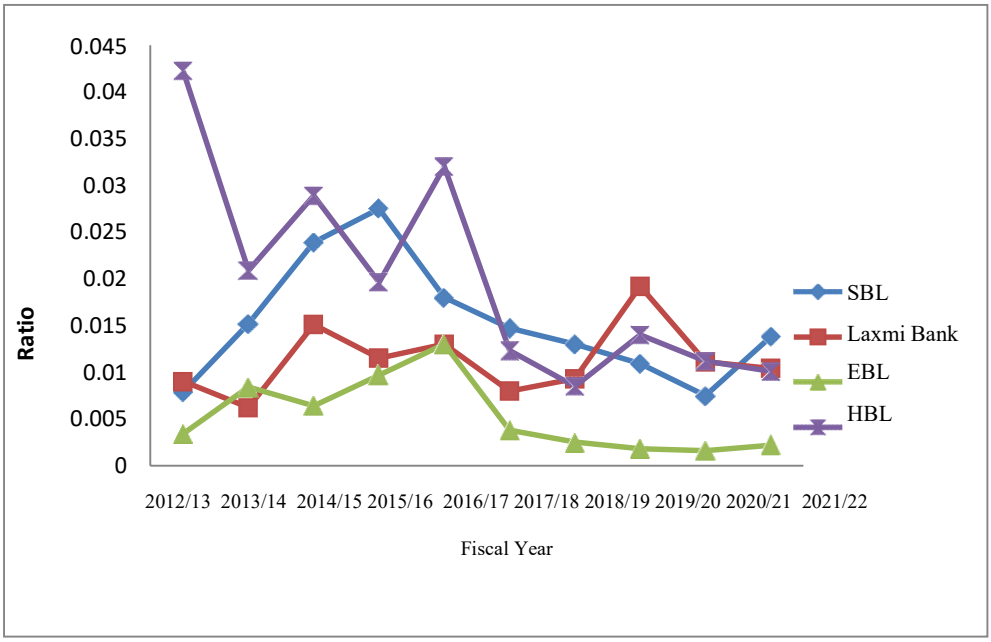


Table 4.2 and figure 4.2 shows the non-performing loan of selected commercial banks. The non-performing loan of Himalayan bank is in decreasing trend in 2011/12then started to fluctuating trend. Non-performing loan of SBL is increasing trend up to2013/14 then started to decrease. The provided financial data spans ten fiscal years from 2012/13 to 2021/22 for four banks (SBL, Laxmi Bank, EBL, and HBL) and focuses on their Return on Assets (ROA), a key measure of profitability. Notably, there is considerable variation in ROA across years, influenced by economic conditions, interest rates, and bank operations. SBL's mean ROA of 0.0145 indicates an average 1.45% return on assets, while other banks also have their mean ROA values. Standard deviation highlights volatility, with EBL demonstrating stability (0.0039 S.D.), and HBL showing fluctuation (0.0039 S.D.). HBL's high coefficient of variation (42.51%) suggests significant relative variability. These statistics offer insights into financial performance, but a more comprehensive analysis requires considering external factors, strategies, and industry benchmarks for context.

4.1.2. Cost per loan assets

Cost per loan assets is considered as a determinant of the bank`s performance and is viewed as an indicator of credit risk. Banks that are efficient in managing their expenses (costs), holding other factors constant, earn high profits. Its main aim is to indicate the efficiency in distribution loans to customers.

Table 4.3

Cost per Loan Assets of Sample Bank

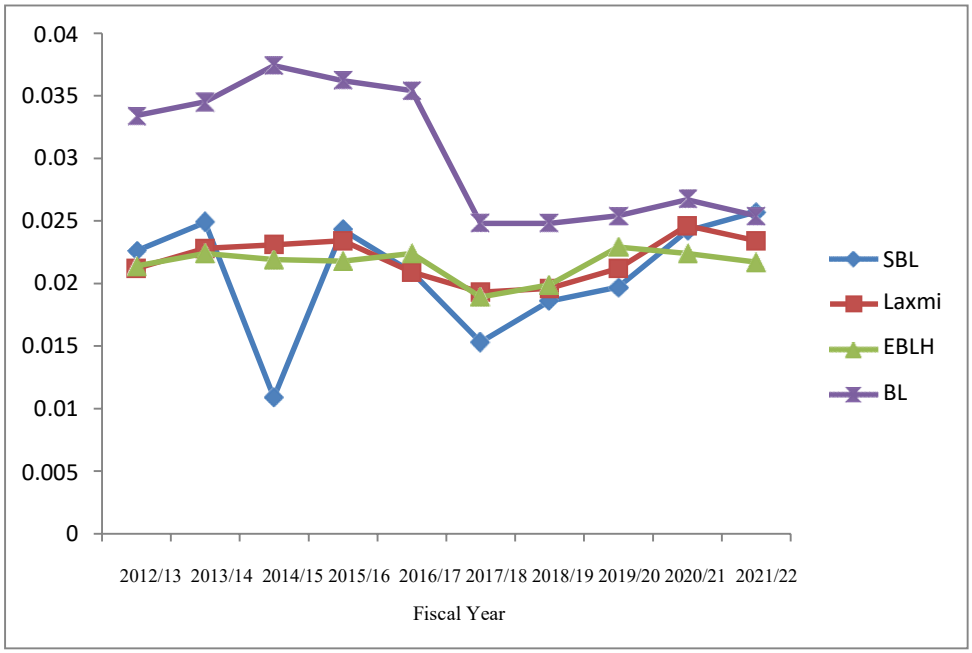
	Bank			
Fiscal Year	SBL	Laxmi Bank	EBL	HBL
2012/13	0.0109	0.0231	0.0219	0.0374
2013/14	0.0243	0.0234	0.0218	0.0362
2014/15	0.0209	0.0209	0.0224	0.0354
2015/16	0.0153	0.0193	0.0189	0.0248
2016/17	0.0186	0.0196	0.0199	0.0248
2017/18	0.0197	0.0212	0.0229	0.0254
2018/19	0.0242	0.0246	0.0224	0.0267
2019/20	0.0257	0.0234	0.0217	0.0254
2020/21	0.0256	0.0235	0.0257	0.0386
2021/22	0.2601	0.0219	0.0238	0.0296
Mean	0.0601	0.0229	0.0227	0.0030
S.D.	0.0913	0.0016	0.0018	0.0044
C.V	151.7%	7.23%	8.05%	14.79%

Sources: Annual reports of selected commercial banks

Over a ten-year period from 2012/13 to 2021/22, four banks' fiscal performance, as measured by Return on Assets (ROA), varied significantly. On average, SBL emerged as the most profitable bank with an ROA of 6.01%, followed by Laxmi Bank at 2.29%, EBL at 2.27%, and HBL at 0.30%. It's worth noting that SBL showed a substantial increase in ROA for 2021/22, suggesting exceptional performance or unique circumstances. In terms of stability, SBL had the highest standard deviation (S.D.), indicating volatile profitability, while Laxmi Bank exhibited the lowest S.D., signifying a more consistent performance. Furthermore, the coefficient of variation (C.V.) expressed SBL's risk relative to its average performance as the highest at 151.7%, suggesting higher relative risk compared to the other banks, which had lower C.V. values, indicating more stable performances concerning their averages.

Figure 4.3

Cost per Loan Assets of Sample Bank



The figure show the cost per loan asset of selected commercial banks. According to the table and figure Himalayan bank has higher average comparison to banks and lower mean of Siddhartha bank. Himalayan bank has capacity to manage their expenses holding other factors to earn high profit and to point out efficiency in distributing loans to customers. As a results HBL is higher average but Everest bank has lower C.V. comparison to other selecting banks it's risky.

4.1.3. Cash reserve ratio

Cash reserve ratio is one of the control variable used in analyzing effect of credit risk on the performance of banks. Traditionally, cash reserve ratio (CRR) has been one of the monetary tools in the hands of the central bank. Cash reserve ratio (CRR*)* is a specified minimum fraction of the total deposits of customers which commercial banks have to hold as reserves with the central bank. By changing CRR, the central bank can control the amount of liquidity. If the reserve requirement is raised, banks will have less money to loan out and this effectively reduces the amount of capital in the economy, therefore lowering the money supply

Table 4.4

Cash Reserve Ratio of Sample Banks

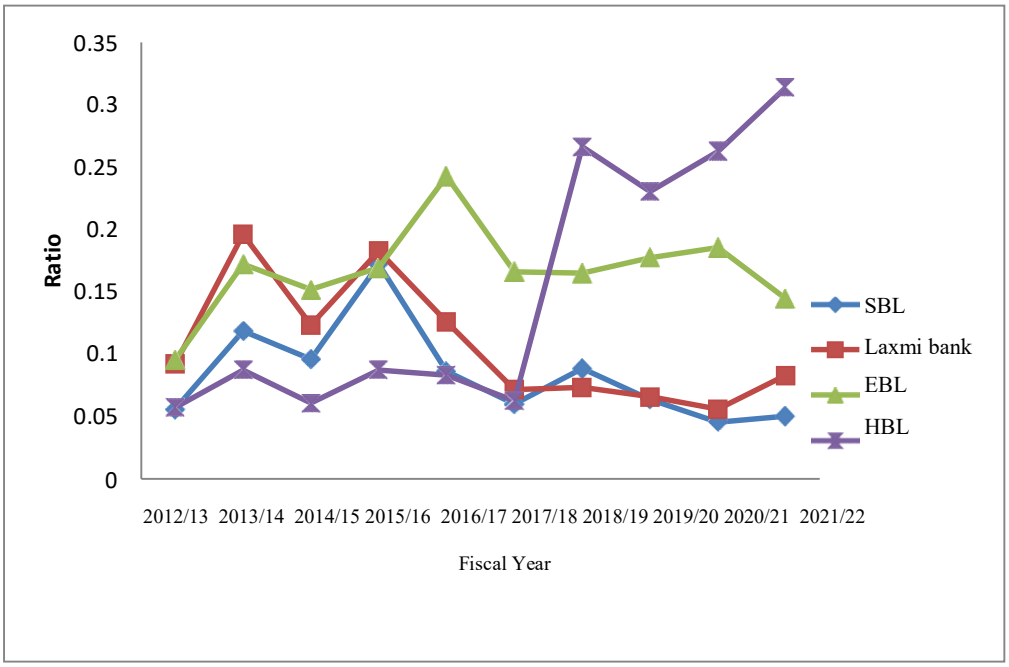
	Bank			
Fiscal Year	SBL	Laxmi Bank	EBL	HBL
2012/13	0.0960	0.1233	0.1519	0.0608
2013/14	0.1722	0.1828	0.1691	0.0872
2014/15	0.0863	0.1259	0.2427	0.0832
2015/16	0.0600	0.0717	0.1661	0.0627
2016/17	0.0886	0.0732	0.1652	0.2664
2017/18	0.0637	0.0657	0.1775	0.2305
2018/19	0.0456	0.0559	0.1856	0.2625
2019/20	0.0503	0.0829	0.1443	0.3139
2020/21	0.0501	0.0722	0.1555	0.2875
2021/22	0.0386	0.0861	0.1622	0.2572
Mean	0.0755	0.0909	0.1569	0.2001
S.D.	0.0239	0.0480	0.0395	0.0836
C.V.	31.67%	50.74%	23.38%	44.72%

Source: Annual reports of selected banks.

Table 4.4 shows the cash reserve ratio (CRR) of selected commercial banks. Over the ten-year period from 2012/13 to 2021/22, four banks, namely SBL, Laxmi Bank, EBL, and HBL, displayed varying levels of profitability as measured by Return on Assets (ROA). Among them, HBL stood out with the highest average ROA at 20.01%, indicating it was the most profitable bank on average. EBL followed closely with an average ROA of 15.69%, but it had the most volatile profitability, as reflected by its high standard deviation (0.0395) and coefficient of variation (C.V.) of 50.74%. Laxmi Bank had a respectable average ROA of 9.09%, while SBL had the lowest average ROA at 7.55%. However, SBL demonstrated greater stability in its ROA over the years, with the lowest standard deviation (0.0239) and a C.V. of 31.67%. These metrics provide valuable insights into the financial performance and risk profiles of these banks during the specified period.

Figure 4.4

Cash Reserve Ratio of Sample banks



The figure4.4 shows the cash reserve ratio (CRR) of selected commercial banks. According the table and figure Everest bank has higher average, which means it's highly liquidity to manage the performance of bank as well as Everest bank has lowest C.V. it also shows low risky for bank performance. And Siddhartha bank has lower average it indicates the bank has lowest liquidity.

4.1.4. Bank size

Bank size as measured by total assets is one of the control variables used in analyzing performance of the bank system (Smirlock, 1985). Bank size an important financial measure used to represent the volume of the bank. The size of the firm can be measure in many ways, through turnover, paid up capital, capital employed, total assets, net sales, market capitalization, etc. In the present study bank size is measured by total assets scaled in natural logarithm.

Table 4.5

Bank Size (Size in Ln) of Sample Banks

Fiscal Year	SBL	Bank Laxmi Bank	EBL	HBL
2012/13	24.2405	24.1180	24.9089	24.8366
2013/14	24.4203	24.2781	24.9781	25.0218
2014/15	25.6496	24.5427	25.3199	25.1397
2015/16	25.0328	24.7341	25.4585	25.3271
2016/17	25.2217	24.9916	25.4812	25.3985
2017/18	25.5097	25.1172	25.6987	25.4808
2018/19	25.7604	25.3961	25.8595	25.6148
2019/20	23.9298	25.5823	25.9437	25.7724
2020/21	25.2581	24.4123	25.0540	24.9688
2021/22	27.1810	25.7922	26.4931	25.1199
Mean	25.1169	24.7982	25.4426	25.2478
S.D.	1.1203	0.4367	0.5427	0.3475
C.V.	4.46%	1.76%	2.14%	1.38%

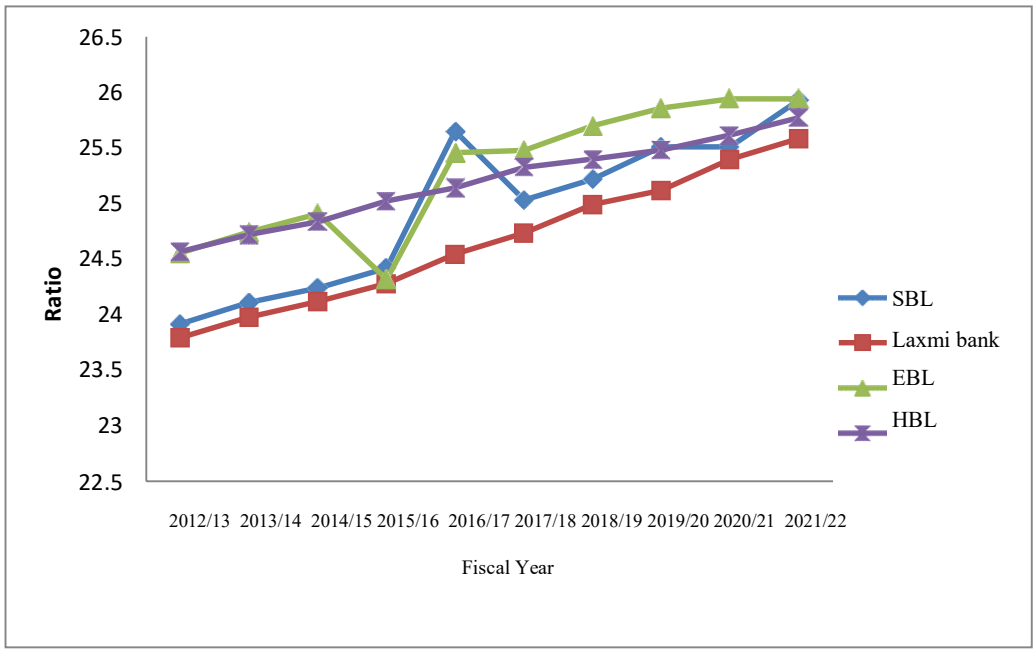
Sources: Annual reports of selected banks

The table presents a decade-long overview of the size of four banks: Sample Bank (SBL), Laxmi Bank, Eastern Bank Limited (EBL), and Himalayan Bank Limited (HBL), spanning from the fiscal year 2012/13 to 2021/22. On average, Sample Bank boasts the largest size, followed by EBL, HBL, and Laxmi Bank. However, Sample Bank also exhibits the highest variability in size, as indicated by its substantial standard deviation, suggesting fluctuation in its size over the years. In contrast, Laxmi Bank maintains the most stable size relative to its mean, evidenced by the lowest coefficient of variation. The data source for this information is the annual reports of these banks, lending credibility to the presented figures.

The above figure shows descriptive statistic mean standard deviation and C.V. the bank size of selected commercial bank from 2012/13 to 2021/22 fiscal year. According to the table and figure in fiscal year 2013/14, Siddhartha bank has highest total assets scale in natural logarithm while Laxmi bank has lowest total assets scale in natural logarithm.

Figure 4.5

Bank Size of Sample Banks (LN)



Profitability ratio

The major performance indicator of any firm is profit. The objective of investment policy is to make good return. Any organization has to desire of earning high profited which helps to survive the firm and indicates the efficient operation of the firm. Profit is the essential part of business activities to meet internal obligation, overcome the future contingencies, make a good investment policy, expand the banking transaction etc. Profitability ratios are the best indicators of overall efficiently. Here, those ratios are presented and analyzed which are related with profit as well as fund mobilization. Through the following ratios.

4.1.5. Return on assets ratio

This ratio measures the overall profitability of all working fund i.e. Total assets. A firm has to earn satisfactory return on working funds for its survival. The following table shows return on total assets ratio of selected banks.

Table 4.6

Return on Assets Ratio of Sample Banks

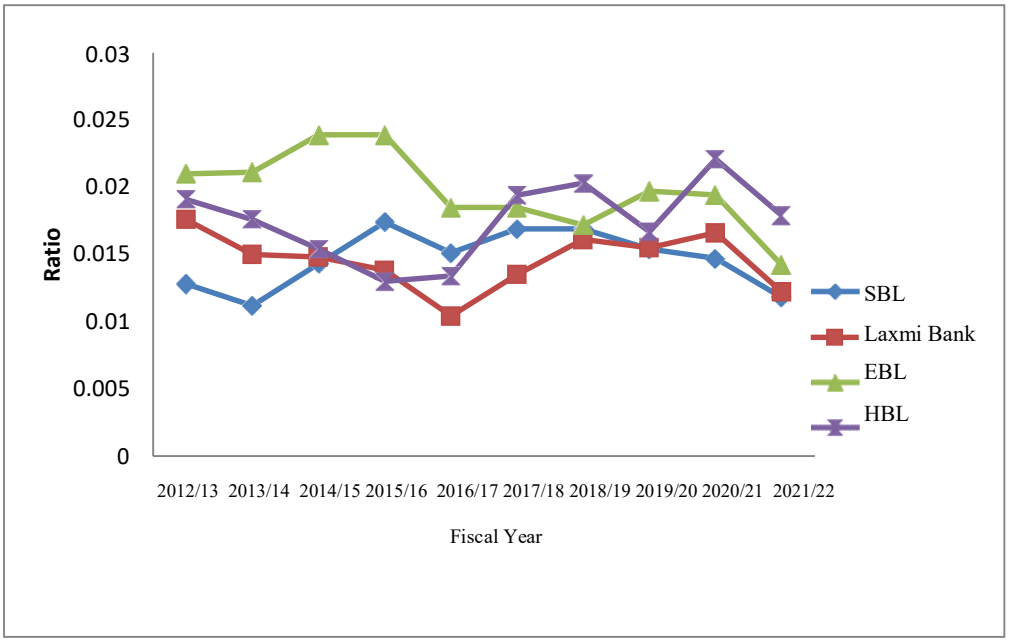
	Bank			
Fiscal Year	SBL	Laxmi Bank	EBL	HBL
2012/13	0.0143	0.0148	0.0239	0.0154
2013/14	0.0174	0.0138	0.0239	0.0130
2014/15	0.0151	0.0104	0.0185	0.0134
2015/16	0.0169	0.0135	0.0185	0.0194
2016/17	0.0154	0.0161	0.0172	0.0203
2017/18	0.0159	0.0155	0.0197	0.0167
2018/19	0.0147	0.0166	0.0194	0.0221
2019/20	0.0118	0.0122	0.0142	0.0179
2020/21	0.0124	0.0146	0.0135	0.0190
2021/22	0.0122	0.0166	0.0139	0.0170
Mean	0.0146	0.0146	0.0171	0.0160
S.D.	0.0352	0.0028	0.0034	0.0032
C.V.	24.09%	19.47%	20.09%	20.29%

Sources: Annual report of selected commercial banks.

In assessing the Return on Assets (ROA) performance of four sample banks over a ten-year period, some interesting trends emerge. Sample Bank Limited (SBL) displayed significant ROA fluctuations, with a mean of 1.46% and a high coefficient of variation (CV) of 24.09%, suggesting inconsistent profitability due to various factors impacting asset management and income generation. In contrast, Laxmi Bank demonstrated more stable ROA at 1.46% on average, with a moderately lower CV of 19.47%, indicating steadier profitability from its assets. Everest Bank Limited (EBL) outperformed with a slightly higher mean ROA of 1.71% and a CV of 20.09%, implying more efficient asset management and better profitability. Himalayan Bank Limited (HBL) had a mean ROA of 1.60% and a CV of 20.29%, akin to Laxmi Bank's relatively stable performance. Overall, EBL consistently maintained a comparatively higher ROA, while the others experienced greater fluctuations in their asset-based profitability. However, it's essential to consider these ratios alongside other financial metrics for a comprehensive assessment of each bank's financial health and performance.

Figure 4.6

Return on Assets of Sample Banks



The ROA figures indicate the percentage of profit each bank generated in relation to its total assets during a particular fiscal year over the years, these ROA values fluctuated for each bank, reflecting changes in their financial performance. The table also provides summary statistics at the bottom, including the mean (average) ROA for each bank and the standard deviation (a measure of variability) of their ROA figures. Additionally, the coefficient of variation (CV) is presented, which measures the relative variability of ROA as a percentage of the mean, providing insight into the level of risk or stability in their financial performance.

4.1.6. Return on equity ratio

Equity capital of any bank is its owned capital. The prime objective of any bank is wealth maximization or in other words to earn high profit and thereby, maximizing return on its equity capital. Return on equity plays the measuring role of profitability of bank. It reflects the extent to which the bank has been successful to mobilize or utilize its equity capital. A high ratio indicates higher successful to mobilize its owned capital and vice-versa.

Table 4.7

Return on Equity Ratio of Sample Banks

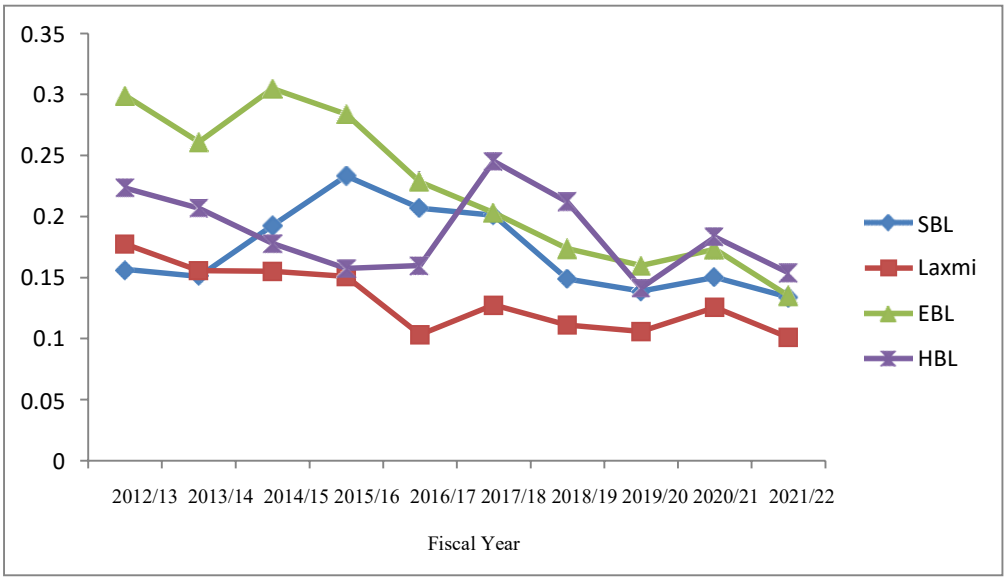
	Bank			
Fiscal Year	SBL	Laxmi bank	EBL	HBL
2012/13	0.1926	0.1551	0.3047	0.1781
2013/14	0.2334	0.1510	0.2839	0.1577
2014/15	0.2068	0.1033	0.2285	0.1598
2015/16	0.2011	0.1275	0.2032	0.2453
2016/17	0.1488	0.1111	0.1738	0.2122
2017/18	0.1389	0.1059	0.1600	0.1417
2018/19	0.1502	0.1257	0.1733	0.1834
2019/20	0.1339	0.1010	0.1350	0.1540
2020/21	0.1466	0.1475	0.1991	0.1235
2021/22	0.1481	0.1658	0.1611	0.1869
Mean	0.1348	0.1320	0.1888	0.1728
S.D.	0.0383	0.0225	0.0512	0.0308
C.V.	28.43%	17.10%	27.11%	17.84%

Sources: Annual reports of selected commercial banks.

The Return on Equity (ROE) ratios of four sample banks (SBL, Laxmi Bank, EBL, and HBL) were analyzed over a ten-year period from 2012/13 to 2021/22. The trend analysis revealed annual fluctuations influenced by factors like interest rates and economic conditions. EBL emerged with the highest average ROE of 0.1888, making it the most profitable bank on average, followed by HBL (0.1728), SBL (0.1348), and Laxmi Bank (0.1320). EBL also displayed the highest volatility in ROE with a standard deviation of 0.0512, indicating more significant fluctuations, while Laxmi Bank had the lowest standard deviation (0.0225), signifying greater stability. The coefficient of variation (C.V.) highlighted EBL's relatively higher risk (27.11%) and Laxmi Bank's lower risk (17.10%) in terms of ROE fluctuations. In summary, EBL showed the highest average returns but also higher volatility, while Laxmi Bank offered more stable performance, suggesting that stakeholders should consider both profitability and risk when assessing these banks' financial performance. Understanding the drivers behind these variations is crucial for a comprehensive evaluation.

Figure 4.7

Return on Equity of Sample banks



4.2 Statistical analysis

Statistical tool is one of the important tools to analyze the data. There are various tools for the analysis of tabulated data such as, mean, standard deviation, regression analysis, co-relation analysis, trend analysis, various types of tests etc. There are convenient statistical tools are used in this thesis study.

4.2.1. Descriptive statistic

Descriptive statistic summarizes or describes the characteristic of a data set, which can be either representation of the entire or a sample of a population. Descriptive statistics are broken down into measure of central tendency and measures of variability (spread). Measures of tendency include the mean, median, mode, standard deviation, while measures of variability, and include variance, minimum and maximum variables, kurtos is, and skewness. Descriptive statistic calculates the minimum and maximum, mean, standard deviation, and co efficient variances of the study.

Table 4.8 reveals the descriptive properties of the variables. The descriptive properties of the variables were highlighted based on the mean, maximum, minimum, standard deviation, coefficient of variation and number of observation.

Table 4.8

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	40	1.0400	3.2100	1.717250	.4033212
ROE	40	10.3300	30.4700	17.756000	5.1567779
CAR	40	10.4300	14.6900	11.979000	1.0675300
NPL	40	.0160	9.3000	1.653875	1.9882731
CLA	40	1.0900	25.4100	2.927500	3.6933414
CRR	40	4.5600	31.3900	12.712500	6.9230267
BS	40	23.7941	25.9437	25.003913	.6001999

Sources:-Appendix I

The descriptive statistic for variable used in this study. The data incorporate the period from 2010/11 to 2019/20. The mean of ROA is 1.72, the minimum 1.04 and maximum 3.22 and the mean ROE is17.7560, the minimum is10.33 and maximum is 30.47. Regarding the mean of capital adequacy ratio (CAR)is 11.98 and minimum is 10.43 and maximum is 14.69. The mean of non-performing loan (NPL) is 1.62 and minimum is 0.016 and maximum is 9.30 respectively. Cost per loan assets (CLA) mean is 2.94 where minimum and maximum is 1.09 and 25.41 respectively. The mean CRR posit is 12.72 and bear minimum and maximum is 4.56 and 31.39 respectively. The mean of bank size (BS) is 25.0039; the minimum is 23.79 and maximum 25.94.The standard deviation of sample banks ROA, ROE, NPL, CLA, CRR and BS are 0.4033, 5.1566, 1.0665, 1.9882, 3.6833, 6.9430 and 0.6002 respectively.

4.2.2 Correlation analysis

Correlation analysis is a statistical method used to evaluate the relationship between two or more quantitative variables. A high correlation means that two or more variables have a strong relationship with each other, while a weak correlation means that two or more variables are hardly related. A correlation analysis is recognized as a useful way to summaries the relationship between two variables with single number that falls within -1 to +1. The dependent variable is ROA and ROE and in dependent variables are capital adequacy ratio, non-performing loan ratio, cost per loan asset, and cash reserve ratio and bank size for the period of 10 years from 2010/11 to 2019/20.Correlation coefficients between each of the variables are computed to determine any kind of association.

Correlation matrix gives a preliminary idea of the direction of the relationship between the selected variable. That is, the meaning full correlation has been observed between ROA and ROE, where independent variable CAR, NPL, CLA, CRR and BS sample of banks.

Table 4.9

Correlation Matrix

Correlation matrix

Variables	ROA	ROE	CAR	NPL	CLA	CRR	
	BSROA		1				
ROE	.572**	1					
CAR	-0.048	-0.305	1				
NPL	0.004	-0.187	-0.028	1			
CLA	0.076	-0.071	0.151	-0.033	1		
CRR	0.247	0.192	.362*	-0.31	.420**	1	
BS	0.169	-0.142	.686**	-359*	0.212	0.209	1

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

*.Correlation is significant at the0.05 level (2-tailed).
Sources:-Appendix II

According to table 4.9, shows the correlation matrix provides some insights into the independent variables that are significantly correlated to dependent variables ROA and ROE. The result shows that bank has negative related dependent variables ROA and ROE with independent variable capital adequacy ratio which indicates that the relationship is not strong. The bank performance return on assets(ROA)is significantly positive correlated with non-performing loan ratio the result implies that as the value of NPL ratio increase the performance of bank will increase and return inequity (ROE) is negative correlated with NPL which implies the non-performing loan ratio is increase the performance of bank will decrease.

The results revels cost per loan assets, cash reserve ratio and bank size has significantly positively correlated with the bank performance ROA which implies that as the value increase, the performance of bank also increase, significantly positive correlated between ROE and CRR. And the return on equity ROE insignificant with cost per loan assets and bank size which indicates that as the value of CLA and BS increase, the bank performance of ROE will decrease.

4.2.3 Analysis of the regression

Regression analysis concerned with the study of the dependence of one variable, dependent variable, on one or more other variables, the independent variable with a view to estimating the average value of the dependent variable from the known values of the independent variable. In regression analysis there are two types of variable. The variable whose value is influenced or is to be predicted is called dependent variable and the variable which influences the values or is used for prediction, is called independent variable. In this study ROA and ROE is dependent variable and capital adequacy ratio, non-performing loan, cost per loan assets, cash reserve ratio and bank size are the independent variables.

$$ROA=a+b_1CAR+b_2NPL+b_3CPLA+b_4CRR+b_5Size+e_{it} \quad \ldots\ldots(1)$$

Table 4.10

Variation in ROA explained by CAR, NPL, CLA,CRR and BS

Model Summary

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate
1	.531[a]	0.282	0.176	0.3660563

a. Predictors: (Constant), BS,CRR,NPL,CLA,CAR

Sources:-Appendix III

Table 4.10 shows of the model summary, which explain the total variation in ROA explained by CAR, NPL, CLA, CRR and bank size. The value of coefficient of multiple determinations R Square is .282 this implies that the variation in ROA can be explained by 28.2% independent variables (CAR, NPL, CLA, CRR and BS) at 95%confidence interval.

The chance of error of the estimated is 36.605663.The coefficient of multiple determination R Square shows that 28.2% changes in ROA of Nepalese commercial bank could be accounted to change in CAR, NPL, CLA, CRR and BS and remaining 71.8% are contribute by other factors. R is the correlation coefficient which shows the relationship between the study variables. Above the table shown significant positive relationship between the study variables as how by

.531[a].

Table 4.11

Goodness off it of Regression (ANOVA)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.788	5	0.358	2.669	.039[b]
	Residual	4.556	34	0.134		
	Total	6.344	39			

a. Dependent Variable: ROA

b. Predictors: (Constant), BS, CRR, NPL, CPLA, CAR

Sources: -Appendix IV

The table shown of ANOVA, the processed data which is the population parameters had a significance level of .039[b]% which shows that the data is ideal making a conclusion on the population's parameters as the value of significance (p-value) is less than standard 5%.The Fisher's ratio (i.e., the F-statistic) which is the proof of the validity of the estimated model as reflected in the above table (model summary).The F value is about 2.669 and P value or F (sig) that to 0 .039[b]this invariably suggests clear that simultaneously the explanatory variables are significantly associated variable. That is, they strongly determine the behavior of the return on assets.

Table 4.12

Regression Results for Independent Effect of CAR, NPL, CLA, CRR and Bank Size (Coefficient)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-7.772	3.412		-2.278	0.029		
	CAR	-0.268	0.091	-0.709	-2.958	0.006	0.368	2.717
	NPL	0.084	0.038	0.413	2.232	0.032	0.617	1.62
	CAL	-0.021	0.018	-0.193	-1.145	0.26	0.744	1.344
	CRR	0.033	0.011	0.561	2.914	0.006	0.571	1.753
	BS	0.488	0.164	0.727	2.979	0.005	0.355	2.817

a. Dependent Variable: ROA

Sources:- Appendix V

From the table of regression model the beta coefficient of the CAR, NPL, CLA, CRR and BS of Nepalese commercial banks to a constant zero. Return on assets of Nepalese commercial banks would be -7.772, its established that a unit decrease level of CAR would cause to decrease in ROA by a factor of -.268, a unit increase in NPL ratio leads to increase in ROA by a factors of .084, a unit decrease in CLA would cause decrease in ROA by a factors of -.021, a unit increase in CRR ratio leads to increase in ROA by a factors of .033 and a unit increase in BS leads to increase in ROA by factors of .488 of Nepalese commercial bank. The results of show there is positive relationship between ROA and four independent variables (CAR, NPL, CRR and BS). And there is negative relationship between ROA and CLA the relationship is not significant which indicates that there is no any relationship between cost per loan assets and performance. The table also shows the VIF, multi collinearity test which indicates relationship between independent variable to each others. Here variables' tolerance value is greater than 0.2 it means there are no multi collinearity problems and variance inflation factors is greater than 1 and less than 5, as a results variables VIF value is greater than 1 the predictors may be moderately correlated.

$ROE=a+b_1CAR+b_2NPL+b_3CPLA+b_4CRR+b_5Size+e_{it}$ ..... (II)

Table 4.13

Variation in ROE explained by CAR, NPL, CLA, CRR and BS

Model Summary

Model	R	R Square	Adjusted R Square	Std.Errorof the Estimate
1	.497[a]	0.247	0.136	4.7921865

a. Predictors: (Constant), BS, CRR, NPL, CLA, CAR

Sources: - Appendix VI

Table 4.13 shows of the model summary, which explain the total variation in ROE explained by CAR, NPL, CLA, CRR and bank size. The value of coefficient of multiple determinations R Square is .247 this implies that the variation in ROE can be explained by 24.7% independent variables (CAR, NPL, CLA, CRR and BS) at 95% confidence interval. The chance of error of the estimated is 4.7921865.The coefficient of multiple determination R Square shows that 24.7% changes in ROE of Nepalese commercial bank could be accounted to change in CAR, NPL, CLA, CRR and BS and remaining 75.3% are contribute by other factors. R is the correlation coefficient which shows the relationship between the study variables. Above the table shown significantly positive relationship between the study variables as shown by .497[a], this result is complimented by R square of about 24.7%, which is essential the proportion of total variance that is explained by the model.

Table 4.14

Goodness of fit Regression ANOVA

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	256.25	5	51.25	2.232	.044[b]
	Residual	780.813	34	22.955		
	Total	1037.06	39			

a. Dependent Variable: ROE

b. Predictors: (Constant), BS, CRR, NPL, CPLA, CAR

Sources:-Appendix VII

The table shown of ANOVA, the processed data which is the population parameters had a significance level of .044[b]% which shows that the data is ideal making a conclusion on the population's parameters as the value of significance (p-value) is less than standard 5%.The Fisher's ratio (i.e., the F-statistic) which is the proof of the validity of the estimated model as reflected in the above table(model summary).The F value is about 2.232 and P value or F (sig) that to 0 .044[b]this invariably suggests clear that simultaneously the explanatory variables are significantly associated variable. That is, they determine the behavior of the return on equity.

Table 4.15

Regression Results for Independent Effect of CAR, NPL, CLA, CRR and Bank Size (Coefficient)

Coefficient[a]s

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.571	44.667		0.08	0.937		
	CAR	-2.783	1.186	-0.576	-2.346	0.025	0.368	2.717
	NPL	0.008	0.491	0.003	0.015	0.988	0.617	1.62
	CLA	-0.303	0.242	-0.216	-1.253	0.219	0.744	1.344
	CRR	0.333	0.146	0.449	2.278	0.029	0.571	1.753
	BS	1.766	2.146	0.206	0.823	0.416	0.355	2.817

a. Dependent Variable: ROE

Sources:-Appendix VIII

From the table of regression model the beta coefficient of the CAR, NPL, CLA, CRR and BS of the Nepalese commercial banks. Return on equity of Nepalese commercial banks would be 3.571, it's established that a unit decrease in CAR would cause to decrease in ROE by a factors of -2.738, a unit increase in NPL would to increase in ROE by a factors of .008, a unit is decrease in CLA leads to decrease in ROE by a factors of-.303,aun it increase in CRR would cause to increase in ROE by a factors of .333 and a unit increase in BS leads to increase in ROE by a factors of 1.766 of Nepalese commercial banks.

The result is show there is positive relationship between ROE and two independent variables (CAR and CRR). There is negative relationship between ROE and three independent variables (NPL, CLA and BS) which indicates there is no any relationship bank performance. The table also shows VIF multi collinearity test which indicates relationship between independent variable to each other. Here variables' tolerance value is greater than 0.2 it means there are no multi collinearity problems. And variance inflation factors is greater than 1 and less than 5,asaresults variables VIF value is greater than1the predictors may be moderately correlated.

4.4 Major findings

The regression model developed to explain Return on Assets (ROA) using independent variables such as CAR, NPL, CLA, CRR, and BS yielded some insights, but its overall explanatory power is quite limited. The R-squared value of 0.282 indicates that approximately 28.2% of the variation in ROA can be accounted for by these variables. However, when adjusting for the number of predictors, the adjusted R-squared drops to 0.176, implying that only 17.6% of the ROA variation can be attributed to the chosen independent variables.

Capital Adequacy ratio: All four banks generally maintained adequate capital levels to withstand unexpected losses. EBL consistently had the highest CAR, indicating a strong capital position, while SBL and Laxmi Bank exhibited relatively stable returns. EBL and HBL experienced more variability in this aspect.

Non performing Loan Ratio: The non-performing loan ratio varied among the banks, with HBL consistently having the lowest ratio. This suggests HBL's effectiveness in loan repayment management. EBL, on the other hand, showed the highest variability in its non-performing loan ratio.

Cost per loan Assets: EBL had the highest average cost per loan asset, indicating higher loan distribution expenses but also lower risk. In contrast, SBL had the lowest average cost per loan asset, reflecting greater efficiency but higher relative risk.

Cash Reserve Ratio: HBL consistently maintained the highest CRR, signaling a higher level of liquidity, while SBL had the lowest CRR, indicating lower liquidity.

Bank Size: SBL was the largest bank in terms of total assets, with more variability in size, while Laxmi Bank was the smallest but had a more stable size relative to its mean.

Return on Assets: EBL consistently achieved the highest average ROA, highlighting its superior profitability. However, it also exhibited significant fluctuations in ROA. SBL and Laxmi Bank had lower but relatively stable ROAs, whereas HBL's ROA showed moderate stability.

Return on Equity: EBL also had the highest average ROE, making it the most profitable bank. However, it experienced the highest volatility in ROE. Laxmi Bank had the lowest risk in terms of ROE fluctuations.

Analyzing the individual coefficients, it's evident that none of the independent variables are statistically significant predictors of ROA. CAR, which has a negative coefficient of -0.241, suggests that a higher Capital Adequacy Ratio is associated with lower ROA, but this relationship is not statistically significant. Similarly, NPL has a very small and non-significant coefficient of -0.001, indicating that Non-Performing Loans have a minimal impact on ROA. CLA, with a non-significant positive coefficient of 0.084, and CRR, with a positive coefficient of 0.217 but not statistically significant, also do not provide strong explanatory power. Lastly, BS, with a non-significant positive coefficient of 0.204, doesn't appear to have a significant influence on ROA either.

This regression model falls short in explaining ROA variation in the context of the given independent variables. The low adjusted R-squared value and the lack of statistical significance for any of the coefficients suggest that other unobserved or omitted factors likely play a crucial role in influencing a bank's ROA. To gain a better understanding of bank performance, further research and the inclusion of additional variables may be necessary.

It's important to consider that financial performance is a complex interplay of multiple factors, and this model's limitations highlight the need for a more comprehensive analysis to effectively assess and predict ROA in the banking sector.

4.5 Discussion

The study used descriptive and multiple regression analysis to examine the factors affecting the credit risk management and bank performance of commercial banks appropriate research methodology has used secondary data were collected for the annual reports of selected commercial banks. To obtain the result of the study different financial and statistical tools are used.

From the regression model the results revealed that capital adequacy ratio, non-performing loan, cash reserve ratio and bank size have significant positive relationship with return on assets ROA of Nepalese commercial banks. And cost per loan assets has insignificant relationship with return on assets of commercial banks and from the regression model the results of capital adequacy ratio and cash reserve ratio has significant positive relationship with return on equity ROE and non-performing loan, cost per loan asset and bank size has insignificant relationship with return on equity of selected commercial banks.

The results of capital adequacy ratio (CAR) having a positive relationship with ROA and ROE consistent with Bhattarai (2016),Paudel (2012),and Ekinci & Kenet (2019).

This may be because high capital adequacy ratios manage the credit risk and bank's performance. The results of non-performing loan ratio having negative relationship with ROA and ROE are not consistent the finding Bhattarai (2016). The results of non-performing loan ratios having positive relationship with ROA and ROE are consistent with Abiola and Olausi (2014).

The results of cost per loan assets having positive relationship with ROA and ROE are consistent the finding Bhattarai (2016). CPL having negative relationship with ROA is not consistent the finding Paudel (2012). It indicates no any relationship CPL and performance.

The results of cash reserve ratio having positive relationship with ROA and ROE are consistent the finding Bhattarai (2016). It indicates CRR is impact of bank performance. By changing CRR, the central bank can control the amount of liquidity. If the reserve requirement is raised, banks will have less money to loan out and this effectively reduces the amount of capital in the economy, therefore lowering the money supply.

The results of bank size of having positive relationship with ROA is consistent the finding Bhattarai (2016). Bank size controls for cost differences in product and risk diversification according to the size of the financial institution. This is included to control for the possibility that large banks likely to have greater product and loan diversification.

CHAPTER V
SUMMARYANDCONCLUSION

This is final chapter that involves summary, conclusions and implications of the research work. The fact and finding from secondary data analysis are presented in this chapter.

5.1 Summary

This chapter provides a brief summary of the entire body and highlights the major findings of the study. The objective of the study was to investigate the internal factors affecting the credit risk management and bank performance of bank. Chapter one gave a detailed background of effect of credit risk and bank performance of bank and objectives of the study. The chapter also focused significance of the study, limitation and the organization of the study. The specific objectives of this study are (1) to investigate the impact of credit risk on performance of Nepalese commercial bank, (2) to analyze the impact of CAR, NPLR,CLA, CRR and Bank size on ROA of Nepalese commercial banks, (3) to examine the impact of CAR, NPLR, CLA, CRR and Bank size on ROE of Nepalese commercial banks.

Chapter two presented the review of theoretical literature on credit risk management and bank performance of commercial banks. Different theories of discussion in this chapter, so many national and international articles and these related to factors affecting the credit risk management and bank performance of commercial banks also reviewed in this section. This chapter defined the summary and gaps to be filled by the study, and this chapter also defined the theoretical framework.

Chapter three was structure around research design, population, sample design, data collection procedures and instrument, data analysis and presentation. The sample comprised of four sampled commercial banks (i.e. Siddhartha bank, Laxmi bank, and Everest bank and Himalayan bank) from a total population of 21 commercial banks by using a convenient sampling method that met the eligibility criteria. To achieve the objectives of the study, descriptive and causal comparative research design has been employed.

Chapter four presented and discussed the result so empirical testing of factors affecting the credit risk management and bank performance of commercial banks. Data are analyzed by using appropriate financial descriptive and analytical tools. Major finding of the study were also pointed out in this chapters. This analysis provides valuable insights into the credit risk management and performance of selected commercial banks. EBL consistently stood out as the most profitable bank, but it also exhibited higher volatility. On the other hand, SBL and Laxmi Bank offered relatively stable but lower returns, while HBL maintained moderate stability in profitability. The size and liquidity of these banks varied, and stakeholders should consider both profitability and risk when evaluating their financial performance. Understanding the factors behind these findings is crucial for making informed decisions in the banking sector.

5.2 Conclusion

The main purpose of study is to investigate the credit risk management and bank performance of commercial banks. For this study using secondary data off our commercial banks, with 40 observations for the period of 2012/13 to 2021/22 have been used for the analysis. The results showed that credit risk management an important predictor of bank financial performance thus success of bank performance depends on risk management.

Based on the results of study capital adequacy ratio, non-performing loan ratio, cash reserve ratio and bank size mostly impact the banks performance. This is evidence by the significant results of capital adequacy ratio could be regarded as the influencing variable for bank performance, higher capital adequacy is able to absorb possible loan losses and avoids bank run insolvency and cover the risk. The results of the study show non-performing loan is positive significant with ROA and insignificant with ROE. It means non-performing loan only influencing to banks ROA. Cost per loan assets has insignificant of bank performance, it means CLA could not be influencing variable to enhance bank performance. Whereas cash reserve ratio has significant the bank performance, CRR is measure the liquidity of bank. The study has found credit risk indicators; bank performance is also affected by bank size.

It was also analyzing bank return on equity, whereas capital adequacy ratio and cash reserve ratio significant of bank performance. It provides to owners predict enhance bank performance and capital allocation decision. Since credit risk management in general has very significant contribution to bank performance the bank performance the bank is advised to put more emphasis on risk management, to reduces risk on loans and achieve maximum performance.

5.3 Implication

This study also has several implications pointing to interesting avenues for future research. Some implication and suggestions for future research are discussed here.

5.3.1. General implication

I. Based on the finding of the study, for banking investment to customer analysts can use the information regarding the factors they should consider investment decisions and while predicted the credit risk management and bank performance of banks. The results of study suggest banker should pay attention to CAR, NPLR, CLA, CRR and bank size before making any decisions regarding to investment.

II. This study examined the internal factors that affect the credit risk management and bank performance of Nepalese commercial banks. The variable chosen were firm specific variables and may not be only variables that affect bank performance. It is recommended that further research could be conducted to established whether other external factors.

III. This study has been conducted in the context of Nepalese commercial banks, with short period of time and with small size. Future studies may deal with a wide area of firms with a long period of time.

IV. There is need to conduct an event study on the factors impact credit risk management and bank performance for listed commercial banks. Internal factors like (CAR, NPLR, CLA, CRR and Bank size) are vital element of commercial banks. This thesis reveled much on the factors impact the credit risk management and bank performance of commercial banks and hence has contributed in the area of banking sectors in Nepal.

V. This study guide to potential investor's decision in Nepal to focus on the factors discussed above before making investment decisions. It is helps to reduce credit risk and increase bank performance and profitability.

5.3.2 Implication for future studies

This study has portrayed some crucial results and one avenue for the future research is to extend the study to other emerging market.

This result is basically from "A" class financial institution of Nepal. Thus the future study may in corporate other financial sectors such as development banks, insurance finance companies and micro-finance companies. The study is entirely based on secondary data. Therefore, future study can be based on using primary data or both primary and secondary data. The sample size and time period taken for the study is limited so future study can be carried out by taking a large sample size for a longer time period. The model used in study is limited multiple linear regressions. Thus other model can be taken to set a model and examine the impact of corporate governance on the capital structure of Nepalese commercial banks. Finally, future studies can use some advanced statistical tools.

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Appendix I

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	40	1.0400	3.2200	1.717250	.4033322
ROE	40	10.3300	30.4700	17.756000	5.1566779
CAR	40	10.4300	14.6900	11.979000	1.0665300
NPL	40	.0160	9.3000	1.623875	1.9882731
CPLA	40	1.0900	25.4100	2.937500	3.6833414
CRR	40	4.5600	31.3900	12.722500	6.9430267
BS	40	23.7941	25.9437	25.003913	.6001999
ValidN (listwise)	40				

Appendix II

Correlations

		ROA	ROE	CAR	NPL	CPLA	CRR	BS
ROA	Pearson Correlation	1	.572**	-.048	.004	.076	.247	.169
	Sig.(2-tailed)		.000	.770	.981	.641	.124	.298
	N	40	40	40	40	40	40	40
ROE	Pearson Correlation	.572**	1	-.305	-.187	-.071	.192	-.142
	Sig.(2-tailed)	.000		.056	.248	.664	.235	.381
	N	40	40	40	40	40	40	40
CAR	Pearson Correlation	-.048	-.305	1	-.028	.151	.362*	.686**
	Sig.(2-tailed)	.770	.056		.865	.353	.022	.000
	N	40	40	40	40	40	40	40
NPL	Pearson Correlation	.004	-.187	-.028	1	-.033	-.310	-.359*
	Sig.(2-tailed)	.981	.248	.865		.839	.051	.023
	N	40	40	40	40	40	40	40
CPLA	Pearson Correlation	.076	-.071	.151	-.033	1	.420**	.212
	Sig.(2-tailed)	.641	.664	.353	.839		.007	.189
	N	40	40	40	40	40	40	40
CRR	Pearson Correlation	.247	.192	.362*	-.310	.420**	1	.209
	Sig.(2-tailed)	.124	.235	.022	.051	.007		.195
	N	40	40	40	40	40	40	40
BS	Pearson Correlation	.169	-.142	.686**	-.359*	.212	.209	1
	Sig.(2-tailed)	.298	.381	.000	.023	.189	.195	
	N	40	40	40	40	40	40	40

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

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

Appendix III

Coefficients[a]

Model		Unstandardized Coefficients		Standardiz Ed Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-7.772	3.412		-2.278	.029		
	CAR	-.268	.091	-.709	-2.958	.006	.368	2.717
	NPL	.084	.038	.413	2.232	.032	.617	1.620
	CAL	-.021	.018	-.193	-1.145	.260	.744	1.344
	CRR	.033	.011	.561	2.914	.006	.571	1.753
	BS	.488	.164	.727	2.979	.005	.355	2.817

a.Dependent Variable: ROA

Appendix IV

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531[a]	.282	.176	.3660563

a.Predictors:(Constant),BS,CRR,NPL,CPLA,CAR

Appendix V

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.788	5	.358	2.669	.039[b]
	Residual	4.556	34	.134		
	Total	6.344	39			

a. Dependent Variable: ROA

b. Predictors:(Constant),BS,CRR,NPL,CPLA,CAR

Appendix VI

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.497[a]	.247	.136	4.7921865

a.Predictors: (Constant),BS,CRR,NPL,CPLA,CAR

Appendix VII

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	256.250	5	51.250	2.232	.044[b]
	Residual	780.812	34	22.965		
	Total	1037.062	39			

a. Dependent Variable: ROE

b. Predictors:(Constant),BS,CRR,NPL,CPLA,CAR

Appendix VIII

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.571	44.667		.080	.937		
	CAR	-2.783	1.186	-.576	-2.346	.025	.368	2.717
	NPL	.008	.491	.003	.015	.988	.617	1.620
	CAL	-.303	.242	-.216	-1.253	.219	.744	1.344
	CRR	.333	.146	.449	2.278	.029	.571	1.753
	BS	1.766	2.146	.206	.823	.416	.355	2.817

a.Dependent Variable: ROE