FINANCIAL ANALYSIS OF COMMERCIAL BANKS IN NEPAL USING CAMEL FRAMEWORK

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

By

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled **"Financial Analysis of Commercial Banks in Nepal Using CAMEL Framework"**. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it 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

Mrs. Bhawana Pudasaini has defended research proposal entitled "**Financial Analysis of Commercial Banks in Nepal Using CAMEL Framework"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Asso. Prof. Dr. Kapil Khanal and submit the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled "**Financial Analysis of Commercial Banks in Nepal Using CAMEL Framework"** presented by Bhawana Pudasaini, a candidate for the degree of Master of Business Studies (MBS) and conducted the viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURE

ABBREVIATIONS

ADBL:	Agricultural Development Bank
CAMEL:	Capital Assets Management Earnings Liquidity
CAR:	Capital adequacy ratio
CBBR :	Cash and bank balance ratio
CCR :	Core capital ratio
CDR:	Credit to deposit ratio
CRR :	Cash reserve ratio
EPS :	Earnings per share
IGSR :	Investment in government securities ratio
IMF:	International Monetary Fund
LLCR :	Loan loss coverage ratio
LLPR :	Loan loss provision ratio
MER :	Management efficiency ratio
NBL:	Nepal Bank Limited
NPLR :	Non-performing loan ratio
NRB:	Nepal Rastra Bank
RBBL:	Rastriya Banijya Bank Limited
ROA :	Return on assets
ROE :	Return on equity

ABSTRACT

This study evaluates the financial performance of three state-owned commercial banks in Nepal Rastriya Banijya Bank Ltd (RBBL), Agricultural Development Bank Ltd (ADBL), and Nepal Bank Ltd (NBL) through the CAMEL framework, which assesses Capital Adequacy, Asset Quality, Management Efficiency, Earnings, and Liquidity. The research aims to determine whether CAMEL indicators reliably reflect overall financial performance and profitability of commercial banks. Using secondary data from FY 2013/14 to 2022/23, financial statements and ratios were analysed through descriptive research design, ratio analysis, correlation, and regression techniques.

Findings indicate that all three banks maintained adequate capital reserves, with improving asset quality and stable liquidity positions. However, indicators such as Earnings per Share (EPS) and Return on Equity (ROE) showed declining trends in recent years, pointing to profitability challenges. The study also finds significant correlations between CAMEL components and profitability metrics (ROE and ROA), validating CAMEL as an effective framework for financial evaluation. Despite covering only three banks, the results offer insights into the broader state of Nepal's public banking sector.

This research contributes to the limited body of CAMEL-based evaluations in Nepal, especially concerning state-owned banks, and provides practical recommendations to improve risk management, operational efficiency, and profitability. Future research could benefit from including more banks, incorporating primary data, and employing more advanced analytical models such as the CAMELS framework.

Keywords: *Capital Adequacy, Asset Quality, Management Efficiency, Earnings Ability, Liquidity Management*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

Banking refers to the business activity of accepting deposits from the public, safeguarding those funds, and lending them to individuals, businesses, and institutions for various purposes. A bank serves as a financial intermediary, facilitating the flow of money within an economy. Besides deposit and loan services, banks also offer other financial functions such as remittance, currency exchange, investment services, and digital payments. The primary objective of banking is to mobilize savings, ensure credit distribution, and promote economic growth by efficiently managing financial resources.

The word “bank” is believed to have originated from the Middle French word “banque” and the Italian word “banca”, both meaning a bench or counter. In medieval times, moneylenders and merchants would carry out financial transactions by sitting on benches in marketplaces—thus the term became associated with financial dealings.

The concept of banking dates back to ancient civilizations like Babylon, Egypt, and Greece, where temples and palaces acted as safekeeping places for grain and precious metals. The earliest known form of banking was practiced by Babylonian priests, who accepted deposits and lent money at interest as early as 2000 BCE.

The modern banking system began to take shape in medieval Europe, particularly during the Renaissance. The Medici family in Italy is often credited with establishing one of the first organized banking systems in the 14th century. Over time, banks evolved from private moneylenders into institutionalized bodies that played a central role in national economies.

With the growth of international trade and industry, banks expanded their services and began to facilitate credit, foreign exchange, and investment operations. Central banks such as the Bank of England (established in 1694) and later the Federal Reserve System in the United States became key regulators of money supply and financial stability.

The CAMEL analysis is a method of assessing the overall financial soundness of banks and other financial institutions. The CAMEL framework is a set of criteria used to evaluate the performance of a BFI. The analysis model is beneficial to BFIs, customers, investors, and regulators, as it is used to ensure that institutions have sound financial health and are not at the risk of going insolvent. It is used by regulators to identify any potential risks that banks and other financial institutions may face. The acronym stands for Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity. Capital is the amount of money a bank has to cover any losses, Asset Quality refers to the quality of loans and other investments made by the bank, Management refers to the soundness of the bank's governance and operations, Earnings reflect the bank's profitability, and Liquidity measures the bank's ability to meet its short-term obligations.

The CAMEL framework was first developed by the Federal Reserve Board (Board of Governors in the USA) in 1979 and was later implemented by the Basel Committee on Banking Supervision. The Basel Committee was tasked with developing a global standard for evaluating the performance of BFIs and managing systemic risks across borders. The committee developed the framework as a means to assess the overall health of financial institutions and their ability to meet obligations. Over time, the framework evolved, and a sixth component — Sensitivity to Market Risk — was added to form CAMELS, reflecting the growing complexity of financial systems worldwide.

The CAMEL analysis model is beneficial in multiple ways. Firstly, it allows for the evaluation of a financial institution’s solvency, thereby helping depositors and potential investors make informed decisions. Secondly, it helps reduce risk and ensures that the institution complies with regulatory standards. Thirdly, it offers a clear framework for analyzing both current financial performance and long-term viability. For regulators like NRB, it provides an early warning system for potential financial distress.

Nepal Rastra Bank (Bank Supervision Department) continues to adopt and implement the Core Principles prescribed by the Basel Committee. Supervision is done through both on-site and off-site programs. NRB's traditional on-site inspection was based on compliance check and CAMELS (Capital Adequacy, Asset Quality, Management competence, Earning, Liquidity, and Sensitivity to Market Risk) ratings. The Risk Based Supervision

approach which was adopted by Bank Supervision Department since 2014 puts more emphasis on assessing the quantity of risks and the quality of risk management (Bank Supervision Report, NRB, 2019-20).

The CAMELS model has gained widespread usage and recognition within the fields of finance and management for assessing the financial stability of commercial banks. Regulators have found the CAMELS model to be effective in assessing the performance of the financial sector. Nepal Rastra Bank has accepted the CAMELS framework as the rating model for banks operating in Nepal. In recent times, the Nepalese banking sector has experienced a significant trend of merger and acquisition activities owing to meeting capital requirements and regulatory obligations. Given this dynamic environment, the purpose of this research is to analyze the financial fortitude of commercial banks in Nepal utilizing the CAMELS approach. The study explores the relationships between various measures like operational efficiency, bank size, asset management, interest income, and return on assets, shedding light on their impact on the overall bank performance. Furthermore, the study aims to address pertinent research questions by incorporating a market stress test to identify banks capable of better absorbing market uncertainties (Karki & Rajbhandari, 2020).

Several methods are used to evaluate banking performance. A well-known method is the CAMELS framework, which was created in the early 1970s by federal regulators in the United States. The CAMELS rating system assesses six key aspects of a financial institution’s operations: Capital Adequacy, Asset Quality, Management Soundness, Earnings and Profitability, Liquidity, and Sensitivity to Market Risk. This framework helps banks focus on improving capital adequacy, enhancing asset quality, strengthening management practices, boosting earnings, ensuring liquidity, and managing exposure to various financial risks (Gawde, Panda, & Ingale, 2018)

CAMEL is a Moody's-recommended systematic methodology for assessing a bank's overall security, coherence, and soundness. Because of their inherent nature, banks play an important and significant role in economic and capital development. As a result, it is important that banks should be given more importance and consideration than any other

financial institution in the economy. The banking sector's financial performance is a powerful indicator of the robustness of a country's economic activities. Using the CAMEL model parameters, we can evaluate the bank's financial performance, its financial condition, the operating soundness, and the overall regulatory compliance. (Gupta, R. C., 2014).

Despite the importance of CAMEL in banking supervision, only a limited number of academic studies in Nepal have deeply applied the model, especially in evaluating state-owned commercial banks. Most existing literature focuses on profitability, liquidity, or productivity analysis, often overlooking broader regulatory health indicators. Hence, this study aims to fill that research gap by applying the CAMEL framework to analyze the financial performance of Rastriya Banijya Bank Ltd., Agricultural Development Bank Ltd., and Nepal Bank Ltd. over a 10-year period (FY 2013/14 to 2022/23), thereby contributing to more comprehensive financial performance assessment in the Nepalese context.

1.1.1 History of the Banking in Nepal

A bank is a financial institution that accepts deposits from customers and makes loan to borrowers. It is an intermediately that serves as a facilitator for transactions between depositors and borrowers, and is a crucial component of the financial system of a country. The history of banking in Nepal dates back to the late 19th century when the first bank, Nepal Bank Limited, was established in 1937 with the assistance of the Bank of India. Nepal Bank Limited was a government-owned bank and was the first and only bank in the country until the establishment of Rastriya Banijya Bank in 1966.

In the 1970s and 1980s, the Nepalese government liberalized the banking sector, allowing for the entry of private banks. This led to an increase in the number of banks in the country and the development of a more competitive banking sector. With the introduction of market-oriented economic reforms, the Nepalese banking sector underwent further liberalization, leading to the entry of foreign banks and increased competition. This period also saw the introduction of new banking products and services, such as credit cards and ATMs, and the expansion of branch networks.

In recent years, the Nepalese banking sector has continued to grow and evolve, with a focus on improving technology, expanding financial inclusion, and enhancing the quality of services offered to customers. The banking sector has played a crucial role in supporting the development of the Nepalese economy and has contributed to the growth of various industries, such as agriculture, tourism, and small and medium-sized enterprises.

The regulatory framework for the banking and financial sector in Nepal is governed by the Nepal Rastra Bank (NRB), the central bank. NRB is responsible for formulating, implementing, and administering the monetary, credit, foreign exchange, and other financial policies related to banking and financial institutions in Nepal. The NRB also oversees and regulates all financial institutions including commercial banks, development banks, finance companies, microfinance institutions and other companies including Hydropower Investment & Development Company Limited & Infrastructure Bank Limited.

CAMEL analysis is used by the Nepal Rastra Bank to assess the financial soundness of banks and financial institutions in Nepal since the early 2000s. This includes looking at the bank's capital, asset quality, management, earnings and liquidity. The Central Bank also monitors the performance of the banks and financial institutions on an ongoing basis. This helps to ensure that the banks and financial institutions in the country remain sound and stable and do not pose any potential risks to the financial sector. The framework has also helped regulators identify potential risks and take steps to mitigate them. Nepal Rastra Bank (NRB) has directed BFIs through capital adequacy framework 2015 for minimum capital requirement. The central bank, had adopted a policy to increase the paid-up capital of BFIs to reduce their number through the monetary policy of 2074/75 BS. After the implementation of the regulations related to the merger or amalgamation of BFIs, the merger process has gained momentum.

1.1.2 Profile of the Sampled Banks

Among various BFIs, I have chosen three state owned banks; Rastriya Banijya Bank, (98.98% government owned), Nepal Bank Ltd., (51% government-owned) and the

Agricultural Development Bank, (65.29% government-owned, including non-cumulative irredeemable preference share capital). The research is done on the basis of the financial reports within a certain period of time. The main purpose of selecting these banks is to find out the financial health of commercial banks through CAMEL.

Rastriya Banijya Bank Limited (RBBL)

Rastriya Banijya Bank Limited (RBBL) is a nationalized commercial bank in Nepal, established in the year 2055 B.S. (1998 A.D.). It operates with the objective of providing banking services to its customers in the most efficient manner. RBBL is the largest bank in Nepal, with over 500 branches and presence in all 75 districts across the country.

RBBL is a state-owned bank, and it is responsible for providing banking services to the general public, as well as to the government and other public sector organizations. The bank offers a wide range of financial products and services, including savings and current accounts, fixed deposits, loans, and other banking services. It also provides services such as foreign exchange, remittances, and trade financing. RBBL has a strong emphasis on providing banking services to the rural and under banked population in Nepal, and it has a wide network of branches throughout the country. The bank has been working on expanding its branch network, implementing new technologies and providing various digital banking services to its customers. It also plays a crucial role in promoting the economic development of Nepal by providing loans and other financial services to small and medium-sized enterprises (SMEs) and other businesses.

RBBL plays a critical role in the Nepalese economy, as it is responsible for providing banking services to the government, which is the largest borrower in the country. Additionally, the bank also plays a key role in providing funding for infrastructure projects and other development initiatives.

Agricultural Development Bank Limited (ADBL)

Agricultural Development Bank Limited (ADBL) is a leading commercial bank in Nepal that focuses on providing financial services to the agricultural sector. Established in 1968, the bank has been instrumental in promoting and supporting the development of the agricultural sector in Nepal.

ADBL offers a wide range of financial products and services to farmers, agricultural businesses, and rural communities. These include loans, savings accounts, and insurance. The bank also provides financial services to small and medium enterprises (SMEs) in the agricultural sector.

The bank has a wide network of branches throughout the country and serves more than 1 million customers. It has been working to provide the banking services to the rural and remote areas of the country, where the banking services are not easily accessible. ADBL also has a strong emphasis on financial inclusion and providing banking services to the under banked population in Nepal.

Overall, ADBL plays a critical role in supporting the agricultural sector of Nepal and its effort have contributed to the growth and development of the sector over the years. One of the main goals of ADBL is to promote and support the development of the agricultural sector in Nepal. To achieve this, the bank works closely with government agencies and other organizations to develop and implement policies and programs that promote sustainable agricultural development. Additionally, ADBL also provides funding for new technologies, infrastructure projects, and other initiatives that support the growth and expansion of the agricultural sector.

Nepal Bank Limited

Nepal Bank Limited (NBL) is one of the oldest and largest commercial banks in Nepal. It was established in 1937 and is the first commercial bank of Nepal. As a state-owned bank, it is responsible for providing banking services to the general public, as well as to the government and other public sector organizations.

NBL offers a wide range of financial products and services, including savings and current accounts, fixed deposits, loans, and other banking services. It also provides services such as foreign exchange, remittances, and trade financing. The bank has a wide network of branches throughout the country and serves over 1.5 million customers.

One of the main goals of NBL is to promote and support the development of the Nepalese economy. To achieve this, the bank works closely with government agencies and other organizations to develop and implement policies and programs that promote economic growth and development. Additionally, NBL also provides funding for infrastructure projects and other initiatives that support the growth and expansion of the Nepalese economy.

NBL has been working on expanding its branch network, implementing new technologies, and providing various digital banking services to its customers. The bank has also been focusing on increasing its presence in the rural areas, and providing banking services to the under banked population in Nepal.

1.2 Problem statement

The banking sector occupies a very important place in the country's economy, acting as an intermediary to all industries, ranging from agriculture, construction, textile, manufacturing, and so on. The banking sector thus contributes directly to national income and its overall growth. As the banking sector has a major impact on the economy as a whole, evaluation, analysis, and monitoring of its performance is very important (Gawde, Panda, & Ingale, 2018).

Commercial banks present their financial data mainly through two important reports: the balance sheet and the income statement. The balance sheet shows the financial condition of the bank at a specific point in time, while the income statement, also known as the profit and loss account, shows how much profit or loss the bank made over a period. These financial statements help us understand the bank's profitability. However, they may not give a complete picture of its overall financial performance. To address this gap, experts have created various financial and statistical tools.

One of the most widely used tools is the CAMEL model, which was developed by U.S. federal regulators in the 1970s. This model assesses banks based on five key aspects: Capital Adequacy, Asset Quality, Management Efficiency, Earnings Quality, and

Liquidity. These components are used during in-person bank inspections to determine a bank's strength and stability.

The primary objective of this study is to evaluate the financial health and overall performance of selected commercial banks. This evaluation will be carried out using the CAMEL model, which analyse banks based on five key components: capital adequacy, asset quality, management efficiency, earnings quality, and liquidity. The research will be guided by specific following questions designed to assess how effectively these banks are performing in each of these areas:

i. What is the present condition of the chosen banks' CAMEL metrics?
ii. Does the CAMEL framework correlate with the financial performance of commercial banks in Nepal??
iii. How does the profitability of the sample banks correlate with components of CAMEL?

1.3 Objectives of the study

The primary goal is to evaluate, analyse, and interpret the financial performance of Nepalese commercial banks using sampled banks within the CAMEL framework. The specific aims of the study are as follows:

i. To assess the adequacy of capital, quality of assets, management efficiency, earnings, and liquidity of the sampled banks.
ii. To explore the correlation between CAMEL indicators and the financial performance of selected institutions.
iii. To examine the influence of CAMEL analysis on profitability.

1.4 Rationale of the Study

Assessing the financial status of a business is essential for making sound financial decisions. Poor financial management can negatively impact liquidity, turnover, and profitability. To ensure the smooth operation and success of an organization, it is important to regularly evaluate its financial position. This study aims to analyse the financial performance of Nepalese commercial banks. In any organization, resources are limited and it is essential to effectively utilize them to achieve the organization's goals.

Therefore, analysing the current financial performance is necessary to understand the effectiveness of policies, management skills, fund mobilization and asset utilization.

Efficient financial performance is a reflection of the strengths and weaknesses of the banking sector. Therefore, the establishment of banks is not as important as how effectively they perform. This study focuses solely on evaluating the financial performance of commercial banks.

This study examines various financial performance indicators and the financial stability of banks, with a focus on identifying and comparing the financial health of banks using the CAMEL framework. Thus, by providing information on the performance capabilities of banks to management, it helps potential and existing shareholders understand risk and return on investment. It is beneficial for depositors, industry professionals, and other stakeholders in understanding the overall performance of the bank. It is also useful for those looking to conduct further research in this field. The significance of the study primarily lies in its value to researchers, research groups, and academicians as a reference for future studies.

1.5 Limitations of the Study

As each and every study has its limitation. We have limited resources and it may be difficult to explore researcher to find out new aspect. Reliability of statistical tools used and lack of research experience are the major limitation and some other limitations can be enlisted as follows:

Out of twenty commercial banks, here study only considers three banks (i.e., ADBL, RBBL & NBL) and their performance within fifteen fiscal years i.e. from FY 2070/71 to FY 2079/80 for the comparative analysis of commercial banks. So, this thesis highlights the trends within commercial banks, but it does not fully represent the entire spectrum of all commercial banks.

In this tough competition era, there can be other factors beside the financial factors which effect the overall positions of the bank. But, all factors are not considered in this research because of limited time frame and tools used in this research process.

This study is based on secondary data, information and by review of relevant literatures, articles. Thus, it may bias some extent.

CHAPTER II
LTERATURE REVIEW

A literature review is a comprehensive examination of published works on a particular topic by reputable scholars and researchers. It is often included as part of the introduction to an academic essay, research report, or thesis, although it may also be assigned as a separate task. The purpose of a literature review is to inform the reader about what has been established in terms of knowledge and ideas related to the topic, and to highlight the strengths and weaknesses of the existing literature.

As a piece of writing, a literature review should be focused on a central concept or guiding idea that relates to the research objective, problem or issue, or argumentative thesis being discussed. It is not a simple list of available materials or a collection of summaries, but rather a discursive prose that presents synthesized and evaluated information according to the guiding concept.

The literature review should be organized into sections that explore themes, identify trends, and relevant theories. It should not aim to cover every single piece of literature, but rather to synthesize and evaluate the available materials based on the guiding concept of the thesis or research question.

The literature review should also be directly related to the thesis or research question being developed, summarize the results of the available research, identify areas of controversy in the literature, and propose questions for further research. Therefore, a literature review provides an overview of the existing knowledge and research on a particular topic in relation to the thesis being discussed.

2.1 Theoretical Review

In the current context, there have been significant changes, developments, and updates in the financial sector. As the environment evolves, the methods of evaluation and the

significance of financial performance have also been influenced. New and updated ideas and techniques are employed for improved and contemporary financial analysis.

The primary objectives of any banking or financial institution include gathering deposits through various channels and utilizing these deposits in other sectors to generate benefits. To assess the financial performance of any bank, it's essential to analyse the indicators through their financial reports.

Financial statement analysis includes the study of relationship within a set of financial at a point in time and with trends in these relationships over the time. Financial analysis is the process of identifying the financial strengths and weakness of the firm by properly establishing relationship between the items of the balance sheet and profit and loss account (Pradhan, 2004).

Financial performance provides an information on impact of operational risk and market risk of any financial institution. The financial performance is measured with the study of financial statement. The purpose of financial statement analysis is to examine the past and current financial data to evaluate and know the future risk. (Bhattarai, 2021).

2.1.1 Banking: An Introduction

A bank is a financial institution that primarily functions by accepting deposits from the public and extending credit to individuals, businesses, and governments. It acts as a financial intermediary, channeling funds from sectors with surplus capital (such as households or businesses with savings) to sectors facing a deficit (those in need of loans or investments). Through this process, banks play a crucial role in facilitating economic activities by mobilizing savings and allocating credit efficiently.

Banks perform lending either directly to borrowers or indirectly through investment in capital markets. This credit distribution supports consumption, business expansion, infrastructure development, and overall economic growth. Due to their central role in the financial system and the economy at large, banking institutions are typically subject to

strict regulation and supervision by national and international authorities to ensure stability, transparency, and public trust.

According to the Oxford Advanced Learner's Dictionary, a bank is defined as "an organization that provides various financial services." This broad definition reflects the diverse functions modern banks perform, which go beyond just accepting deposits and providing loans—they also offer payment systems, currency exchange, investment management, and digital banking services.

In the legal context of Nepal, Section 2 of the Bank and Financial Institution Act (BAFIA) and the Nepal Rastra Bank (NRB) Act define banks and financial institutions as follows:
A bank is a corporate entity established to carry out banking and financial transactions as specified in Sub-section (1) of Section 49. The term also includes branch offices or other offices of foreign banks operating in Nepal, as well as branches or offices established abroad by banks incorporated in Nepal. This definition extends to infrastructure development banks performing the functions outlined in Sub-section (5) of Section 49.
This definition underlines the formal recognition of various banking structures and their operational scope within Nepal's regulatory framework.

The history of banking in Nepal can be defined as a component of gradually and ongoing evaluation in the financial and economic aspects of Nepalese life. The foundation of "Tejarath Adda" during Prime Minister Ranoddip Singh's tenure in 1933 B.S. was the first step toward institutionalizing banking in Nepal. "Tejarath Adda" offered credit loans to the general public at 5% interest on securities such as gold, silver, and other embellishments. Its goal was to grant credit or loans to the people in general, but it did not accept deposits from them. The practice of modern banking in Nepal was introduced when Nepal Bank Limited, the first commercial bank, was established on the 30th of Kartik, 1994 B.S. The banking sector in Nepal emerged in 1994, with the formation of Nepal Bank Limited B.S. The Nepal Rastra Bank was formed as the central bank on 14 Baisakh, 2013 B.S., according to Nepal Rastra Bank Act of 2012. Its function is to monitor commercial banks and lead the nation's basic monetary policy. The Industrial

Development Centre was formed in 2013 B.S., and it was later renamed Nepal Industrial Development Corporation (NIDC) in 2016. As monetary transactions become more difficult, Rastriya Banijya Bank was founded as a 100% government-owned commercial bank in 2022. Similarly, the Agriculture Development Bank was founded in 2024 B.S. Following the restoration of democracy, the Commercial Bank Act of 2031 was introduced as part of the government's liberal banking policy. This policy allowed various private banks, often in partnership with foreign entities, to be established. This trend has continued, with many banks owned by Nepalese now operating successfully (Pandey, 2008).

2.1.2 Concept of Commercial Banks

Commercial banks are one of the most important types of depository institutions in any financial system. Their primary function is to accept deposits from the public and to extend credit in the form of loans and advances. These banks offer a wide range of financial services to individuals, households, and small to medium-sized enterprises, playing a vital role in everyday financial activities.

A commercial bank provides services such as savings and current accounts, fixed deposits, personal and business loans, overdraft facilities, and certificates of deposit. These institutions generate income primarily by lending out the deposited funds and charging interest on loans issued. The types of loans typically offered by commercial banks include business loans, home loans, auto loans, education loans, and personal loans.

The deposits collected from customers in various types of accounts serve as the source of funds for the bank’s lending operations. In doing so, commercial banks contribute to capital formation, facilitate credit flow, and enhance market liquidity, all of which are essential for economic growth. Traditionally, commercial banks maintain physical branches in urban and semi-urban areas, but with advancements in technology, the number of online banking platforms is rapidly increasing, making services more accessible and efficient.

According to Black's Law Dictionary, a commercial bank is defined as "a financial institution authorized to accept both demand and time deposits, engage in trust services, issue letters of credit, rent safe deposit boxes, and provide other similar financial services." This legal definition highlights the wide scope of services commercial banks are permitted to offer under the law.

In the context of Nepal, as of mid-January 2024, a total of 20 commercial banks are operating under the supervision of Nepal Rastra Bank (NRB), the central bank of the country. These institutions operate according to the regulatory framework defined by the Bank and Financial Institution Act (BAFIA), 2073 B.S. NRB not only grants licenses but also closely monitors the activities of commercial banks to ensure financial stability, transparency, and compliance with national policies.

Commercial banks in Nepal have contributed significantly to the development of the financial sector by mobilizing domestic savings and offering a wide range of financial services across the country. Their expanding reach through digital banking channels, as well as physical branches, has enhanced financial inclusion, even in rural and previously underserved regions.

2.1.3 Financial Statement and Financial Reporting System

Commercial banks disclose their financial status primarily through two key documents, the balance sheet and the income statement. The balance sheet, often referred to as the statement of financial position, provides a snapshot of a bank's assets, liabilities, and equity at a specific point in time. The income statement, commonly known as the profit and loss account, reflects the bank's financial performance over a given period. In addition to these, banks are also required to prepare a cash flow statement, which outlines the inflows and outflows of cash during a particular period.

In the context of Nepal, all commercial banks are obligated to prepare and present their financial statements in compliance with the Uniform Bank Reporting System (UBRS). The Nepal Rastra Bank (NRB), as the central regulatory authority, has developed a standard reporting format that must be followed by all commercial banks. This

standardized format is legally recognized as the statutory form of financial reporting and ensures uniformity and comparability across the banking sector.

Commercial banks are required to prepare and submit their financial reports to NRB on a quarterly basis, specifically in Mid-October, Mid-January, Mid-April, and Mid-July. These reports must follow the guidelines outlined by the Nepal Financial Reporting Standards (NFRS), which are aligned with international accounting principles. The adoption of NFRS enhances transparency, consistency, and accountability in financial reporting.

The quarterly balance sheet presents the financial position of a bank at a particular moment and includes details on total assets, liabilities, and shareholders' equity. In Nepal, all commercial banks must not only submit these statements to the central bank but also publish them publicly—typically in a national daily newspaper—to ensure transparency. Furthermore, at the end of each fiscal year (as of Mid-July), banks are required to prepare and publish a final audited balance sheet, which reflects the bank's official and verified financial status for that year.

This structured and regulated system of financial reporting promotes confidence among stakeholders—including customers, investors, and regulators—and supports sound financial management and oversight in the banking sector.

Profit and loss account of banks is prepared over a period of time. Like balance sheet, commercial banks prepare their profit and loss account quarterly and publish its abridged version in national daily for public notice. It contains the major categories of revenues and expenses, and net profit and loss for bank over a period of time (Paudel, Baral, Gautam, & Rana, 2019).

2.1.4 Evaluation of Financial Performance using CAMEL Framework

The Uniform Financial Institution Rating System (UFIRS), commonly known as CAMELS rating, was initially introduced by the Federal Financial Institution Examination Council on November 13, 1978, and later adopted by the National Credit

Union Administration in October 1987. CAMEL is an internationally recognized rating system used by authorities to assess financial institutions based on five factors. Recently, a sixth component, sensitivity to market risk, has been added to CAMEL, making it CAMELS, to enhance its focus on risk. However, this study focuses solely on the original five factors: capital adequacy, asset quality, management efficiency, earnings, and liquidity.

2.1.5 Component of CAMEL

"CAMEL" stands for Capital Adequacy, Assets Quality, Management Efficiency, Earnings, and Liquidity. Let's break down each component:

2.1.5.1 Capital Adequacy

The first component of the CAMEL is the 'C' which stands for capital adequacy. Capital adequacy measures the banks quality of capital and amount that a bank can access. A ratio of capital to risk weighted assets determine the bank's capital adequacy or inadequacy. Ratio of bank's capital available to risk weighted assets is known as capital adequacy ratio. It is regulated by the central bank of the state. It is used to meet future unexpected losses and liabilities for sustainability of financial performance of the bank as well as to protect public deposit. Under capital adequacy there are two major capitals, they are core capital and supplementary capital.

Core capital is better than supplementary capital for the sustainability as well to increase the commercial bank financial performance without ignoring the existing supplementary capital. (Bhattarai, 2021)

2.1.5.2 Assets Quality

Assets are on the right-hand side of the bank balance sheet. Any loan granted and provided to business or other parties are assets of the bank. The interest that banks earn on these assets is a key source of their income and profit and loan not paid being paid or recovered is the main risk.

2.1.5.3 Management Efficiency

Management efficiency or quality of management is another vital aspect of the CAMEL analysis. This aspect helps to decide the success and failure of a bank. It is mostly a subjective appraisal of the organization's quality and efficiency that is impossible to prescribe with any exact grading standard. The examiners' opinion of the quality of the bank's officers and the efficiency of the management structure determines the management rating.

Management is in charge of mobilizing the bank's assets and establishing a sound risk management and control environment. As a result, the focus of this assessment is on evaluating competency. Is management's involvement and integration in the day-to-day operations of the bank's role in formulating? Putting in place, monitoring, and ensuring that the banks follow all applicable rules, policies, laws, and regulations. The effectiveness of management determines the organization's success or failure. (Abata, 2014).

2.1.5.4 Earning

Earning shows the sustainability and growth of the any organization. Without proper earning there would be no future for any organization. So commercial banks which deals with the money and capital all the time is dependent on its earning to know about its financial performance. A good earning not only helps the banks to sustain but also builds the confidence to its stakeholders like creditors, depositor, shareholders, management, employees, public and others. According to Investopedia "Earnings" typically refers to the profit or net income generated by a company or organization after deducting expenses from its total revenue. In the context of commercial banks, earnings usually encompass interest income from loans, returns on investments, fees and commissions, and other sources of revenue.

2.1.5.5 Liquidity

Liquidity of the bank can be explained how simply and quickly bank can make arrangement to pay bills and meet other short-term business and financial obligations. It is one of the critical factors by which the success or failure of the banks can easily

determine. For a good financial analysis, the liquidity factor must be kept on a priority. Liquidity helps to know the banks capitalization and growth. (Teshome, Debela & Sultan, 2018)

Banks must maintain its liquidity but not to high that they create an opportunity cost in sense that the capitals cannot be used to earn higher return and profit by investing in other areas. So, there must be a proper balance between maintaining excessive liability and having insufficient liability. A liquidity position of a bank plays a vital role in determining the firm's financial performance. It also helps to the bank's liquidity and solvency. (Chalise & Adhikari, 2022)

2.2 Empirical Review

Empirical review is a way of gaining knowledge by means of direct and indirect observation or experience. Empirical evidence can be analysed quantitatively or qualitatively. The study is focused on the rating system used by banks and financial institutes to evaluate the financial performance of the company during the fiscal periods by CAMEL concepts. CAMEL rating is used wisely in banking sectors for evaluation and other purposes such as awarding, at the time of financial instruments issuing (debentures, right shares). The study has reviewed some articles regarding the CAMEL and all the articles reveal the use of CAMEL analysis in financial sector for analysis the risk, management performance and planning for future goals. The summary of the major articles on this subject are presented are as follows:

Ahsan (2016) explores the financial performance of three major Islamic banks in Bangladesh: Islami Bank Bangladesh Limited, Export Import Bank of Bangladesh Limited, and Shahjalal Islami Bank Limited. The study's main objective was to assess the financial strength of these banks using the CAMEL framework, which evaluates five critical areas: capital adequacy, asset quality, management efficiency, earnings ability, and liquidity. By analysing financial data from 2007 to 2014, the research aimed to measure how these banks performed in each of these dimensions. The methodology involved collecting and examining the banks' financial statements over the specified period and applying the CAMEL model to assess their overall health. The study found

that all three banks demonstrated strong financial performance, with favourable results in all five CAMEL components. Specifically, the banks exhibited sound capital adequacy, healthy asset quality, efficient management, strong earnings, and good liquidity, indicating their stability and resilience in the financial market. These findings underscore the effectiveness of the CAMEL framework in providing a comprehensive evaluation of bank performance, particularly for Islamic banks in Bangladesh. The study found key relationships between the CAMEL ratios. Capital adequacy was positively correlated with liquidity, meaning better capitalized banks had stronger liquidity. Conversely, asset quality (non-performing loans) showed a negative relationship with earnings, suggesting that banks with higher NPAs tended to have lower profitability. Additionally, management efficiency was positively linked to earnings, indicating that better management practices lead to higher profits. However, the study did not find a clear relationship between management efficiency and capital adequacy.

Jothr, Hameed and Mohaisen,(2021) aims to explore the application and impact of the CAMELS model on banking performance evaluation. The primary objective of the paper is to examine how the CAMELS framework, which evaluates capital adequacy, asset quality, management quality, earnings, liquidity, and sensitivity to market risks, enhances the effectiveness of performance assessments for banks. The study highlights the importance of this model in improving the safety and stability of financial institutions, particularly in developing economies. The methodology employed in the study is a comprehensive literature review, synthesizing findings from various studies conducted since 2010. It focuses on the use of the CAMELS model in banking sectors, particularly in Arab countries and Iraq, to assess the framework's practical application and its contributions to improving banking operations. The authors review several articles and case studies to understand the strengths and weaknesses of the model. The findings suggest that the CAMELS model is an effective tool for evaluating the financial health of banks, providing a detailed and transparent analysis of their performance. The model's focused approach—focusing on key financial areas—allows for better decision-making and regulatory oversight. The study also suggests that while the CAMELS model remains a valuable tool, it requires continuous updates to adapt to the evolving dynamics of modern banking, including the integration of new ratios and risk factors. This would

ensure its relevance in today's complex financial environment. In the study, several key correlations between the CAMELS ratios were discussed. Capital adequacy is positively correlated with asset quality; banks with higher capital are generally better able to manage non-performing loans. Asset quality also has a negative relationship with earnings—higher non-performing loans tend to reduce profitability. Additionally, there is a positive correlation between capital adequacy and liquidity, as well-capitalized banks typically have better liquidity. Management efficiency is positively linked to both earnings and liquidity, suggesting that efficient management practices improve profitability and liquidity. These relationships demonstrate the interconnectedness of the CAMELS components in evaluating banking performance.

Magoma, Mbwambo, Sallwa, & Mwasha (2022). investigates the financial performance of seven commercial banks listed on the Dar es Salaam Stock Exchange (DSE) using the CAMEL model. The study covers data from 2016 to 2020, with an emphasis on assessing the banks' performance in terms of capital adequacy, asset quality, management efficiency, earning quality, and liquidity. The methodology employed an explanatory research design to establish the cause-and-effect relationships between the performance of these banks and the CAMEL ratios. The authors used secondary data from audited financial statements and annual reports. Statistical tools like correlation and linear regression analysis were applied to explore these relationships. The study's findings reveal that the financial performance of the listed banks is primarily influenced by management efficiency and capital adequacy. Banks with strong management and adequate capital tend to perform better financially. Additionally, the study highlights that the CAMEL model can serve as a useful benchmark for improving the performance of commercial banks. In terms of the relationship between the CAMEL ratios, the study suggests that management efficiency and capital adequacy are critical determinants of financial performance, with liquidity and asset quality playing a lesser role in comparison.

Kulshrestha and Srivastava (2022) aims to analyse and compare the financial performance of both private and public sector banks in India using the CAMEL framework. The main objectives include evaluating capital adequacy, asset quality, management soundness, earnings, and liquidity over a period from 2011 to 2018. The

methodology involves a ranking system based on the averages of various ratios and applying a one-way ANOVA test to assess any significant differences in performance between the two sectors. The findings reveal that private sector banks have better performance compared to public sector banks, largely due to modern technological advancements, banking reforms, and improved recovery mechanisms. The study demonstrates a positive relationship between the ratios of CAMEL, where factors like capital adequacy and asset quality are positively correlated with performance, emphasizing the financial strength and operational efficiency of the banks. Public sector banks were found to lag in comparison, which highlights the importance of modernizing and strengthening management practices within these institutions.

Rahman and Nitu (2018) compared the financial performance of state-owned and private commercial banks in Bangladesh using the CAMEL rating framework. The study aimed to evaluate and compare key financial metrics of both types of banks, focusing on aspects such as capital adequacy, asset quality, management efficiency, earnings, and liquidity. The methodology involved analysing data from 6 state-owned and 6 private commercial banks, using financial data from 2010 to 2014. Key ratios such as the Capital Adequacy Ratio (CAR) and Earnings Per Share (EPS) were calculated from the banks' audited financial statements to assess the banks' performance in these categories. The study found that private banks performed better than state-owned banks in terms of profitability, liquidity, and asset quality. Private banks were able to manage their resources more efficiently, showing better results in terms of financial health. The study found that capital adequacy played a critical role in ensuring financial stability, while asset quality had a direct impact on earnings, as poor loan quality led to higher provisions for bad loans, affecting profitability. Management efficiency was found to be linked with profitability, as banks with effective management systems exhibited better financial outcomes. Earnings were found to be indicative of a bank’s ability to grow and maintain capital, which, in turn, affected its liquidity. Liquidity was crucial for maintaining a bank’s operational stability, further influencing profitability. The study concluded that private commercial banks in Bangladesh are better positioned in terms of financial performance compared to state-owned banks, largely due to more efficient management and operational practices.

Akinbo (2022) investigates the impact of credit risk management on the financial performance of Nigerian commercial banks, using the CAMEL framework. The research aims to assess how various CAMEL ratios—such as Capital Adequacy, Asset Quality, Management Quality, Earnings, and Liquidity—relate to bank performance. The objectives include understanding the importance of credit risk management and its relationship with financial performance, evaluating specific ratios and their impact, and using these ratios to predict bank performance. The study employs a quantitative approach, analysing data from selected Nigerian banks using statistical tools like SPSS. Descriptive statistics, correlation, and regression analysis are conducted to test the hypotheses. Findings suggest that credit risk management, particularly through measures like the Capital Adequacy Ratio (CAR) and Non-Performing Loan (NPL) ratio, has a significant influence on bank performance. Ratios such as the Loan Loss Provision Ratio (LLPR) and NPL Ratio negatively impact profitability, while the Capital Adequacy Ratio (CAR) and Return on Assets (ROA) positively correlate with improved performance. This analysis underscores the critical role of credit risk management in enhancing the financial stability and performance of commercial banks. The study emphasizes the interconnectedness of CAMEL ratios, where capital adequacy, asset quality, and earnings all directly influence a bank's ability to manage risk effectively and achieve financial success.

Mayakkannan (2024), evaluates the financial performance of commercial banks by applying the CAMEL framework. The study's objectives were to examine the financial health and operational efficiency of selected banks based on the five parameters of CAMEL. The methodology used in this study includes secondary data analysis from various sources, including bank reports and financial statements. The study primarily focuses on descriptive statistics and ratio analysis using the CAMEL model. It includes a detailed assessment of each bank's performance in terms of these key financial ratios. The findings reveal that while all banks demonstrate reasonable capital adequacy ratios, differences are observed in other components like asset quality, management practices, and liquidity management. The study identifies some banks performing better across these metrics, notably showing that management quality and earnings ratios are more critical for a few banks compared to others. In terms of the relationship between the

CAMEL ratios, the study finds that banks with higher capital adequacy generally show better asset quality and liquidity. Additionally, there is a clear correlation between asset quality and management efficiency, which influences overall earnings and financial stability. These insights are important for stakeholders and regulators when assessing and comparing the financial performance of commercial banks.

Gautam (2020) aims to examine the financial health of Nepalese financial institutions, including finance companies, development banks, and commercial banks, using the CAMEL framework. It employs a descriptive and causal research design based on secondary data from Nepal Rastra Bank's publications for the years 2014/15 to 2018/19. The methodology includes descriptive and pooled regression analysis to assess the relationship between key CAMEL variables: capital adequacy, asset quality, management efficiency, earnings, and liquidity. The findings reveal that financial institutions generally meet the capital adequacy standards set by Nepal Rastra Bank. Finance companies perform better in capital adequacy and earnings, development banks lead in asset quality, and commercial banks excel in management efficiency. Finance companies also hold the highest liquidity levels. Regression analysis indicates that Return on Assets (ROA) positively correlates with capital adequacy and Return on Equity (ROE) but negatively with asset quality. Conversely, ROE positively correlates with asset quality and ROA but negatively with capital adequacy. This highlights the significant role of capital adequacy and asset quality in maximizing ROA and ROE in financial institutions.

Sah & Pokharel (2023) examines the financial performance of commercial banks in Nepal using the CAMEL framework. The objectives of the research include evaluating the efficiency of banks through capital adequacy, asset quality, management efficiency, earnings quality, and liquidity, as well as exploring the relationships between these factors. The study adopts a descriptive and quantitative approach, utilizing secondary data from annual reports of selected banks. Various statistical tools, including correlation and regression analyses, were applied to assess the impact of CAMEL components on bank performance. The research highlights that capital adequacy and asset quality significantly influence profitability, while management efficiency and liquidity status have minimal impact. Earnings quality, however, is strongly correlated with profitability, indicating its

pivotal role in financial performance. The findings suggest that earnings quality is a key driver of financial success, and improving asset quality while maintaining adequate capital levels can enhance overall performance. Management efficiency and liquidity, while important, are less critical compared to other parameters. The study identifies mixed relationships among CAMEL components. For example, while earnings quality positively affects profitability, poor asset quality and inadequate capital levels negatively impact performance. The interplay among these components underscores the need for a balanced approach to financial management.

Shrestha & Gnawali (2022), aimed to evaluate the financial performance of Nepalese commercial banks using the CAMEL model. The focus was on understanding how capital adequacy, asset quality, management efficiency, earnings ability, and liquidity status influence profitability, measured by Return on Assets (ROA). The research adopted a quantitative approach, utilizing secondary data from annual reports of selected banks over a 10-year period (2011/12–2020/21). A lottery sampling method was employed to choose representative banks. Statistical techniques, including correlation and regression analysis, were applied to determine the relationships and impacts of CAMEL components on ROA. The study found mixed correlations between CAMEL variables and profitability. Capital adequacy and asset quality had significant negative effects on ROA. Earnings ability showed a significant positive relationship with ROA. Management efficiency and liquidity status had insignificant negative impacts on profitability. The findings indicate that earnings quality significantly drives profitability, while management efficiency and liquidity have limited influence. The research underscores the critical role of internal factors, particularly earnings ability, in shaping the financial health of banks. It suggests that banks should improve asset quality by minimizing non-performing loans and enhance capital structures with robust policies to boost overall performance. The study highlighted that while some CAMEL variables like earnings ability positively impact profitability, others such as capital adequacy and asset quality show negative relationships. This indicates an intricate interplay where not all CAMEL parameters uniformly support financial performance, suggesting the need for tailored strategies in managing each component.

Sapkota & Trivedi (2023), aims to evaluate the performance of selected commercial banks in Nepal using the CAMEL framework. Specifically, it focuses on the banks' capital adequacy, asset quality, management efficiency, earnings, and liquidity, ranking them on each parameter to provide an overall performance assessment. The researchers analysed financial data from five commercial banks (Nepal Bank Limited, Rastriya Banijya Bank, Agriculture Development Bank, Nepal Investment Bank, and Nabil Bank) over the fiscal years 2010/11 to 2014/15. Various financial ratios under the CAMEL parameters were calculated and ranked, with rankings averaged to determine overall performance scores. Nabil Bank demonstrated superior performance, meeting regulatory benchmarks effectively. Rastriya Banijya Bank showed weaknesses with higher non-performing loans (NPLs). Nabil Bank outperformed its peers with better utilization of resources. Consistently high profitability was observed in Nabil Bank and Nepal Investment Bank. Most banks maintained adequate liquidity, although variations were noted. Overall, Nabil Bank ranked highest, while Rastriya Banijya Bank faced challenges due to weaker asset quality. The study reveals that the CAMEL framework is effective for assessing bank performance in Nepal. It highlights significant disparities among banks in asset quality and management efficiency. The findings underline the importance of addressing NPL issues and enhancing operational efficiency in public sector banks. The analysis indicates strong correlations among CAMEL parameters. For instance, better capital adequacy is linked to improved earnings quality and liquidity, while poor asset quality adversely impacts overall rankings. Efficient management plays a central role in maintaining profitability and controlling NPLs.

Kandel (2019), wrote a journal where he aims to assess the financial health and performance of selected commercial banks in Nepal through key CAMEL indicators: Capital adequacy, Asset quality, Management efficiency, Earnings, and Liquidity. It also seeks to identify critical indicators influencing profitability and recommend measures to enhance banking performance. The study adopts a quantitative research design, relying on secondary data from published financial reports and regulatory documents of the banks. Ratios associated with CAMEL parameters, such as the Capital Adequacy Ratio (CAR), Non-Performing Loan Ratio (NPLR), and Return on Assets (ROA), are computed to evaluate bank performance. The analysis reveals varied performance levels among

Nepalese banks. Public sector banks showed lower efficiency compared to private and joint-venture banks. The CAR significantly affects profitability, indicating better capitalization's role in financial stability. Asset quality and management efficiency are critical for bank performance, but there are notable variations in earnings and liquidity levels across banks. The research underscores the effectiveness of the CAMEL model in identifying strengths and weaknesses in bank performance. While Nepalese banks generally maintain satisfactory financial health, some lag in specific areas like asset quality and liquidity. The study highlights the need for better risk management practices and operational efficiency to enhance profitability. The study establishes a strong relationship between CAMEL components. For instance, high CAR is positively correlated with ROE, and better asset quality improves ROA. However, management efficiency and liquidity also play critical roles in determining overall financial performance, demonstrating the interconnected nature of these ratios.

Sackitey (2016) conducted a research article focusing on the key financial performance indicators in the Banking Industry in Ghana, with the objective of identifying these indicators for assessing the financial performance of Eco bank Ghana Limited. The banking sector is a vital source of financing for businesses in Ghana, and the financial systems largely revolve around it. The study aimed to explore the significant financial performance indicators within this industry. Secondary data from published annual reports of Eco bank Ghana Limited from 2005-2015 were utilized. The study identified key financial performance indicators for assessing the bank's performance, including profitability measured by Return on Assets (ROA), Return on Equity (ROE), and Cost to Income Ratio (CIR). Liquidity performance was assessed through Liquid assets to deposit-borrowing ratio (LADST), Net Loans to total asset ratio (NLTA), and Net loans to deposit and borrowing (NLDST). Asset Credit Quality (Credit Performance) was measured using Loan loss reserve to gross loans (LRGL). The study emphasizes the importance of aligning these Key Performance Indicators with the specific goals and objectives of the bank, highlighting the role of management in ensuring effective performance evaluation.

Lakshmanan and Nataraja (2018) conducted a study on the financial performance of private commercial banks in India, highlighting the significant role of banks in the country's economic growth, particularly private banks. The research focused on the performance of three major private sector banks listed on both the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE). Financial ratios were employed for statistical analysis of the banks' performance. Three key indicators were used: Return on Assets (ROA) to measure internal-based performance, Tobin's Q model (price/book ratio) to gauge market-based performance, and Return on Equity (ROE) as a crucial profitability ratio for investors. Data from 2006 to 2017 was analysed. The study utilized multiple regression analysis to assess the financial performance measured by these three indicators, considering independent variables such as bank size, credit risk, asset management, operational efficiency, and debt ratio. The results indicated that all the selected ratios had an impact on the financial performance of private commercial banks.

Dongol (2021) conducted research on financial innovation and its impact on financial performance, emphasizing that banks need to perform well for their growth and sustainability. Financial innovation involves banks making extra efforts to keep the banking system safe for transactions between depositors and borrowers. The study aimed to identify financial innovation and its impact on the financial performance of commercial banks in Nepal. It surveyed 115 staff from different branches of commercial banks, selecting 74 respondents (64.34%) using purposive sampling. Out of the 27 commercial banks in Nepal, the study focused on 10 banks due to mergers and acquisitions. The research used a descriptive survey design with a questionnaire to collect primary data. It found that internet banking services have a significant impact on customer satisfaction and can also improve the financial performance of banks.

2.3 Research Gap

Numerous studies have been conducted on financial performance analysis and comparisons of commercial banks and financial institutions in the past. However, only a few of these studies have used the CAMEL or CAMELS model for analysis of governmental banks. Most studies tend to focus on bank performance, particularly on profitability and total factor productivity measures. Previous research has mainly

emphasized liquidity, profitability, and leverage of commercial banks, often relying on statistical tools.

In this study, the overall financial performance and various indicators effecting earnings of the three-state owned Nepalese commercial banks RBBL, ADBL and NBL are evaluated using the CAMEL model from the fiscal year 2013/14 to 2022/23. While this study may have missed some ratios and complex models, it has covered most of the important ratios necessary for proper financial performance evaluation. Though, this study doesn't cover all the commercial banks but could potentially reflect the financial position of the entire sector. A secondary object of this study is also to examine whether state owned banks are in the position specified by the regulatory body or not.

CHAPTER III
RESEARCH METHODOLOGY

Research methodology is the systematic and theoretical approach to conduct research, which includes the processes and techniques used to gather and analyse data to answer a research question. It helps ensure the reliability and validity of research findings and include steps such as defining the research problem, reviewing literature, selecting a sample, collecting data, and analysing and reporting results. The research methodology, which is used to analyse to collected data, are mentioned in this chapter.

3.1 Research Design

Research design is a plan or a blueprint for conducting a study that outlines the methods and techniques to be used for collecting and analysing data. It is a systematic approach to solve a research problem which outlines the steps and procedures that will be followed to achieve the research objectives. The research design serves as a roadmap for conducting the research and provides a framework for making decisions about data collection, data analysis, and the interpretation of results.

This analysis focused on using the CAMEL model to assess the performance of commercial banks in Nepal over the period of 2013/14 to 2022/23 with reference to previously referred banks. The research approach adopted was descriptive, which aims to describe and illustrate the characteristics of the variables being studied. The descriptive design involves the examination of data and information to determine facts. To evaluate the financial institutions' performance, various financial and statistical tools are applied.

3.2 Population and Sample of Data

The study population consists of the total number of Commercial Banks in Nepal. Convenience sampling was employed for the analysis. As per the NRB, there are 20 commercial banks operating in Nepal with branches in various regions. From the population, all 3 state owned banks were chosen as the sample, comprising 13.64% of the total currently operating commercial banks in Nepal.

3.3 Sources of Data

The data was collected from a secondary source. The required financial statement for this study such as balance sheet, profit & loss account, etc. were collected from the published annual reports and accounts of the selected companies from FY 2013/14 to 2022/23. The data collected, arranged and managed in such a way that it can be further used for analysing data. The data were presented in percentage or ratio form and analysed using various ratio analyses. Collectively, NRB directives, available library research, articles, previous study, Internet surf, websites of and data from regulatory and financial reports of Banks are the main sources of data.

3.4 Data Collection and Processing Procedure

Data collection & processing deals with the presentation and analysis of data collected from different sources with the focus on the camel components. As stated, the financial performance analysis of ADBL, RBBL & NBL are concentrated in the components of camel i.e. Capital Adequacy, Assets Quality, Management Quality, Earning Quality and Liquidity. The data collected from annual reports of respective banks have been analysed with the application of camel using various tools and techniques.

3.5 Data Analysis Tools and Techniques

Tools and techniques used to analyse financial institutions refer to the methods which are used to evaluate the performance and stability of financial institutions such as banks, insurance companies, investment firms, etc. Various financial and statistical tools are used in order to analyse the performance. The financial data that are used in this study are taken from the published annual report of respective banks, which have high reliability where as various statistical tools are used to calculate the data.

3.5.1.1 Financial Tools

Financial analysis tools are employed to evaluate the performance of banking and financial institutions (BFIs) in accordance with the CAMEL framework components. In order to analyse the relevant components of CAMEL, following key ratios are utilized:

i. Capital adequacy ratio (CAR)
ii. Core capital ratio (CCR)

iii. Non-performing loan ratio (NPLR)
iv. Loan loss coverage ratio (LLCR)
v. Loan loss provision ratio (LLPR)
vi. Management efficiency ratio (MER)
vii. Earnings Per Share (EPS)
viii. Return on Equity (ROE)
ix. Return on Asset (ROA)
x. Cash reserve ratio (CRR)
xi. Cash and bank balance ratio (CBBR)
xii. Investment in government securities ratio (IGSR)
xiii. Credit to Deposit Ratio (CDR)

i) Capital adequacy

Capital adequacy ultimately determines how well FIs can manage with shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks like foreign exchange, credit, and interest rate risks by assigning risk weightings to the institution's assets. For the purpose of capital adequacy measurement, bank capital is divided into Tier I and Tier II. Tier I capital is primary capital and Tier II capital is supplementary capital. Examiners assess institutions' capital adequacy through capital trend analysis. Examiners also check if institutions comply with regulations pertaining to risk-based net worth requirement. To get a high capital adequacy rating, institutions must also comply with interest and dividend rules and practices. Other factors involved in rating and assessing an institution's capital adequacy are its growth plans, economic environment, ability to control risk, and loan and investment concentrations. The reason why minimum capital adequacy ratios are critical is to make sure that banks have enough cushion to absorb a reasonable number of losses before they become insolvent and consequently lose depositors' funds. Capital adequacy ratios ensure the efficiency and stability of a nation's financial system by lowering the risk of banks becoming insolvent. If a bank is declared insolvent, this shakes the confidence in the financial system and unsettles the entire financial market system. During the process of winding-up, funds belonging to depositors are given a higher priority than the bank's capital, so depositors can only lose their savings if a bank registers a loss exceeding the

amount of capital it possesses. Thus, higher bank's capital adequacy ratio indicates higher degree of protection for depositor's savings. Tier one capital is the capital that is permanently and easily available to cushion losses suffered by a bank without it being required to stop operating. A good example of a bank's tier one capital is its ordinary share capital. Tier two capital is the one that cushions losses in case the bank is winding up, so it provides a lesser degree of protection to depositors and creditors. It is used to absorb losses if a bank loses all its tier one capital. When measuring credit exposures, adjustments has made to the value of assets listed on a lender's balance sheet. All the loans the bank has issued has weighted based on their degree of risk. For example, loans issued to the government have risk weighted at 0 percent, while those given to individuals are assigned a weighted score of 100 percent.

Commercial bank holds adequate capital depending on their requirement. Capital adequacy ratio is measure of the amount of a bank's capital as a percentage of its risk weighted credit exposure.

Capital Adequacy Ratio (CAR) = $\frac{Total\ Capital\ Fund}{\text{Total risk weighted assets}} \times 100\%$

Core Capital Ratio (CCR)= $\frac{\text{Total Core Capital}}{\text{Total Risk Weighted Assets}} \times 100\%$

Where,

Total capital fund =core capital + supplementary capital

Total risk weighted asset= on balance sheet risk weighted items + off balance sheet risk weighted items.

ii) Asset Quality

Credit risk is one of the factors that affect the health of an individual FI. The extent 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 (Baral, 2005). Asset quality covers an institutional loan's quality which reflects the earnings of the institution. Assessing asset quality involves rating investment risk factors that the company may face and comparing them to the company's capital earnings. This shows the stability of the company when faced with particular risks. Examiners also check how companies are affected by fair market value of investments when mirrored with the

company's book value of investments. Lastly, asset quality is reflected by the efficiency of an institution's investment policies and practices.

Commercial banks collect funds in the form of capital, deposits etc. it mobilizes these funds to generate certain return by giving loans to the users of money to invest in various alternatives. A significant part of the banks income is through its lending activities. The NRB has categories loan and advances in different qualities as per the recovery, repayment and dues durations.

$$\text{Non-Performing Loan Ratio (NPLR)} = \frac{\text{Total Non-Performing Loan}}{\text{Total Loans \& Advances}} \times 100\%$$

Where,

Total non-performing loan (NPL) = Substandard loan + Doubtful loan + Bad loan

Total Loan and Advances = Total performing loan + Total Non-performing loan

$$\text{Loan loss coverage Ratio (LLCR)} = \frac{\text{Total Loan Loss Provision}}{\text{Total Non-performing Loan}} \times 100\%$$

Where,

Total loan loss provision (LLP) = Provision on (Pass loan + Reconstruction loan + Substandard loan + Doubtful loan + Bad loan)

Total Non-performing loan = Substandard loan + Doubtful loan + Bad loan

$$\text{Loan loss coverage Ratio (LLPR)} = \frac{\text{Total Loan Loss Provision}}{\text{Total Loan \& Advances}} \times 100\%$$

Where,

Total loan losses provision (LLP) = provision on (Pass loan + Reconstruction loan + Sub-standard loan + Doubtful loan + Bad loan)

Total loans and Advances = Total Performing loan + Total Non-performing loan

iii) Management efficiency

Management quality reflects the management soundness of a bank. The management acts as a safeguard to operate the bank in a smooth and decent manner and is called excellence management or skilful management, whenever it controls its cost and increases productivity, ultimately achieving higher profits. Here, this parameter is measured by total cost to total income ratio (Ahsan, 2016). Management assessment determines

whether an institution is able to properly react to financial stress. This component rating is reflected by the management's capability to point out, measure, look after, and control risks of the institution's daily activities. It covers the management's ability to ensure the safe operation of the institution as the study complies with the necessary and applicable internal and external regulations. For the achievement of the goals of the bank certain period of the time proper and efficient management is required, for which the bank should have the following qualities: Adequate management expenses, tools for fair decision-making, Improvement of working structure for profitability. Management analysis can be done by using following formula:

Management Efficiency Ratio (MER) = $\frac{\text{Net Profit after tax}}{\text{Total Number of Staff}} \times 100\%$

iv) Earnings

Earning is an important parameter to measure the financial performance of an organization. Earning quality mainly measures the profitability and productivity of the bank, explains the growth and sustainability of future earnings capacity. In the same way, bank depends on its earning to perform the activities like funding dividends, maintaining adequate capital levels, providing for opportunities for investment for bank to grow, strategies for engaging in new activities and maintaining the competitive outlook. Here two ratios are used to determining the profitability of banks i.e., return on asset and return on equity (Ahsan, 2016). An institution's ability to create appropriate returns for expand, retains competitiveness, and capital is a key factor in rating its continued viability. Examiners determine this by assessing the company's growth, stability, valuation allowances, net interest margin, net worth level and the quality of the company's existing assets. The rating of banks on the earning parameter is significant because sustained high level of profitability enables a bank to boost its capital and improve its economic performance. There is negative relationship between profitability and probability of failure. The earnings (E) measure in the model also provides a ratio representative of management’s level of effectiveness in utilization of assets to earn profits. Earning is the ultimate result of any business. Generally, higher earnings reflect better financial position. Similarly, the aggregate performance of the bank reflects from its earning.

Earnings per Share (EPS) = $\frac{\text{Net Profit after tax}}{\text{No. of outstanding share}}$

$$\text{Return on Equity (ROE)} = \frac{\text{Net Profit after tax}}{\text{Total Shareholder's Equity}}$$

$$\text{Return on Assets (ROA)} = \frac{\text{Net Profit after tax}}{\text{Total Assets}}$$

v) Liquidity

Liquidity is the BFIs' diversified liquid assets which shows their financial strength and financial position. High liquidity shows safe but low investment and credit lending also may cause low profitability. The credit to deposit ratio (CDR) is a major tool to examine the liquidity of a bank and measures the ratio of fund that a bank has utilized in credit out of the deposit total collected. Higher the CDR more the effectiveness of the bank to utilize the fund it collected. As per the directives of Nepal Rastra Bank, BFIs are obliged to maintain its CDR 80. All BFIs are responsible for managing various liquidity ratios as per criteria and compulsory for reporting every quarter of each fiscal year. Thus, liquidity of BFIs is vital portion for maintaining the quality service and company sustainability. We have used following ratios to measure the liquidity status:

Cash reserve ratio (CRR) is the minimum amount of reserve, a bank must hold in the form account balance with NRB. This ratio ensures minimum level of the banks first line of defense in meeting depositor's obligation. It is the mandatory reserve that the commercial banks has to keep cash in their accounts at NRB for depositor's assurance and safety of the banks, which also reflects the banks goodwill. It is calculated as:

$$\text{Cash Reserve Ratio (CRR)} = \frac{\text{Cash Balance in NRB}}{\text{Total Deposit}} \times 100\%$$

Cash & Bank Balance Ratio (CBBR) is the ratio that measures the bank ability to meet immediate obligation. So, optimum balance should maintain in order to meet their pay obligation. Further, this ratio is employed to measure whether banks cash balance is sufficient to cover unexpected demand made by the depositors. It is calculated as follows:

$$\text{Cash \& Bank Balance Ratio (CBBR)} = \frac{\text{Cash \& Bank Balance}}{\text{Total Deposit}} \times 100\%$$

Investment in government security ratio (IGSR) shows the investment in government securites to total investment. Government securities are known as risk free assets, which are easily converted into cash to meet the short-term obligation. That is why every commercial bank has to invest their certain amount in government securities. This ratio calculated as:

$$\text{Investment in government securities (IGSR)} = \frac{\text{Total Investment in Govt. Securities}}{\text{Total Investment}} \times 100\%$$

Credit to Deposit Ratio (CDR) is a financial metric used to measure the proportion of loans (or credit) given out by financial institutions in relation to the deposits they have. It's often used to assess the liquidity and stability of banks or financial institutions.

$$\text{Credit to Deposit Ratio (CDR)} = \frac{\text{Total Loan \& Advances}}{\text{Total Deposit}} \times 100\%$$

3.5.1.2 Statistical tools

Statistical methods involved in carrying out a study include planning, designing, collecting data, analysing, drawing meaningful interpretation and reporting of the research findings. Some important statistical tools have been used to achieve the objective of this study. In this study statistical tools such as mean, Standard Deviation, Coefficient of variation, and trend analysis will be used.

i) Mean

Mean is a measure of central tendency that represents the average value of a dataset. It is calculated by adding up all the values in the dataset and dividing the sum by the total number of values. The mean is sensitive to extreme values or outliers in the dataset. Mean is given by the following formula:

Mean ($\bar{x}$) = $\sum X/N$

Where,

$\sum X$ = Sum of all variables of the observations

N = No. of observations

X = Value of observations.

The studies calculate the average value of all the independent variables, which is calculated through the financials formulas and data, collected from the secondary sources.

Thus, calculation of mean is based on the calculation of financial formula of all independent variable over the seven years.

ii) Standard Deviation (S.D)

Standard deviation is a statistical measure of how spread out a set of data is from its mean value. In simpler terms, the standard deviation tells us how much the values in a data set differ from the average value, or mean. If the standard deviation is low, it means that the data points are clustered closely around the mean, while a high standard deviation indicates that the data points are more widely spread out. It is commonly denoted by the symbol "σ".

$\sigma = \sqrt{(\Sigma(x - \bar{x})^2 / (n - 1))}$

Where:

Σ represents the sum of all values in the data set

x is the value of each data point

$\bar{x}$ is the mean value of the data set

n is the total number of data points in the sample

The standard deviation of all independent variables is calculated by conducting studies that utilize financial formulas and data gathered from secondary sources. The calculation of standard deviation is dependent on the computation of financial formulas for each independent variable over a period of seven years.

iii) Coefficient of Variation (C.V)

The coefficient of variation (C.V) is a statistical measure that expresses the degree of variation in a set of data relative to the mean. It is typically expressed as a percentage and is calculated by dividing the standard deviation by the mean, and then multiplying the result by 100. The coefficient of variation is used to compare the variability of data sets with different units of measurement, and is particularly useful for comparing the variability of data sets that have different means or ranges. A lower coefficient of variation indicates that the data is more consistent and less variable, while a higher coefficient of variation indicates greater variability in the data.

The formula for the coefficient of variation (C.V) is:

$C.V. = (\sigma / \bar{x}) \times 100\%$

Where:

σ is the standard deviation of the data set

$\bar{x}$ is the mean value of the data set

iv) Correlation Co-efficient

Correlation Co-efficient are used to measure how strong a relationship is between two variables. It describes the direction of the correlation along with magnitude. The value of correlation co-efficient always lies between ± 1.

It measures the correlation coefficient between two variable taken X and Y and denotes as 'r'. It is expressed mathematically as below:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2]\,[n\sum y^2 - (\sum y)^2]}}$$

n = Number of fiscal years in series X and Y

∑ X = Sum of observation in series X

∑ Y = Sum of observation in series Y

∑ X2 = Sum of squared observation in series X

∑ Y2 = Sum of squared observation n series Y

∑ XY = Sum of the product of observations in series X and Y Value of r lies between -1 and +1

r = 0 means that the variables are not correlated

r = -1 implies that there is a perfect negative correlation between the variables r = +1 implies that there is a perfect positive correlation between the variables.

v) Multiple Regression Analysis

For examine of financial performance of commercial banks using CAMEL model this study uses the linear regression model. According to the conceptual framework, the function of the dependent variables, or bank performance, looks like this:

Bank performance = ∫ (CAR, AQ, ME, EARN, LR)

To be more precise, the given model has been segmented into following models: Model 1

ROA = a+β1CA+ β2AQ + β3ME + β4EARN + β5LR +e

Model 2

$ROE = a+\beta 1CA+ \beta 2AQ + \beta 3ME + \beta 4EARN + \beta 5LR + e$

Where,

ROA= Return on Asset of banks in their respective FY year

ROE= Return on Equity of banks in their respective FY year

CA= Capital adequacy refers to Capital Adequacy Ratio and Core Capital Ratio.

AQ = Assets quality is defined as Loan Loss Provision Ratio, Loan Loss Coverage Ratio and Non-Performing Loan Ratio.

ME = Management efficiency refers to net-income to total number of employee, in million Rupees per employee

EARN = Earnings is defined as earnings per share, in percentage.

LR = Liquidity ratio refers to Cash and Bank Balance Ratio, Credit to Deposit Ratio, Investment in Government Securities Ratio & Cash Reserve Ratio.

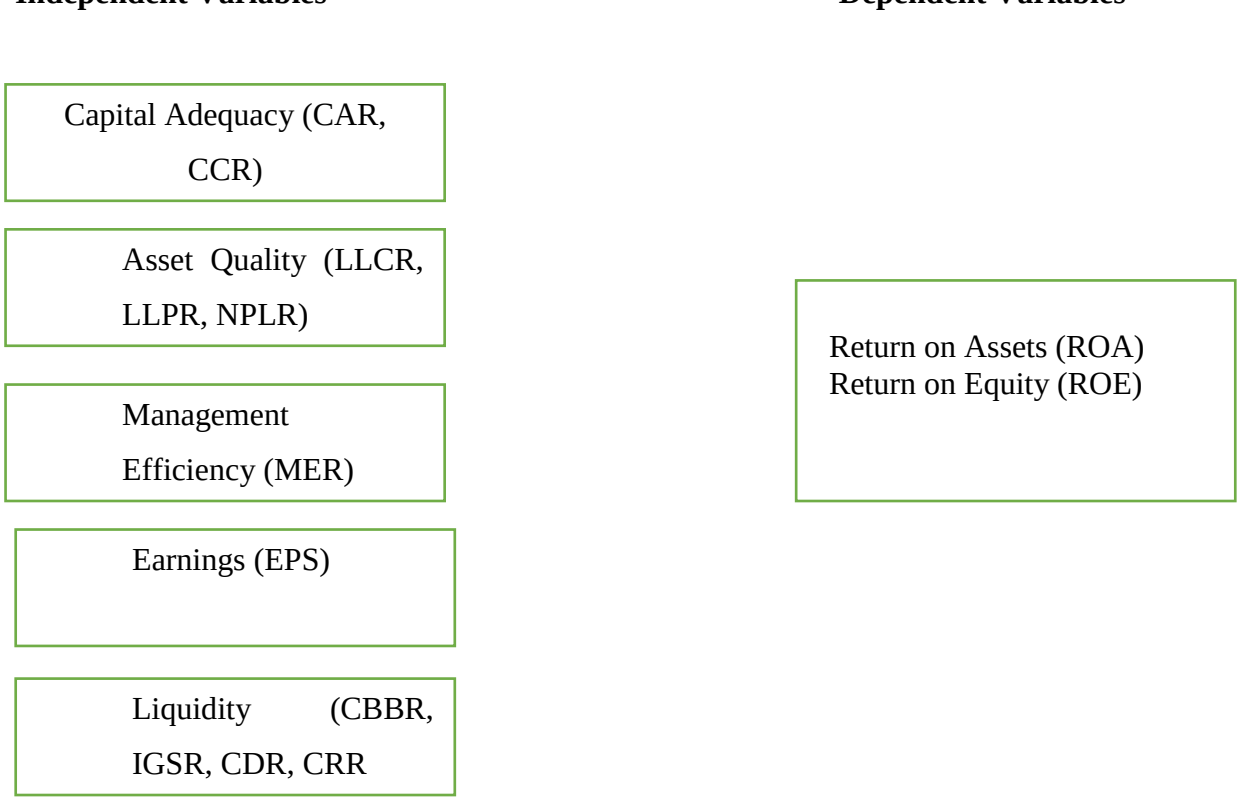
e = Error term

a is the constant term and $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$ and $\beta 5$ are the beta coefficients of variables.

3.6 Research Framework and Definition of the Variables

A research framework provides a structured representation of the research variables, helping to identify the key areas of study. This framework enables researchers to formulate relevant research questions and objectives that align with their research goals. In the context of the CAMEL analysis, which is used to evaluate financial institutions, the framework allows for a clear definition of both dependent and independent variables.

In this study, the independent variables are various ratios of Capital Adequacy, Assets Quality, Management Efficiency, Earnings, Liquidity and dependent variable are Return on Equity and Return on Assets. The main objective of this framework to investigate the relation between these dependent and independent variables. The conceptual frameworks that describe the dependent and independent variables used in the study are shown below:



(Source: Rauf, & Lebbe, 2016)

Figure 1 *Research Framework of the Study*

Definition of the Variables

Capital adequacy

Capital adequacy ultimately determines how well FIs can manage with shocks to their balance sheets. Thus, it tracks capital adequacy ratios that take into account the most important financial risks like foreign exchange, credit, and interest rate risks by assigning risk weightings to the institution's assets. For the purpose of capital adequacy measurement, bank capital is divided into Tier I and Tier II. Tier I capital is primary capital and Tier II capital is supplementary capital. Examiners assess institutions' capital adequacy through capital trend analysis. Examiners also check if institutions comply with regulations pertaining to risk-based net worth requirement. To get a high capital adequacy rating, institutions must also comply with interest and dividend rules and practices. Other factors involved in rating and assessing an institution's capital adequacy are its growth plans, economic environment, ability to control risk, and loan and investment concentrations. The reason why minimum capital adequacy ratios are critical is to make sure that banks have enough cushion to absorb a reasonable number of losses before they become insolvent and consequently lose depositors' funds. Capital adequacy ratios ensure the efficiency and stability of a nation's financial system by lowering the risk of banks becoming insolvent. If a bank is declared insolvent, this shakes the confidence in the financial system and unsettles the entire financial market system. During the process of winding-up, funds belonging to depositors are given a higher priority than the bank's capital, so depositors can only lose their savings if a bank registers a loss exceeding the amount of capital it possesses. Thus, higher bank's capital adequacy ratio indicates higher degree of protection for depositor's savings. Tier one capital is the capital that is permanently and easily available to cushion losses suffered by a bank without it being required to stop operating.

Asset Quality

Credit risk is one of the factors that affect the health of an individual FI. The extent 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 (Baral, 2005). Asset quality covers an institutional loan's quality which reflects the earnings of

the institution. Assessing asset quality involves rating investment risk factors that the company may face and comparing them to the company's capital earnings. This shows the stability of the company when faced with particular risks. Examiners also check how companies are affected by fair market value of investments when mirrored with the company's book value of investments. Lastly, asset quality is reflected by the efficiency of an institution's investment policies and practices.

Management efficiency

Management quality reflects the management soundness of a bank. The management acts as a safeguard to operate the bank in a smooth and decent manner and is called excellence management or skilful management, whenever it controls its cost and increases productivity, ultimately achieving higher profits. Here, this parameter is measured by total cost to total income ratio (Ahsan, 2016). Management assessment determines whether an institution is able to properly react to financial stress. This component rating is reflected by the management's capability to point out, measure, look after, and control risks of the institution's daily activities. It covers the management's ability to ensure the safe operation of the institution as the study complies with the necessary and applicable internal and external regulations. For the achievement of the goals of the bank certain period of the time proper and efficient management is required, for which the bank should have the following qualities: Adequate management expenses, tools for fair decision-making, Improvement of working structure for profitability. Management analysis can be done by using following formula:

$$\text{Management Efficiency Ratio (MER)} = \frac{\text{Net Profit after tax}}{\text{Total Number of Staff}} \times 100\%$$

Earnings

Earning is an important parameter to measure the financial performance of an organization. Earning quality mainly measures the profitability and productivity of the bank, explains the growth and sustainability of future earnings capacity. In the same way, bank depends on its earning to perform the activities like funding dividends, maintaining adequate capital levels, providing for opportunities for investment for bank to grow, strategies for engaging in new activities and maintaining the competitive outlook. Here

two ratios are used to determining the profitability of banks i.e., return on asset and return on equity (Ahsan, 2016). An institution's ability to create appropriate returns for expand, retains competitiveness, and capital is a key factor in rating its continued viability. Examiners determine this by assessing the company's growth, stability, valuation allowances, net interest margin, net worth level and the quality of the company's existing assets. The rating of banks on the earning parameter is significant because sustained high level of profitability enables a bank to boost its capital and improve its economic performance. There is negative relationship between profitability and probability of failure. The earnings (E) measure in the model also provides a ratio representative of management's level of effectiveness in utilization of assets to earn profits. Earning is the ultimate result of any business. Generally, higher earnings reflect better financial position. Similarly, the aggregate performance of the bank reflects from its earning.

Liquidity

Liquidity is the BFIs' diversified liquid assets which shows their financial strength and financial position. High liquidity shows safe but low investment and credit lending also may cause low profitability. The credit to deposit ratio (CDR) is a major tool to examine the liquidity of a bank and measures the ratio of fund that a bank has utilized in credit out of the deposit total collected. Higher the CDR more the effectiveness of the bank to utilize the fund it collected. As per the directives of Nepal Rastra Bank, BFIs are obliged to maintain its CDR 80. All BFIs are responsible for managing various liquidity ratios as per criteria and compulsory for reporting every quarter of each fiscal year. Thus, liquidity of BFIs is vital portion for maintaining the quality service and company sustainability. We have used following ratios to measure the liquidity status:

CHAPTER IV
RESULT AND DISCUSSION

In this chapter, we will be discussing the presentation and analysis of data obtained from various sources, with a particular focus on the camel components. As per the theoretical framework, our analysis will be centred on the financial performance of Rastriya Banijya Bank Limited, Agricultural Development Bank and Nepal Bank Limited, specifically on the five camel components, which include Capital Adequacy, Assets Quality, Management Quality, Earning Quality, and Liquidity. We have conducted an in-depth analysis of the data gathered from the annual reports of these banks using the camel methodology.

4.1 Results

4.1.1 Data Presentation and Analysis

The process of data analysis involves examining, cleaning, transforming, and modelling data with the ultimate aim of uncovering valuable insights, drawing conclusions, and aiding decision-making. Data analysis encompasses numerous approaches and techniques, spanning various domains such as business, science, and social sciences. In the modern business landscape, data analysis has become a crucial element in making decisions based on empirical evidence, which helps businesses to operate more efficiently. Data mining is a particular technique used in data analysis, focusing on statistical modelling and knowledge discovery for predictive purposes rather than purely descriptive purposes. On the other hand, business intelligence covers data analysis that relies heavily on aggregation, focusing mainly on business information.

This part of the study presents data on how well banks are equipped to handle different financial aspects, such as having enough capital, the quality of their assets, how efficiently they're managed, their earnings and liquidity. It also examines the ratios and findings of specific commercial banks from 2013/14 to 2022/23.

4.1.2 Capital Adequacy

Capital adequacy refers to the ability of a financial institution, such as a bank, to maintain sufficient capital levels to withstand financial losses and operational risks. In other words, it is the ratio of a bank's capital to its risk-weighted assets, which provides an indication of its financial strength and ability to meet its obligations to depositors and other creditors.

i. Capital Adequacy Ratio (CAR)

CAR stands for Capital Adequacy Ratio. It is a financial ratio that measures the amount of a bank's capital in relation to its risk-weighted assets. The capital adequacy ratio is calculated by dividing a bank's capital by its risk-weighted assets, with the result being expressed as a percentage. The higher the CAR, the more financially stable the bank is considered to be.

The Capital Adequacy Ratio (CAR) is a gauge of a bank's financial strength, represented as a percentage of its capital compared to the risk-weighted credit exposure it holds. This ratio, also known as the Capital-to-Risk Weighted Assets Ratio (CRAR), serves the purpose of safeguarding depositors and enhancing the stability and efficiency of global financial systems. It evaluates two categories of capital: tier one capital, capable of absorbing losses without necessitating the suspension of a bank's operations, and tier two capital, which can absorb losses in the event of a bank winding-up, offering a lower level of protection to depositors.

Table 1

Capital Adequacy Ratio (CAR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	12.83	11.71	17.58
Standard Deviation (σ)	4.37	1.55	2.26
Coefficient of Variation (CV)	34.08	13.27	12.85

Source: Annual report of respective banks

The table presents the Capital Adequacy Ratio (CAR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL) based on their respective annual reports. RBBL shows an average

CAR of 12.83%, with a standard deviation of 4.37% and a coefficient of variation (CV) of 34.08%, indicating moderate variability in its capital adequacy. ADBL demonstrates a slightly lower average CAR of 11.71%, accompanied by a lower standard deviation of 1.55% and a CV of 13.27%, reflecting more stable capital adequacy metrics compared to RBBL. NBL exhibits the highest average CAR at 17.58%, with a standard deviation of 2.26% and a CV of 12.85%, indicating strong capital adequacy performance with relatively low variability. These measures provide insights into the banks' resilience and ability to absorb financial shocks as indicated by their capital adequacy ratios.

ii. Core Capital Ratio (CCR)

Core capital represents the absolute minimum amount of capital that a thrift bank, such as a savings bank or savings and loan company, is obligated to maintain in accordance with Banks' loan regulations. This core capital is comprised of equity capital and declared reserves. The establishment of this minimum requirement is aimed at ensuring the safeguarding of consumers when they establish financial accounts.

In the context of Nepal, core or primary capital encompasses several components, including paid-up capital, share premium, non-redeemable preference shares, the general reserve fund, cumulative profit/loss, capital redemption reserve, capital adjustment fund/proposed bonus shares, and other fee reserves. The total of these elements of primary capital is used as the starting point, from which amounts related to goodwill, fictitious assets, investments exceeding the prescribed limit of 5.5% specified by the Nepal Rastra Bank (NRB), and investments in the securities of companies with financial interests are deducted. This deduction process results in the determination of the core capital.

Table 2

Core Capital Ratio (CCR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	11.21	9.96	15.68
Standard Deviation (σ)	4.05	2.16	2.65
Coefficient of Variation (CV)	36.15	21.68	16.93

Source: Annual report of respective banks

Table 2 presents the Core Capital Ratio (CCR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average CCR of 11.21%, with a standard deviation of 4.05% and a coefficient of variation (CV) of 36.15%, indicating moderate variability in its core capital ratio. ADBL shows a slightly lower average CCR of 9.96%, accompanied by a standard deviation of 2.16% and a CV of 21.68%, suggesting relatively stable core capital metrics compared to RBBL. NBL demonstrates the highest average CCR at 15.68%, with a standard deviation of 2.65% and a CV of 16.93%, indicating robust core capital adequacy with moderate variability. These measures provide insights into the banks' core capital strength and their ability to absorb losses and maintain financial stability.

4.1.3 Assets quality

An asset quality rating serves as an examination or assessment aimed at gauging the level of credit risk linked to specific assets, typically those that involve interest payments, such as loans and investment portfolios. The proficiency of management in overseeing and managing credit risk can significantly influence the resulting credit rating. In essence, it represents the extent of revenue or income that a bank can generate from its assets, primarily through the process of lending those assets. Consequently, this ratio is often referred to as an activity ratio or turnover ratio.

i. Non-Performing Loan Ratio (NPLR)

A nonperforming loan (NPL) represents the amount of money borrowed by a debtor who has not made the scheduled payments for a minimum of 90 days. When a loan becomes nonperforming, it is either already in default or on the verge of defaulting. At this stage,

the likelihood of the loan being fully repaid is significantly diminished. According to the International Monetary Fund (IMF), the regulatory definition of non-performing loans (NPLs) varies across jurisdictions. For countries reporting Financial Soundness Indicators (FSI) to the IMF, the FSI guideline recommends that loans (and other assets) should be classified as NPL when (1) payments of principal and interest are past due by 90 days or more, or (2) interest payments equal to 90 days interest or more have been capitalized (reinvested into the principal amount), refinanced, or rolled over (payment delayed by agreement). Or (3) evidence exists to reclassify them as nonperforming even in the absence of a 90-day past due payment, such as when the debtor files for bankruptcy (IMF 2019, pg. 59).1

Table 3

Non-performing Loan Ratio (NLPR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	3.06	4.34	3.62
Standard Deviation (σ)	0.94	1.28	1.28
Coefficient of Variation (CV)	30.81	29.54	35.34

Source: Annual report of respective banks

Table 3 presents the Non-Performing Loan Ratio (NPLR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average NPLR of 3.06%, with a standard deviation of 0.94% and a coefficient of variation (CV) of 30.81%, indicating moderate variability in its non-performing loans. ADBL shows a higher average NPLR of 4.34%, accompanied by a standard deviation of 1.28% and a CV of 29.54%, suggesting slightly more variability compared to RBBL. NBL demonstrates an average NPLR of 3.62%, with a standard deviation of 1.28% and a CV of 35.34%, indicating variability similar to RBBL but with a slightly higher average ratio. These measures provide insights into the banks' asset quality and their management of non-performing loans, critical indicators of financial health and risk management.

ii. Loan Loss Coverage Ratio (LLCR)

A loan loss provision is a designated expense reserved for situations where loans or credits become delinquent or default. It represents a set-aside amount in anticipation of potential loan defaults. Loan loss coverage, on the other hand, refers to the connection between the total provision for loan losses and the total amount of non-performing loans. This provision serves as a financial cushion to absorb losses and address bad or defaulted loans if they materialize. In this context, it is advantageous for a bank to maintain a higher provision because it helps ensure the bank's ongoing functionality, even in the event of loan defaults.

Table 4

Loan Loss Provision Ratio (LLPR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	73.17	73.86	122.58
Standard Deviation (σ)	12.22	4.74	22.01
Coefficient of Variation (CV)	16.70	6.42	17.95

Source: Annual report of respective banks

Table 4 presents the Loan Loss Coverage Ratio (LLCR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average LLCR of 73.17%, with a standard deviation of 12.22% and a coefficient of variation (CV) of 16.70%, indicating moderate variability in its ability to cover potential loan losses. ADBL shows a slightly higher average LLCR of 73.86%, accompanied by a lower standard deviation of 4.74% and a CV of 6.42%, suggesting more stable coverage of loan losses compared to RBBL. NBL demonstrates the highest average LLCR at 122.58%, with a standard deviation of 22.01% and a CV of 17.95%, indicating robust coverage of potential loan losses with moderate variability. These measures provide insights into the banks' provisions for potential credit losses, essential for assessing their risk management practices and financial stability.

iii. Loan Loss Provision Ratio (LLPR)

Banks and credit unions engage in the practice of providing loans to individuals, households, and businesses. However, it's important to recognize that not all loans are

fully repaid, and in some cases, banks extend loans to individuals with higher risk profiles, often charging elevated interest rates. To ensure financial stability and maintain solvency during challenging periods, banks make assessments to estimate potential losses and strive to maintain an adequate level of capital to absorb future loan write-offs.

The loan loss provision coverage ratio serves as an indicator of a bank's preparedness against impending losses. A higher ratio signifies that the bank is better equipped to weather future losses, including unexpected ones that go beyond what's covered by the allocated loan loss provision. It's essential to note that loan loss provisions are considered deductible expenses and are subtracted from the interest income when calculating the bank's overall financial performance.

Table 5

Loan Loss Provision Ratio (LLPR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	2.28	3.22	4.33
Standard Deviation (σ)	0.97	1.00	1.65
Coefficient of Variation (CV)	42.57	31.03	38.03

Source: Annual report of respective banks

Table 5 presents the Loan Loss Provision Ratio (LLPR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average LLPR of 2.28%, with a standard deviation of 0.97% and a coefficient of variation (CV) of 42.57%, indicating higher variability in its provisioning for loan losses. ADBL shows a higher average LLPR of 3.22%, accompanied by a standard deviation of 1.00% and a CV of 31.03%, suggesting relatively stable provisioning compared to RBBL. NBL demonstrates the highest average LLPR at 4.33%, with a standard deviation of 1.65% and a CV of 38.03%, indicating robust provisioning for loan losses with moderate variability. These measures provide insights into the banks' prudence in setting aside provisions for potential credit losses, crucial for evaluating their risk management strategies and financial health.

4.1.5 Management Efficiency

Management efficiency in a bank refers to the ability of its leadership and operational teams to maximize the utilization of resources, including financial, human, and technological assets, to achieve the institution's goals and objectives. It involves optimizing processes, minimizing waste, and making effective decisions to enhance profitability, customer satisfaction, and overall performance while adhering to regulatory and ethical standards.

Management Efficiency Ratio (MER)

Management refers to the process of overseeing and directing an entity, whether it's a business, a non-profit organization, or a government agency. This involves tasks like defining the organization's strategy and orchestrating the collective efforts of its staff or volunteers to achieve its goals by efficiently utilizing various resources, including financial, natural, technological, and human resources. In essence, management involves making decisions and taking actions to guide and optimize the functioning of the organization toward its objectives.

Table 6

Management Efficiency Ratio (MER) (in '000000)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	105.02	161.83	119.06
Standard Deviation (σ)	45.44	54.68	43.04
Coefficient of Variation (CV)	43.27	33.79	36.15

Source: Annual report of respective banks

Table 6 presents the Management Efficiency Ratio (MER) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average MER of 105.02 million, with a standard deviation of 45.44 million and a coefficient of variation (CV) of 43.27%, indicating moderate variability in its management efficiency. ADBL shows a higher average MER of 161.83 million, accompanied by a standard deviation of 54.68 million and a CV of 33.79%, suggesting relatively stable efficiency metrics compared to RBBL. NBL demonstrates an average MER of 119.06 million, with a standard deviation of 43.04

million and a CV of 36.15%, indicating robust management efficiency with moderate variability. These measures provide insights into the banks' operational effectiveness and their ability to utilize resources efficiently, crucial for assessing overall performance and competitiveness.

4.1.6 Earnings

Earnings refer to the net profits generated by a company's activities. They represent the amount of profit a company earns during a defined period, typically a quarter (three months) or a year. Earnings also serve as the basis for calculating corporate taxes. In a more detailed analysis of a company's financial performance, several specific terms are used, such as EBIT (Earnings before Interest and Taxes) and EBITDA (Earnings before Interest, Taxes, Depreciation, and Amortization). There are various interchangeable terms for earnings, including income and profit, each having nuanced definitions depending on the context and the objectives of the individuals or organizations using them. Quarterly earnings reports are eagerly anticipated by analysts who closely monitor the companies they track. These earnings reports are of great significance because they provide a direct indication of how well a company is performing in its operations.

i. Earnings per Share (EPS)

Earnings per Share (EPS) are a frequently referenced metric that indicates a company's profitability on a per-share basis. It is a valuable measure in various valuation methods, including the price-to-earnings ratio (P/E ratio). The P/E ratio, computed by dividing the stock price by EPS, is primarily employed to assess the relative worth of a company's earnings compared to others in the same industry.

In this context, when a company's price-to-earnings ratio (P/E ratio) is higher, it is typically seen as overvalued, suggesting that investors may be paying too much for each unit of earnings. Conversely, if a company's price-to-earnings ratio (P/E ratio) lower, it is often viewed as undervalued, indicating that investors might be getting a good deal by purchasing shares at a lower price relative to the earnings generated. However, company’s P/E ratio under 15 is considered as an appropriate value.

Table 7

Earnings per Share (EPS)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	26.32	36.95	42.85
Standard Deviation (σ)	11.47	12.58	23.44
Coefficient of Variation (CV)	43.57	34.04	54.70

Source: Annual report of respective banks

Table 7 presents the Earnings per Share (EPS) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average EPS of 26.32, with a standard deviation of 11.47 and a coefficient of variation (CV) of 43.57%, indicating moderate variability in its earnings per share performance. ADBL shows a higher average EPS of 36.95, accompanied by a standard deviation of 12.58 and a CV of 34.04%, suggesting relatively stable EPS metrics compared to RBBL. NBL demonstrates the highest average EPS at 42.85, with a standard deviation of 23.44 and a CV of 54.70%, indicating robust earnings performance with higher variability. These measures provide insights into the banks' profitability per share and their ability to generate earnings for shareholders, essential for evaluating their financial performance and investor attractiveness.

ii. Return on Equity (ROE)

Return on Equity (ROE) is a metric that indicates the portion of a company's net income expressed as a percentage of its shareholders' equity. It serves as a measure of a corporation's profitability by providing insight into how efficiently the company generates profits from the capital invested by its shareholders. In essence, ROE helps assess the effectiveness of the company's use of shareholder funds to generate earnings.

Table 8

Returns on Equity (ROE)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	16.15	28.96	12.08
Standard Deviation (σ)	11.39	24.15	4.92
Coefficient of Variation (CV)	70.58	83.39	40.77

Source: Annual report of respective banks

Table 8 presents the Return on Equity (ROE) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average ROE of 16.15%, with a standard deviation of 11.39% and a coefficient of variation (CV) of 70.58%, indicating higher variability in its return on equity. ADBL shows a higher average ROE of 28.96%, accompanied by a larger standard deviation of 24.15% and a CV of 83.39%, suggesting relatively unstable ROE metrics compared to RBBL. NBL demonstrates a lower average ROE at 12.08%, with a standard deviation of 4.92% and a CV of 40.77%, indicating moderate variability in its return on equity performance. These measures provide insights into the banks' profitability in relation to shareholder equity, crucial for evaluating their financial efficiency and investor returns.

iii. Return on Assets (ROA)

ROA, or Return on Assets, represents a measure of how effectively a bank employs its total resources, with a primary focus on its major assets, which typically include loans and advances. This metric assesses the bank's ability to generate profits from the productive sectors of its assets. A higher ROA indicates more efficient utilization and management of assets, leading to elevated profit levels. Essentially, ROA offers insight into how proficiently a bank deploys and leverages its assets to generate profits.

Table 9

Returns on Assets (ROA)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	1.58	1.69	2.02
Standard Deviation (σ)	0.79	0.68	0.90
Coefficient of Variation (CV)	50.26	40.57	44.77

Source: Annual report of respective banks

Table 9 presents the Return on Assets (ROA) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average ROA of 1.58%, with a standard deviation of 0.79% and a coefficient of variation (CV) of 50.26%, indicating moderate variability in its return on assets. ADBL shows a slightly higher average ROA of 1.69%, accompanied by a smaller standard deviation of 0.68% and a CV of 40.57%, suggesting relatively stable ROA metrics compared to RBBL. NBL demonstrates the highest average ROA at 2.02%, with a standard deviation of 0.90% and a CV of 44.77%, indicating strong return on assets performance with moderate variability. These measures provide insights into the banks' profitability in relation to their total assets, essential for assessing their operational efficiency and financial health.

4.1.7 Liquidity

Liquidity pertains to the ease with which an asset or investment can be swiftly purchased or sold in the market without causing significant price fluctuations. Market liquidity, on the other hand, refers to the capacity of a market, whether it's a stock market or a real estate market, to facilitate the buying and selling of assets at stable prices. Cash is a prime example of a highly liquid asset, whereas real estate, fine art, and collectibles are relatively less liquid, meaning they may not be as easily converted to cash.

In the context of a bank, liquidity signifies the bank's ability to meet its financial obligations promptly as they become due. Banks typically lend money to finance investments in assets that are relatively less liquid, yet they primarily rely on short-term

liabilities to fund these loans. Consequently, one of the principal challenges for a bank is ensuring its own liquidity remains secure under various foreseeable circumstances.

i. Cash Reserve Ratio (CRR)

The Cash Reserve Ratio (CRR) is a mandated minimum portion of the total customer deposits that commercial banks must maintain as reserves. These reserves can be held either in the form of physical cash or as deposits with the central bank. The specific CRR requirements are determined by the central bank's guidelines in a given country. The funds allocated for CRR, typically in the form of cash or cash equivalents, are securely held in bank vaults or placed with the central bank. The primary objective is to ensure that banks always have enough liquid assets to fulfil the withdrawal requests of their depositors.

CRR holds significant importance as a monetary policy tool and plays a crucial role in managing the money supply within an economy. The stipulations for CRR grant the central bank greater authority over the money circulating in the economy. Under fractional reserve banking, commercial banks are only obligated to maintain a specified fraction of the total deposits as reserves, allowing them to utilize the remaining funds for lending and investment purposes.

Table 10

Cash Reserve Ratio (CRR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	7.15	9.89	6.33
Standard Deviation (σ)	3.66	4.57	2.22
Coefficient of Variation (CV)	51.12	46.21	35.12

Source: Annual report of respective banks

Table 10 presents the Cash Reserve Ratio (CRR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average CRR of 7.15%, with a standard deviation of 3.66% and a coefficient of variation (CV) of 51.12%, indicating moderate variability in its cash

reserves. ADBL shows a higher average CRR of 9.89%, accompanied by a standard deviation of 4.57% and a CV of 46.21%, suggesting relatively stable cash reserve metrics compared to RBBL. NBL demonstrates the lowest average CRR at 6.33%, with a standard deviation of 2.22% and a CV of 35.12%, indicating strong cash reserve management with lower variability. These measures provide insights into the banks' liquidity positions and their ability to meet short-term obligations, crucial for evaluating their financial stability and risk management practices.

ii. Cash and Bank Balance Ratio (CBBR)

The Cash and Bank Balance Ratio (CBBR) is a financial metric that assesses the proportion of a company's cash and bank balances in relation to its total assets or total liabilities. This ratio provides insight into the liquidity and financial stability of a business by indicating the extent to which it holds readily available funds in the form of cash or bank deposits relative to its overall financial position. A higher CBBR typically signifies a stronger liquidity position, which can be advantageous for meeting short-term financial obligations and capitalizing on investment opportunities. A higher ratio shows the higher and greater ability of the bank to meet unexpected demand of the depositors. On the contrary, lower ratio indicates that bank might face liquidity crunch while paying obligations. It can be calculated as follows:

Table 11

Cash and Bank Balance Ratio (CBBR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	4.44	3.52	7.62
Standard Deviation (σ)	1.69	1.00	4.25
Coefficient of Variation (CV)	38.13	28.48	55.81

Source: Annual report of respective banks

Table 11 presents the Cash and Bank Balance Ratio (CBBR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average CBBR of 4.44%, with a standard deviation of 1.69% and a coefficient of variation (CV) of 38.13%, indicating moderate variability in its cash and bank balances. ADBL shows a lower average CBBR of 3.52%,

accompanied by a standard deviation of 1.00% and a CV of 28.48%, suggesting relatively stable cash and bank balance metrics compared to RBBL. NBL demonstrates the highest average CBBR at 7.62%, with a standard deviation of 4.25% and a CV of 55.81%, indicating significant variability in its cash and bank balances. These measures provide insights into the banks' liquidity management and their ability to maintain sufficient cash reserves, essential for meeting short-term obligations and ensuring financial stability.

iii. Investment in Government Securities Ratio (IGSR)

The government periodically provides opportunities to purchase short and long-term financial instruments and securities, offering a guaranteed minimum rate of return and a predefined level of risk. These instruments can be easily converted into cash when needed to fulfil short-term financial obligations. Examples of such financial instruments include Treasury bills, Development bonds, Repos, and outright securities, all of which are issued by the central bank, Nepal Rastra Bank, with the aim of ensuring a steady flow of liquidity throughout the country's financial system.

These investments are factored into what's known as the statutory liquidity fund (SLF). Consequently, commercial banks are required to allocate a portion of their funds into government securities up to a certain specified level. This practice helps maintain stability and liquidity in the banking sector while also assisting the government in managing its financial affairs effectively.

Table 12

Investment in Government Securities Ratio (IGSR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	87.50	96.30	73.71
Standard Deviation (σ)	8.01	1.60	19.26
Coefficient of Variation (CV)	9.16	1.66	26.13

Source: Annual report of respective banks

Table 12 presents the Investment in Government Securities Ratio (IGSR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited

(ADBL), and Nepal Bank Limited (NBL). RBBL has an average IGSR of 87.50%, with a standard deviation of 8.01% and a coefficient of variation (CV) of 9.16%, indicating relatively low variability in its investment in government securities. ADBL shows a higher average IGSR of 96.30%, with a very low standard deviation of 1.60% and a CV of 1.66%, suggesting very stable investment in government securities compared to RBBL. NBL demonstrates a lower average IGSR at 73.71%, with a standard deviation of 19.26% and a CV of 26.13%, indicating more significant variability in its investment in government securities. These measures provide insights into the banks' investment strategies and their commitment to secure and stable government securities, essential for assessing their risk management and investment policies.

iv. Credit to Deposit Ratio (CDR)

The loan-to-deposit ratio of banks is computed to understand their liquidity status. It indicates the bank's capability to cover its losses, loans, and customer withdrawals. An ideal loan-to-deposit ratio falls between 80 to 90 percent. If the ratio is too high, it suggests that the bank might lack sufficient capital to cover sudden and unforeseen loan demands or withdrawals.

Table 13

Credit to Deposit Ratio (CDR)

MEASURES	RBBL	ADBL	NBL
Mean ($\bar{x}$)	76.53	68.92	93.87
Standard Deviation (σ)	8.94	10.82	4.14
Coefficient of Variation (CV)	11.68	15.71	4.41

Source: Annual report of respective banks

Table 13 presents the Credit to Deposit Ratio (CDR) measures for Rastriya Banijya Bank Limited (RBBL), Agricultural Development Bank Limited (ADBL), and Nepal Bank Limited (NBL). RBBL has an average CDR of 76.53%, with a standard deviation of 8.94% and a coefficient of variation (CV) of 11.68%, indicating moderate variability in its credit to deposit ratio. ADBL shows a lower average CDR of 68.92%, with a higher standard deviation of 10.82% and a CV of 15.71%, suggesting relatively higher

variability in its credit to deposit metrics compared to RBBL. NBL demonstrates the highest average CDR at 93.87%, with a standard deviation of 4.14% and a CV of 4.41%, indicating strong credit to deposit performance with low variability. These measures provide insights into the banks' lending practices and their ability to utilize deposits effectively, crucial for evaluating their financial performance and stability.

4.2 Correlation Analysis

Correlation analysis helps us understand the relationship between two things. It tells us how one thing affects the other and to what degree. The correlation coefficient, which ranges from +1 to -1, shows us this relationship. A correlation coefficient of +1 means the variables are perfectly positively related, while -1 means they are perfectly negatively related.

The Table 15 shows the Pearson's correlation coefficient between dependent and independent variables for the study period of 2013/14 to 2022/23. Here ROA and ROE are the dependent variables and CAR, CCR, NPLR, LLCR, LLPR, MER, EPS, CRR, CBBR, IGSR and CDR are the independent variables.

Table 14

Correlation Coefficient

RATIOS	CAR	CCR	NPLR	LLCR	LLPR	MER	EPS	ROE	ROA	CBBR	IGSR	CDR	CRR
CAR	1												
CCR	.803**	1											
NPLR	-.650**	-.695**	1										
LLCR	-0.386	0.102	-0.174	1									
LLPR	-.755**	-.572*	.803**	0.385	1								
MER	.585*	.706**	-0.445	0.032	-0.406	1							
EPS	0.283	0.155	0.306	-.540*	0.042	0.071	1						
ROE	.660**	.828**	-.930**	0.254	-.719**	0.491	-0.25	1					
ROA	0.269	0.227	0.307	-0.467	0.081	0.123	.958**	-0.2	1				
CBBR	0.087	.591*	-0.355	.632*	-0.008	0.361	-0.11	0.463	0.016	1			
IGSR	-0.297	0.223	-0.259	.941**	0.256	0.101	-.521*	0.381	-0.47	.636*	1		
CDR	-0.158	0.377	-0.416	.915**	0.093	0.185	-.526*	.538*	-0.412	.771**	.944**	1	
CRR	-.541*	-0.119	0.388	.613*	.711**	-0.339	0.001	-0.26	0.108	0.502	0.503	0.483	1

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

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

Source: Annexure I (SPSS IBM SPSS Statistics 29.0.2.0)

The correlation analysis reveals the relationships between various financial variables, focusing on the Return on Assets (ROA) and Return on Equity (ROE), alongside other critical metrics. This analysis is based on a dataset comprising 10 observations, with correlations examined at significance levels of 0.01 and 0.05.

Starting with ROE, it exhibits a strong positive correlation with CAR (0.660, $p = 0.007$) and an even stronger correlation with CCR (0.828, $p < 0.001$). This suggests that higher capital adequacy and core capital ratios are associated with higher returns on equity. Conversely, ROE has a significant negative correlation with NPLR (-0.930, $p < 0.001$) and LLPR (-0.719, $p = 0.003$), indicating that higher levels of non-performing loans and loan loss provisions detract from equity returns. Additionally, ROE positively correlates with MER (0.491, $p = 0.063$), though this is slightly below the 0.05 significance threshold.

ROA, on the other hand, shows a very strong positive correlation with EPS (0.958, $p < 0.001$), meaning that higher earnings per share are closely linked to higher returns on assets. While ROA has moderate positive correlations with CAR (0.269, $p = 0.332$) and CCR (0.227, $p = 0.415$), these are not statistically significant. ROA also has a moderate negative correlation with CRR (-0.470, $p = 0.077$), suggesting that higher cash reserve ratios might slightly reduce asset returns, though this correlation is not statistically significant.

When examining other variables, CAR correlates positively with CCR (0.803, $p < 0.001$) and negatively with LLPR (-0.755, $p = 0.001$) and NPLR (-0.650, $p = 0.009$). CCR also positively correlates with MER (0.706, $p = 0.003$) but negatively with NPLR (-0.695, $p = 0.004$) and LLPR (-0.572, $p = 0.026$). NPLR, besides its negative impact on ROE, shows a positive correlation with LLPR (0.803, $p < 0.001$), underscoring the adverse effects of poor loan performance on financial stability.

LLCR has significant positive correlations with IGSR (0.941, $p < 0.001$) and CDR (0.915, $p < 0.001$), suggesting that better loan loss coverage is associated with higher investment in government securities and better credit to deposit ratios. CBBR positively correlates

with IGSR (0.636, $p = 0.011$) and CDR (0.771, $p < 0.001$), indicating that robust cash and bank balances are related to better investment in government securities and credit management.

Overall, the analysis underscores the critical relationships between profitability (as measured by ROA and ROE), efficiency, and loan performance. High capital adequacy and core capital ratios enhance equity returns, while non-performing loans and loan loss provisions detract from them. The interconnected nature of these financial performance indicators highlights the importance of managing both capital and loan quality to optimize returns.

Multiple Regression Analysis

Regression analysis is conducted to investigate how one variable influence or impacts other independent variables.

Table 15

Regression Analysis Model 1

Coefficients[a]

Model 2	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	41.263	17.693		2.332	.102
CAR	-1.851	1.519	-.675	-1.218	.310
CCR	3.869	1.855	1.447	2.086	.128
NPLR	-2.826	1.845	-.456	-1.532	.223
LLCR	.087	.107	.290	.811	.477
LLPR	.421	2.029	.067	.208	.849
MER	.095	.046	.337	2.058	.132
EPS	.049	.077	.079	.643	.566
CBBR	-.787	.348	-.311	-2.263	.109
IGSR	-.115	.086	-.409	-1.336	.274
CDR	.068	.123	.252	.552	.619
CRR	-.986	.612	-.377	-1.612	.205

a. Dependent Variable: ROE

Source: Annexure III (SPSS IBM SPSS Statistics 29.0.2.0)

The regression analysis explores the relationship between Return on Equity (ROE) and several predictor variables, including Capital Adequacy Ratio (CAR), Core Capital Ratio (CCR), Non-Performing Loan Ratio (NPLR), Loan Loss Coverage Ratio (LLCR), Loan Loss Provision Ratio (LLPR), Management Efficiency Ratio (MER in million), Earnings Per Share (EPS), Cash and Bank Balance Ratio (CBBR), Investment in Government Securities Ratio (IGSR), Credit to Deposit Ratio (CDR), and Cash Reserve Ratio (CRR). The model demonstrates a very high correlation between the observed and predicted values of ROE, with an R-value of 0.996 and an R-squared value of 0.991. This implies that approximately 99.1% of the variance in ROE is explained by the model, highlighting its robustness. The Adjusted R-squared value of 0.959, slightly lower than the R-squared, accounts for the number of predictors in the model and suggests that the model fits the data well.

The ANOVA table indicates that the regression model is statistically significant, with a p-value of 0.008, well below the 0.05 threshold. This confirms that the predictor variables collectively have a significant impact on ROE. The F-statistic of 30.901 further supports the model's validity.

Examining the coefficients, the constant term is 41.263, though it is not statistically significant with a p-value of 0.102. Among the predictors, CCR has a positive but non-significant effect on ROE (B = 3.869, p = 0.128), suggesting that increases in core capital ratio may boost equity returns. Conversely, CAR shows a negative, non-significant relationship with ROE (B = -1.851, p = 0.310), indicating that higher capital adequacy might reduce equity returns, though not conclusively.

NPLR negatively correlates with ROE (B = -2.826, p = 0.223), implying that higher levels of non-performing loans could detract from equity returns, albeit the relationship is not statistically significant. LLCR has a positive but non-significant relationship with ROE (B = 0.087, p = 0.477), while LLPR’s effect is also positive and non-significant (B = 0.421, p = 0.849).

Interestingly, MER has a positive, non-significant relationship with ROE (B = 0.095, p = 0.132), suggesting that higher management efficiency, as measured in millions, might slightly increase equity returns. EPS also shows a positive, non-significant impact on ROE (B = -0.049, p = 0.566).

CBBR's negative coefficient (B = -0.787, p = 0.109) indicates a potential adverse effect on ROE, though it is not statistically significant. IGSR has a negative, non-significant relationship with ROE (B = -0.115, p = 0.274), suggesting that higher investments in government securities might reduce equity returns. CDR's positive coefficient (B = 0.068, p = 0.619) indicates a non-significant positive relationship with ROE. Finally, CRR shows a negative, non-significant relationship with ROE (B = -0.986, p = 0.205).

In summary, while the regression model strongly explains the variance in ROE, individual predictors such as CAR, CCR, NPLR, LLCR, LLPR, MER, EPS, CBBR, IGSR, CDR, and CRR do not show statistically significant relationships with ROE at the conventional levels. This suggests that while these variables collectively impact ROE significantly, their individual contributions may not be significant.

Table 16

Regression Analysis Model 2

Coefficients[a]

Model 2		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
	(Constant)	1.204	.245		4.906	.016
	CAR	-.169	.021	-.745	-8.000	.004
	CCR	.220	.026	.996	8.542	.003
	NPLR	-.098	.026	-.193	-3.851	.031
	LLCR	-.003	.001	-.105	-1.751	.178
	LLPR	.284	.028	.544	10.099	.002
	MER	.002	.001	.090	3.271	.047
	EPS	.042	.001	.814	39.529	<.001
	CBBR	-.036	.005	-.173	-7.496	.005
	IGSR	-.024	.001	-1.025	-19.936	<.001
	CDR	.015	.002	.698	9.082	.003
	CRR	-.041	.008	-.189	-4.817	.017

a. Dependent Variable: ROA

Source: Annexure III (SPSS IBM SPSS Statistics 29.0.2.0)

The regression analysis investigates the relationship between Return on Assets (ROA) and various predictor variables: Capital Adequacy Ratio (CAR), Core Capital Ratio (CCR), Non-Performing Loan Ratio (NPLR), Loan Loss Coverage Ratio (LLCR), Loan Loss Provision Ratio (LLPR), Management Efficiency Ratio (MER in million), Earnings Per Share (EPS), Cash and Bank Balance Ratio (CBBR), Investment in Government Securities Ratio (IGSR), Credit to Deposit Ratio (CDR), and Cash Reserve Ratio (CRR).

The model demonstrates an exceptionally high correlation between the observed and predicted values of ROA, with an R-value of 1.000 and an R-squared value of 1.000. This suggests that the model explains 100% of the variance in ROA, indicating a perfect fit. The adjusted R-squared value of 0.999 confirms the model's robustness, accounting for the number of predictors included.

The ANOVA table indicates that the regression model is highly significant, with an F-statistic of 1103.860 and a p-value of less than 0.001. This confirms that the predictor variables collectively have a substantial impact on ROA.

Examining the coefficients reveals significant insights into the relationship between ROA and the predictor variables. The constant term is 1.204 and statistically significant with a p-value of 0.016. Among the predictors, CCR shows a strong positive and significant relationship with ROA (B = 0.220, p = 0.003), indicating that higher core capital ratios significantly enhance returns on assets. Similarly, LLPR has a substantial positive effect on ROA (B = 0.284, p = 0.002), suggesting that higher loan loss provisions are associated with increased asset returns. EPS also has a very strong positive impact on ROA (B = 0.042, p < 0.001), confirming that higher earnings per share significantly boost asset returns.

In contrast, several variables exhibit negative relationships with ROA. CAR has a significant negative effect (B = -0.169, p = 0.004), implying that higher capital adequacy reduces returns on assets. NPLR also negatively correlates with ROA (B = -0.098, p = 0.031), indicating that higher levels of non-performing loans detract from asset returns. MER (in million) has a positive and significant relationship with ROA (B = 0.002, p = 0.047), suggesting that higher management efficiency, measured in millions, slightly reduces asset returns. CBBR and CRR also show significant negative relationships with ROA (B = -0.036, p = 0.005 and B = -0.041, p = 0.017, respectively), indicating that

higher cash and bank balances, as well as higher cash reserve ratios, negatively impact returns on assets.

IGSR demonstrates a significant negative effect on ROA ($B = -0.024$, $p < 0.001$), suggesting that higher investments in government securities reduce asset returns. Conversely, CDR has a positive and significant relationship with ROA ($B = 0.015$, $p = 0.003$), indicating that higher credit to deposit ratios enhance returns on assets.

In summary, the regression analysis highlights the complex interplay between ROA and various financial metrics. Higher core capital ratios, loan loss provisions, earnings per share, and credit to deposit ratios positively influence asset returns. In contrast, higher capital adequacy, non-performing loans, management efficiency in millions, cash and bank balances, cash reserve ratios, and investments in government securities negatively impact returns on assets. These findings underscore the importance of balancing capital adequacy, loan performance, and efficiency to optimize returns on assets.

4.3 Discussion

The study utilizes the CAMEL model for financial statement analysis to assess the performance of the Nepalese banking sector from 20013/14 to 2022/23. Financial statements serve as crucial records detailing the financial position and activities of a firm. Various methods and techniques, alongside financial and statistical tools, are employed in the analysis. The research draws upon a range of reference materials, including books, articles, and research works. The findings reveal a significant relationship between financial performance and profitability, underscoring the model's utility for internal analysis, investment decisions, and research purposes within the banking sector.

Banks with higher Capital Adequacy often rely more on equity financing, which tends to have a higher cost compared to debt financing. Consequently, the higher cost of equity can reduce the profitability metrics such as ROA and ROE. Maintaining a higher level of capital signifies a lower risk of insolvency or default, which is beneficial for stability but may limit the bank's ability to take on more profitable but risky investments. Thus, a higher Capital Adequacy may be associated with lower returns. A higher Capital Adequacy might reflect a conservative approach to risk management, where the bank prioritizes safety over profitability. This cautious approach may result in lower returns on assets and equity. The relationship between Capital Adequacy and Return on Assets

(ROA) or Return on Equity (ROE) in banking literature often suggests a negative correlation. Importantly this outcome is consistent with the finding provided in Shrestha & Gnawali (2022). They have found that CRR and AQ is negatively related to ROA. Similarly, the study shows negative relation of NPLR on ROA and ROE which is supported by the research by Ahsan (2016), Jothr (2021), Kulshrestha & Srivastava (2022) and Akinbo (2022) who found a significant negative relationship between non-performing loans (NPLs) and financial performance, indicating that higher NPL ratios lead to lower earnings (measured by ROA and ROE) for Nepalese commercial banks. The study also indicates that higher loan loss coverage ratios, which reflect the extent to which banks have provisions to cover non-performing loans, tend to be negatively associated with earnings. This is because maintaining high provisions can reduce net income and profitability. Similar to LLCR, this study found that higher loan loss provision ratios, which represent the proportion of provisions set aside for potential loan losses, are negatively related to earnings. High LLPR indicates more funds are being allocated to cover potential losses, thereby reducing the profitability of banks.

In this study, it is found that there is positive relation between management efficiency ratio (MER) and earnings, which is supposed obvious. This finding is supported by Bhattarai, Y. R. (2016)., which demonstrates that higher management efficiency, as measured by management efficiency ratios, is positively correlated with earnings (ROE and ROA). Efficient management practices lead to better resource allocation, cost control, and operational effectiveness, thereby enhancing profitability.

Furthermore, this research demonstrates a favourable correlation between Earnings per Share (EPS) and indicators of profitability, such as Return on Assets (ROA) and Return on Equity (ROE). This finding aligns with the conclusions drawn by numerous other researchers like Khadka (2022).

The findings of the study revealed a negative relationship between liquidity and earnings. This is also supported by the study by Ghimire and Acharya (2018), who analysed the relationship between liquidity and profitability, specifically focusing on Return on Assets (ROA) and Return on Equity (ROE). The study concluded that there is a negative relationship between liquidity and ROA. This means that higher levels of liquidity are associated with lower returns on assets. The rationale is that holding excess liquid assets, which typically generate lower returns compared to other investments, leads to a

reduction in overall asset profitability. Similarly, the study found a negative relationship between liquidity and ROE. High liquidity levels imply that a significant portion of the bank's capital is tied up in low-yielding liquid assets, thereby reducing the return on equity. Banks that maintain excessively high liquidity may sacrifice potential income from higher-yield investments, impacting overall profitability. This study suggests that higher levels of CRR were associated with decreased profitability for banks as increase in CRR causes decrease in lending which results low profitability. Likewise, the study found a neutral relationship between Cash and Bank Balance Ratio (CBBR) and both ROE and ROA. This implies that variations in CBBR did not significantly impact bank profitability metrics, indicating a lack of direct influence between these variables. Similarly, the analysis revealed a neutral relationship between Investment in Government Securities Ratio (IGSR) and both ROE and ROA. This suggests that the level of investment in government securities did not have a significant impact on bank profitability, indicating a balanced relationship between these variables. However, the study identified a negative relationship between Credits to Deposit Ratio (CDR) low correlation on earnings. This implies that higher levels of credit extended relative to deposits, causing rise in non-performing loans, were associated with decreased profitability for banks, indicating potential risks or inefficiencies in lending practices or asset allocation strategies. Overall, the study provides insights into the complex relationship between regulatory ratios and bank profitability metrics, highlighting the importance of managing liquidity, credit risk, and investment strategies to optimize financial performance.

CHAPTER V
SUMMARY AND CONCLUSION

This chapter gives a quick overview of the study and talks about the important things found in it. It also wraps up the study by discussing what it means and what we can learn from it. Additionally, it suggests some ways to use the study's findings to improve how we look at the financial health of commercial banks in Nepal using the CAMEL framework. It mentions some ideas for future research, both for what's left to explore and what this study has already covered. The report utilizes CAMEL framework to assess state-owned commercial banks, employing various financial ratios specific to each CAMEL component. Additionally, it's important to note that the report focuses solely on key ratios that characterize each aspect of the CAMEL framework.

5.1 Summary

In today's competitive banking world, commercial banks face many challenges and risks because the banking industry keeps growing and changing. To stay ahead, banks are using new and advanced ideas to attract and keep customers and maintain business accordingly. To do this well, banks need to constantly update their research and development and carefully look at everything affecting how well they're doing. One common tool BFIs use, the CAMEL framework, a rating system that helps them to understand how well they are doing financially. It looks at five main areas to break down a bank's performance: capital, assets, management, earnings and liquidity. The main goal of using the CAMEL system is to give both depositors and banks themselves accurate information about the bank's financial health.

In this study, we examined the financial performance of three state-owned commercial banks in Nepal over a ten-year period from fiscal year 2013/14 to 2022/23. Utilizing the CAMEL framework the study aimed to evaluate the financial strength of these institutions and explore the relationship between CAMEL components and profitability indicators like Return on Assets (ROA) and Return on Equity (ROE).

The data analysis revealed that all three banks generally maintained capital adequacy above regulatory requirements. Among them, NBL showed the highest average Capital Adequacy Ratio (CAR) and Core Capital Ratio (CCR), indicating strong capitalization. However, RBBL and ADBL also demonstrated sufficient capital cushions throughout the observed period.

The asset quality indicators, particularly Non-Performing Loan Ratio (NPLR) and Loan Loss Provision Ratio (LLPR), varied significantly. NBL showed comparatively better asset quality than ADBL, which had higher NPLs in the earlier years. The Loan Loss Coverage Ratio (LLCR) was relatively consistent across banks, reflecting adequate provisioning practices.

In terms of management efficiency, measured by the Management Efficiency Ratio (MER), RBBL demonstrated stronger operational control, especially in managing expenses relative to income. This suggests more prudent financial management compared to its peers.

The earnings component, however, showed a downward trend for all three banks. Both Earnings per Share (EPS) and Return on Equity (ROE) declined in recent years, indicating profitability challenges despite stable asset bases. RBBL outperformed the others in EPS, while NBL maintained better ROE and ROA figures, suggesting more effective use of shareholders' equity and assets.

Liquidity performance, a crucial part of bank sustainability, was gauged using the Cash Reserve Ratio (CRR), Cash and Bank Balance Ratio (CBBR), and Investment in Government Securities Ratio (IGSR). The analysis showed that all three banks were largely compliant with liquidity standards. However, CRR and CBBR trends reflected conservative liquidity management, likely prioritizing regulatory compliance over aggressive investment strategies. The Credit to Deposit Ratio (CDR) further confirmed prudent lending practices across all banks.

The correlation and regression analysis conducted in the study indicated significant relationships between CAMEL components and the profitability indicators ROA and ROE. Asset Quality and Earnings showed the strongest positive correlation with profitability, while capital adequacy had a moderate effect. Liquidity and management efficiency had less significant but still noteworthy roles in influencing returns.

In summary, the CAMEL framework proved effective in evaluating the financial performance of state-owned commercial banks in Nepal. While these banks showed sound capital bases and improving asset quality, the weakening profitability trends highlighted areas of concern. The interrelationship among CAMEL indicators and profitability suggests that strengthening asset quality and improving earnings can substantially enhance financial performance. The study provides a foundation for further research and offers insights that can guide bank managers, investors, and policymakers.

5.2 Conclusion

The financial assessment of Rastriya Banijya Bank Limited, Agricultural Development Bank Limited, and Nepal Bank Limited using the CAMEL framework led to a number of key conclusions regarding their operational health and sustainability. Over the 10-year study period, these state-owned banks demonstrated mixed performances across the five CAMEL dimensions, reflecting both their institutional strengths and areas requiring improvement.

In terms of capital adequacy, all three banks successfully maintained compliance with the Nepal Rastra Bank's minimum capital requirements. Nepal Bank Limited consistently held the highest average CAR and CCR, showcasing its strong financial foundation and capacity to absorb losses. This highlights the bank's resilience in times of economic stress and its ability to maintain depositor confidence. Similarly, RBBL and ADBL also demonstrated sufficient capitalization, although with slightly more variability across fiscal years.

The asset quality dimension revealed more complex results. While there was a general improvement in reducing non-performing loans, ADBL faced significant issues with

higher NPL ratios during the initial years. This suggests a need for more stringent credit risk management practices, especially in agricultural financing. In contrast, NBL maintained relatively better asset quality, which was further validated by lower LLPR and higher LLCR values. These findings point to more robust loan recovery and provisioning mechanisms in place.

Management efficiency, as assessed through the Management Efficiency Ratio, showed RBBL to be the most cost-effective bank among the three. Its ability to control administrative expenses and generate income effectively indicates stronger governance and internal control mechanisms. Meanwhile, ADBL and NBL faced higher operating costs relative to income, suggesting inefficiencies in resource utilization or structural overheads.

The most pressing concern emerging from the study lies in the earnings domain. All three banks experienced a declining trend in both EPS and ROE, particularly in recent years. This decline indicates profitability pressure, possibly due to reduced interest margins, increased provisioning requirements, or heightened competition. Despite these challenges, NBL continued to show relatively better ROA and ROE, reflecting more efficient use of its resources. Sustained earnings are crucial for long-term capital accumulation and shareholder value, and thus this finding underscores the need for urgent strategic adjustments.

On the liquidity front, the banks maintained sufficient reserves to meet short-term obligations, complying with regulatory requirements such as the Cash Reserve Ratio. However, conservative liquidity positions may have also limited opportunities for more profitable investments. The Investment in Government Securities Ratio and CDR confirmed cautious lending and investment behavior, possibly reflective of risk-averse policies in public banks.

Statistical analysis confirmed that CAMEL indicators are significantly correlated with profitability metrics. Particularly, asset quality and earnings were found to have the most

direct impact on ROA and ROE. This validates CAMEL as a comprehensive tool for financial performance evaluation and risk diagnosis.

In conclusion, while Nepal's state-owned banks are fundamentally sound in capital structure and liquidity management, they face challenges in earnings sustainability and efficiency. The CAMEL framework offers a valuable lens to not only assess performance but also to identify priority areas for improvement. Strengthening credit appraisal systems, streamlining operations, and diversifying income sources are essential for long-term growth and financial stability. This study thus contributes meaningful insights for regulators, bank executives, and policymakers engaged in fortifying Nepal's public banking sector.

5.3 Implications

These banks and financial institutions in our country have their own unique ways of operating and managing their affairs. However, they are always open to suggestions and feedback for improvement and growth. Here are some recommendations:

i. Over the past few years, these banks have consistently upheld a capital fund ratio slightly above regulatory requirements, allowing them to fulfil obligations while strategically investing surplus capital.

ii. Despite commendable efforts in managing Non-Performing Loans (NPLs), there remains a pressing need to further reduce them, ideally below the 2 percent threshold. The challenges lie in navigating global economic downturns and internal economic contractions, which may have contributed to an uptick in bad loans. While Loan Loss Coverage (LLC) and Loan Loss Provision (LLP) practices are generally satisfactory, there's a call for ADBL to adjust LLP slightly to mitigate risks.

iii. Management efficiency across these banks has been on an upward trajectory, but there's a notable fluctuation in staff numbers over the study period. This erratic pattern could potentially undermine long-term management stability.

iv. Following a phase of heightened capitalization among commercial banks, recent years have seen a decline in income ratios such as Return on Equity (ROE) and Earnings per Share (EPS). Factors including interest rate fluctuations, increased

base rates, and a contraction in the investment sector have contributed to this decline. Additionally, challenges within the internal economy and central bank policies have further impacted bank incomes.

v. While liquidity ratios have been adequately maintained by banks in recent times, there are concerns regarding the Credit-Deposit (CD) Ratio, particularly ADBL's which exceeds 90 percent, surpassing the threshold outlined in the 2021/22 monetary policy. RBBL and NBL maintain CD ratios around 70 percent. Both scenarios pose risks to the banks, necessitating proactive management to mitigate them.

Based on the aforementioned recommendations, there is ample scope for enhancing and refining future studies in terms of data collection, models, and methodologies. Some key points for improvement are outlined below:

i. This study exclusively relies on secondary data sources, such as annual reports and reports from past researchers. Future researchers are encouraged to incorporate primary data collection methods.

ii. While this study utilizes linear regression analysis, future researchers can explore alternative advanced statistical tools to enhance the analysis.

iii. The sample size in this study is limited to three banks. Future studies could benefit from expanding the sample to include more banks or other non-banking financial institutions.

iv. In this research, the financial performance of commercial banks is assessed using the CAMEL method. However, future studies could augment this analysis by introducing sensitivity, thereby adopting the CAMELS framework for a more comprehensive evaluation.

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ANNEXURE

Annexure I

Rastriya Banijya Bank Limited

F/Y	Net Profit (in million)	Total deposit (in million)	Total Loans and Advancement (in Million)	Total Investment (in million)	Total Non performing Loan (in Million)	Total Loan Loss Provision (in Million)	No of Staff	Cash & Bank Balance (In Million)	Total Investment in Govt. Securities (in million)	Share holders equity (in Million)	CDR	CAR	CCR	NPLR	EPS	CRR	ROA
2070/71	1836.70	107,269.94	60,854.85	32,089.38	3,885.22	3,561.52	2523	3,027.64	30,492.83	2,386.57	56.73	10.00	4.46	6.38	21.38	19.38	1.47
2071/72	4643.87	124,221.66	75,836.50	35,310.27	4,058.09	3,757.22	2545	3,830.59	34,160.36	6,675.76	61.05	10.00	10.16	5.35	57.07	14.48	3.22
2072/73	2355.29	146,207.63	85,470.37	43,768.30	3,636.01	3,692.20	2470	4,488.21	42,171.32	11,707.29	58.46	10.00	9.31	4.25	27.42	14.09	1.42
2073/74	2903.71	153,580.97	106,431.35	38,276.47	4,015.89	4,269.80	2248	4,198.54	37,330.59	12,637.13	69.30	10.39	9.15	3.77	32.32	9.60	1.60
2074/75	3659.27	164,210.30	120,872.90	45,080.00	5,739.77	6,069.72	1945	6,658.43	44,497.04	19,070.77	71.38	11.00	9.98	4.75	30.26	5.29	1.42
2075/76	5046.52	189,255.34	148,115.32	40,560.00	7,092.39	6,680.83	2096	8,194.98	37,943.22	21,585.80	77.15	13.39	12.31	4.59	56.04	6.44	2.23
2076/77	4377.32	230,902.64	156,518.71	76,575.92	5,926.16	6,728.15	1978	7,093.86	72,134.52	23,029.54	67.16	12.64	11.42	4.08	48.61	7.32	1.64
2077/78	3423.63	263,836.77	195,971.11	66,356.15	6,324.34	7,321.76	2187	15,735.16	64,033.69	28,674.30	73.62	13.46	11.09	3.23	37.27	3.54	1.10
2078/79	4292.82	258,144.30	226,717.55	61,395.03	4,800.92	7,738.29	2136	7,880.10	59,491.78	32,678.94	88.49	13.29	10.95	2.09	34.85	7.32	1.30
2079/80	3595.13	321,654.94	242,942.01	74,836.26	9,353.11	10,389.13	2635	9,789.49	72,965.35	50,738.31	76.90	12.92	10.80	3.77	34.85	6.98	0.91

Annexure II

Agricultural Development Bank Limited

F/Y	Net Profit (in million)	Total deposit (in million)	Total Loans and Advancement (in Million)	Total Investment (in million)	Total Non performing Loan (in Million)	Total Loan Loss Provision (in Million)	No of Staff	Cash & Bank Balance (In Million)	Total Investment in Govt. Securities (in million)	Share holders equity (in Million)	CDR	CAR	CCR	NPLR	EPS	CRR	ROA
2070/71	1,520.81	65,898.41	62,475.93	13,380.74	3,408.95	5,286.61	2,909	2,671.96	11,054.03	15,076.25	94.80	14.93	12.49	5.46	35.19	6.33	1.76
2071/72	3,603.37	77,035.06	72,238.52	13,537.81	3,862.82	3,660.03	2,739	2,927.34	10,569.61	16,224.11	93.77	17.16	15.17	5.35	78.83	7.68	3.12
2072/73	2,647.83	87,387.16	83,418.26	14,019.13	3,634.79	3,928.71	2,430	3,327.91	6,312.92	18,127.31	95.46	17.18	15.19	4.36	52.79	5.39	2.32
2073/74	2,942.17	99,816.27	92,725.21	15,939.23	4,266.11	4,518.66	2,632	12,252.21	5,829.96	23,594.33	92.90	20.41	18.61	4.60	31.59	9.95	2.15
2074/75	3,442.32	104,216.46	103,987.23	12,246.65	3,545.96	4,073.25	2,455	11,227.27	8,304.24	26,458.30	100.26	19.66	19.28	3.41	36.64	7.94	2.54
2075/76	4,191.59	118,884.92	112,465.13	16,944.83	3,700.10	3,024.09	2,308	11,500.75	15,896.04	25,967.49	93.62	20.37	19.27	3.29	42.88	4.20	2.71
2076/77	3,331.74	143,731.66	126,056.07	24,537.71	3,579.99	4,335.73	2,013	8,489.43	23,144.79	28,471.22	85.84	19.29	16.47	2.84	31.45	8.74	2.77
2077/78	3,527.54	162,990.25	154,936.45	47,067.83	2,912.81	4,440.86	2,402	10,636.73	35,555.59	31,505.12	92.93	16.94	14.42	1.88	29.13	5.98	1.86
2078/79	2,225.77	174,589.01	178,593.01	47,978.29	3,732.59	5,759.39	2,336	6,559.90	41,455.71	33,357.03	107.01	15.59	13.62	2.09	14.41	3.08	1.59
2079/80	3,323.41	201,582.53	183,039.64	58,383.51	5,088.50	7,006.87	2,391	9,462.42	44,930.49	33,793.65	91.56	14.24	12.24	2.78	7.42	4.06	0.90

Annexure III

Nepal Bank Limited

F/Y	Net Profit (in million)	Total deposit (in million)	Total Loans and Advancement (in Million)	Total Investment (in million)	Total Non performing Loan (in Million)	Total Loan Loss Provision (in Million)	No of Staff	Cash & Bank Balance (In Million)	Total Investment in Govt. Securities (in million)	Share holders equity (in Million)	CDR	CAR	CCR	NPLR	EPS	CRR	ROA
2070/71	716.96	69,337.70	41,218.30	22,664.11	2,109.23	2,182.70	2,618	2,636.73	19,910.03	3,347.09	59.45	4.55	3.92	5.12	18.08	9.60	0.92
2071/72	483.85	77,998.80	53,388.39	16,902.24	2,126.08	2,417.53	2,623	3,312.65	16,153.48	3,830.94	68.45	7.49	6.32	3.98	7.48	11.55	0.55
2072/73	2,882.98	89,410.10	63,524.49	12,843.44	1,978.53	2,274.41	2,356	3,469.54	12,747.28	6,713.91	71.05	10.20	9.01	3.11	44.59	17.46	2.79
2073/74	3,117.89	93,944.00	74,372.89	12,181.30	2,469.79	2,627.00	2,112	5,489.37	8,937.33	11,451.75	79.17	14.47	13.37	3.32	38.77	18.81	2.78
2074/75	3,215.68	99,831.40	99,540.73	16,247.77	3,354.52	2,518.98	2,142	5,780.88	12,727.60	22,921.65	75.68	11.27	10.29	3.37	39.98	9.05	2.41
2075/76	2,596.74	118,275.30	117,200.79	16,425.73	3,094.10	2,990.38	2,317	10,418.97	13,218.13	29,281.34	78.14	17.73	16.80	2.64	26.99	4.06	1.51
2076/77	2,332.89	142,989.20	141,530.38	32,596.09	3,495.80	3,791.02	2,172	4,971.64	28,813.72	30,030.99	72.25	17.01	16.00	2.47	20.68	4.53	1.22
2077/78	2,961.23	163,622.50	162,813.38	30,009.31	3,337.67	4,234.44	2,504	6,528.39	26,513.42	33,215.15	82.76	16.80	13.54	2.05	23.43	4.19	1.33
2078/79	2,923.28	197,166.80	196,076.15	42,786.91	3,588.19	5,093.09	2,429	6,391.60	38,705.79	35,463.61	86.97	15.05	11.98	1.83	20.29	3.49	1.12
2079/80	3,437.58	245,789.40	244,514.00	56,946.18	6,968.65	6,215.13	2,725	8,656.50	53,339.30	36,522.67	72.65	13.74	10.85	2.85	23.39	7.97	1.81

Annexure IV

Correlation

RATIOS	CAR	CCR	NPLR	LLCR	LLPR	MER	EPS	ROE	ROA	CBBR	IGSR	CDR	CRR
CAR	1												
CCR	.803**	1											
NPLR	-.650**	-.695**	1										
LLCR	-0.386	0.102	-0.174	1									
LLPR	-.755**	-.572*	.803**	0.385	1								
MER	.585*	.706**	-0.445	0.032	-0.406	1							
EPS	0.283	0.155	0.306	-.540*	0.042	0.071	1						
ROE	.660**	.828**	-.930**	0.254	-.719**	0.491	-0.25	1					
ROA	0.269	0.227	0.307	-0.467	0.081	0.123	.958**	-0.2	1				
CBBR	0.087	.591*	-0.355	.632*	-0.008	0.361	-0.11	0.463	0.016	1			
IGSR	-0.297	0.223	-0.259	.941**	0.256	0.101	-.521*	0.381	-0.47	.636*	1		
CDR	-0.158	0.377	-0.416	.915**	0.093	0.185	-.526*	.538*	-0.412	.771**	.944**	1	
CRR	-.541*	-0.119	0.388	.613*	.711**	-0.339	0.001	-0.26	0.108	0.502	0.503	0.483	1

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

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

Source: Annexure I (SPSS IBM SPSS Statistics 29.0.2.0)

Annexure V

Multiple Regression Analysis: Model 1

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CARb		Enter

a. Dependent Variable: ROE

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.996a	.991	.959	1.29074

a. Predictors: (Constant), CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CAR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	566.296	11	51.481	30.901	.008b
	Residual	4.998	3	1.666		
	Total	571.294	14			

a. Dependent Variable: ROE

b. Predictors: (Constant), CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CAR

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	41.263	17.693		2.332	.102
	CAR	-1.851	1.519	-.675	-1.218	.310
	CCR	3.869	1.855	1.447	2.086	.128
	NPLR	-2.826	1.845	-.456	-1.532	.223
	LLCR	.087	.107	.290	.811	.477
	LLPR	.421	2.029	.067	.208	.849
	MER	.095	.046	.337	2.058	.132
	EPS	.049	.077	.079	.643	.566
	CBBR	-.787	.348	-.311	-2.263	.109
	IGSR	-.115	.086	-.409	-1.336	.274
	CDR	.068	.123	.252	.552	.619
	CRR	-.986	.612	-.377	-1.612	.205

a. Dependent Variable: ROE

Source: SPSS BM SPSS Statistics 29.0.2.0

Annexure VI

Multiple Regression Analysis: Model 2

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
2	CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CARb	.	Enter

a. Dependent Variable: ROA

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000a	1.000	.999	.01790

a. Predictors: (Constant), CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CAR

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.890	11	.354	1103.860	<.001b
	Residual	.001	3	.000		
	Total	3.891	14			

a. Dependent Variable: ROA

b. Predictors: (Constant), CRR, EPS, CCR, MER (in mil), IGSR, CBBR, NPLR, LLPR, CDR, LLCR, CAR

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
2	(Constant)	1.204	.245		4.906	.016
	CAR	-.169	.021	-.745	-8.000	.004
	CCR	.220	.026	.996	8.542	.003
	NPLR	-.098	.026	-.193	-3.851	.031
	LLCR	-.003	.001	-.105	-1.751	.178
	LLPR	.284	.028	.544	10.099	.002
	MER	.002	.001	.090	3.271	.047
	EPS	.042	.001	.814	39.529	<.001
	CBBR	-.036	.005	-.173	-7.496	.005
	IGSR	-.024	.001	-1.025	-19.936	<.001
	CDR	.015	.002	.698	9.082	.003
	CRR	-.041	.008	-.189	-4.817	.017

a. Dependent Variable: ROA

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