

CAMEL MODEL FOR FINANCIAL PERFORMANCE ANALYSIS OF NEPALESE COMMERCIAL BANKS

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by

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**CAMEL Model for Financial Performance Analysis of Nepalese Commercial Banks.**" The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has been proposed and presented as part of requirements for any other academic purposes.

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

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REPORT OF RESEARCH COMMITTEE

Ms. Nasrina Shrestha has defended research proposal entitled "CAMEL Model for Financial Performance Analysis of Nepalese Commercial Banks" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Mr. Keshar Singh Khati and submitted the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the dissertation entitled "**CAMEL Model for Financial Performance Analysis of Nepalese Commercial Banks**" presented by Ms. Nasrina Shrestha for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify the dissertation is worthy of acceptance.

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ABBREVIATIONS

ANOVA	=	Analysis of Variance
CAR	=	Capital Adequacy Ratio
CBBR	=	Cash and Bank Balance Ratio
EBL	=	Everest Bank Limited
EPS	=	Earnings Per-share
FY	=	Fiscal Year
GSR	=	Government Securities to Total Investment Ratio
MAX	=	Maximum
MER	=	Management Efficiency Ratio
MIN	=	Minimum
N	=	Number of Observation
NICA	=	NIC Asia Bank Limited
NPL	=	Non-Performing Loan
NPLR	=	Non-Performing Loan Ratio
NRB	=	Nepal Rastra Bank
P	=	Significance Level
ROA	=	Return on Assets
ROE	=	Return on Equity
S.D.	=	Standard Deviation

ABSTRACT

The purpose of the study is to look at how CAMEL variables affect the financial performance of commercial banks in Nepal. In order to determine the impact of CAMEL factors on profitability, three of Nepal's largest commercial banks were chosen for this investigation. Data is gathered from publications such as Unified Directives, Nepal Rastra Bank Report, annual statement of selected sample banks, and others. Three commercial banks' secondary data for the years 2013/14 to 2022/23 were used in the study.

A study framework was created in order to draw conclusion. Causal and descriptive study design was used. In this research, the profitability indicators for ROA and ROE are considered dependent variables. The CAMEL variables, which include the cash and bank balance ratio, earnings per share, non-performing loan ratio, capital adequacy ratio, government security ratio, asset quality ratio and management efficiency ratios, are considered independent variables that determine profitability. Data were gathered from Nepal Rastra Bank's website as well as other relevant official websites of affiliated banks. SPSS and Microsoft Excel were used for data analysis purpose.

The study's findings indicate that there is a positive and negative correlation between the dependent variables, ROA and ROE, and the independent variables. There is a positive correlation between the correlation coefficients of ROA and NPLR and EPS, and a negative correlation between CAR, MER, CBBR, and GSR. The independent variables and ROE have both positive and negative correlations. While CAR, NPLR, MER, CBBR, and GSR have negative correlations, ROE and EPS have positive correlations.

Key Words: Capital Adequacy Ratio, Asset Quality Ratio, Non-Performing Loan Ratio, Management Efficiency Ratio, Earning Per Share, Cash and Bank Balance Ratio, Government Securities Ratio, Return on Assets, Return on Equity.

Key words: *capital adequacy, assets quality, management efficiency, earning, liquidity*

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The financial industries are crucial to any country's economic growth. Savings are gathered by financial institutions, especially depository banks, which then provide loans to those in need. As a result, according to Arif and Anees (2012), the banking sector is the foundation of the financial sector. The late 1980s saw the implementation of numerous joint venture banks as a result of financial deregulation initiatives. Many domestic investors started investing in the banking industry as a result. Financial institutions participate in merger and acquisition activity, which lowers the number of banks and other financial institutions (BFIs), as a result of the application of legislation governing mergers and acquisitions and the requirement to increase paid-up capital (NRB, 2023).

The banking industry is one of the financial industries that is expanding the quickest in the globe right now. A nation's ability to grow economically steadily and sustainably depends mostly on its financial performance and stability (Roman & Sargu, 2013). A strong banking program is crucial for the nation's economic expansion because it makes effective use of the few resources available to the government. Furthermore, banks serve as intermediaries for a wide range of businesses, including agriculture, manufacturing, construction, poultry, textiles, and commerce. As a financial organization dealing with money, a bank is commonly believed to be the cornerstone of any economy, and Nepal is no exception (Kandel, 2019).

The evaluation of a bank's financial performance is contingent upon its equity, profitability, expenses, revenue, liabilities, and assets. Because they have been paying large sums of taxes annually, commercial banks have made considerable contributions to the nation's revenue. They also have an effect on the stock market. Establishing the positions for strengths, weaknesses, opportunities, and threats in the SWOT analysis is so essential. The health of the banks has a major influence on a country's trade and development. Stakeholder groups with an industry connection, such as investors,

stockholders, and other industry decision-makers, are curious to know about the bank's financial performance.

The firm's financial strengths and weaknesses should be assessed through a financial performance study. Financial performance analysis is the process of evaluating the advantages and disadvantages of a company's financial situation (Baral, 2005). The two most commonly utilized performance measures are return on assets (ROA) and return on equity (ROE), also referred to as return on investment.

At national and international levels, CAMEL variables have already been used by several researchers, academicians, and administrators to assess the performance of public and private banks. However, the findings of this previous empirical investigation about the impact of the CAMEL strategy on the bank's financial performance are conflicting and unclear. Thus, no accepted hypothesis exists to this day. This makes the topic still open to further investigation (Thisaranga & Ariyasena, 2021).

The CAMEL model is a technique that may be used to forecast future trends and relative risk as well as assess performance in the banking industry. It is incredibly accurate, efficient, and effective. Focusing on financial performance is made possible by calculating CAMEL ratios. Five important performance parameters make up the acronym CAMEL. A stands for asset quality, M for management effectiveness, E for earnings potential, L for liquidity condition, and C for capital sufficiency.

Financial statements are sometimes used to analyze a company's profitability alone, rather than to analyze the total functioning of the organization. The performance of the banking industry is thought to be a perfect reproduction of economic activity. One of the best indicators of the health of the economy is the degree of development of the financial sector. The risks include those associated with operations, credit, foreign exchange, operations, insolvency, interest rates, and liquidity, among other factors. Some financial firms do poorly even when analyzed using the CAMEL technique. In a similar vein, it appears that financial organizations do not have a trustworthy yardstick to assess their financial performance. As far as the investigator is aware, not enough research has been done on the relationship between the CAMEL model and profitability in the banking industry in Nepal. Anything the inquiry reveals is insufficient, if not contradictory. On the other hand, because state-owned businesses

(SOEs) in Nepal are consistently losing money and offering subpar services to the general public, they have turned into a financial and administrative burden for the nation.

A supervisory grading system called CAMELS was initially created in the United States to classify a bank's general state. It is used by all banks and credit unions in the United States and is also enforced by different financial supervisory authorities abroad.

Capital adequacy is the CAMEL model's first essential element. It's used to figure out how much operating loss the bank can afford. It keeps the depositors' faith in the bank intact and prevents the bank from going bankrupt. While a weak capital base leads to various issues, a strong capital base enables the bank to maximize profits.

Bank capital is separated into two categories, Tier I and Tier II, for the purpose of evaluating capital adequacy. Tier I (core or primary) capital is made up of paid-up capital, share premium, non-redeemable preference share, general reserve fund, accumulated profit, capital redemption reserve, capital adjustment fund, and other free reserves. Reducing goodwill, fake assets, and investments in financial instruments issued by an organized firm that surpass the NRB-specified limit is necessary in order to obtain core capital. Comparably, the aggregate of the reserves for excess loan loss provision, investment adjustment reserve, exchange equalization reserve, subordinated term loan, and asset revaluation reserve constitutes Tier II (supplementary) capital (NRB, 2022). Based on the capital adequacy framework, 2007 (NRB, 2019), the Capital Adequacy Framework, 2015 mandates that commercial banks (Class A) maintain a capital adequacy ratio (CAR) of 11%, while development banks and finance firms (Class B and Class C) must maintain a CAR of 10%. Core capital ratios (CCR), capital adequacy ratios (CAR), debt equity ratios, etc. can be used to evaluate capital adequacy. The capital adequacy condition of banks is examined in this study using the capital adequacy ratio (CAR, or total capital as a percentage of risk-weighted assets).

Asset quality is a crucial component of the CAMEL model, which is used to assess management effectiveness and banks' performance (Young, 1997). It acts as a barometer for banks' financial solvency. Poor asset quality results in financial problems and weakens the capital basis. Loans and advances make up the bulk of the

asset side of the balance sheet, and the profits from these loans and advances account for a sizeable portion of the financial institutions' income statements. Defaulted loans are a loss-making venture for banks because they don't make money. Significant losses are frequently a possibility for banks with underperforming assets. Fund-based loans to a single borrower are limited to a maximum of 25% of the borrower's primary capital. In a similar vein, a bank may lend up to 50% of its core capital as a non-fund basis loan (NRB, 2019).

The NRB mandates that BFIs make a distinction between loans that are performing and those that are not. Both watch list and pass loans are regarded as performing loans. Performance loans are ones that are current and haven't been past due for three months or less; non-performing loans are those that have been past due for more than three months. Non-performing loans comprise three categories of loans. They signify a bad debt or loss and are of low quality and uncertainty. 1.3% of pass loans, 5% of loans on watch lists, 25% of substandard loans, 50% of questionable loans, and 100% of bad loans need banking institutions to maintain reserves (NRB, 2022). Loan loss provisions set aside for performing loans and non-performing loans are referred to as general loan loss provisions and particular loan loss provisions, respectively.

The efficacy and efficiency of the bank's management are measured by management efficiency. The ability of any company to manage its business affairs can determine whether it succeeds or fails. Managerial effectiveness will increase in parallel with organizational success, and vice versa. The effectiveness of the bank's management can be evaluated in a variety of ways. The search for an independent indicator is quite difficult. Wheelock & Wilson (2000) do, however, include managerial efficiency methods that are also widely applied in practice.

The expense ratio, earnings per employee, cost per loan, average loan size, credit to core capital, and deposit ratio can all be used to gauge the quality of management. The ability of BFIs to convert deposits and core capital into high-yielding loans is demonstrated by the CCD ratio, which measures credit to core capital and deposits. This study employs the CCD ratio (credit as a percentage of core capital and deposits) to evaluate managerial effectiveness.

Earning is another important CAMEL model component. It is used to determine whether the bank can make enough money to meet capital providers' necessary rate of

return and to project future revenue growth. Stakeholders are more likely to trust banks when their earnings are consistent and rising (Grier, 2007). Financial institutions need to make enough money to fund the expansion of their asset base, build up enough reserves, and boost shareholder value.

There is a negative correlation between profitability and financial trouble. Return on assets (ROA), return on equity (ROE), operating profit margin, net profit margin, and absolute measures such as interest income, net interest income, non-interest income, net non-interest income, non-operating income, and net non-operating income are examples of frequently used profitability indicators. Return on equity (ROE) and return on assets (ROA) are the primary metrics used to assess profitability. This study examines ROA (net income as a percentage of total assets) and ROE (net income as a percentage of equity) to evaluate the profitability of BFIs.

Not to mention, the final CAMEL model parameter used to assess performance is liquidity. The ability of a bank to meet its own loan obligations as well as its short-term obligations is referred to as "liquidity". If FI depositors suddenly withdraw their funds, there is a liability-side liquidity risk; if commitment holders suddenly ask for loans, there is an asset-side liquidity risk. Jenkinson (2008) states that for financial institutions (FIs), neither type of liquidity risk is desirable. Chaplin et al. (2000) found a negative correlation between the amount of liquid assets and the risk of distress. Arif and Anees (2012) offer empirical data regarding liquidity in a similar manner. While a bank's profitability is threatened by high liquidity, its solvency is threatened by low liquidity. Thus, there needs to be a trade-off between profitability and liquidity.

The two most significant sources of liquidity are stored liquidity and purchased liquidity. The liquidity status of BFIs is assessed using a variety of criteria, including the loan to total deposit ratio, the cash and equivalents to total assets ratio, the NRB balance to total deposit ratio, and the liquid assets to total deposit ratio. This study uses liquid assets as the total deposit ratio to evaluate liquidity position. Cash balances, bank accounts with the NRB and other BFIs, money on hand, placements good for ninety days, and investments in government securities are examples of liquid assets. Repayable loans up to ninety days are subtracted from liquid assets to determine net liquid assets (NRB, 2016).

1.2 Problem Statement

Financial institutions' overall performance may not fairly represent their financial statements. Thus, an important query arises: do these fairly depict the overall success of the company? Determining the overall situation, as well as the banks' strengths, weaknesses, opportunities, and threats, is therefore essential. For these reasons, CAMEL is one of the many experts and financial organizations from around the globe that develop various financial and statistical tools and procedures.

Because the banking sector is interconnected with every other sector, it is a mirror of the overall economy. Right now, the banking sector in Nepal is collapsing. Among the many commonly asked questions are: how can banks report such huge profits when most firms are having difficulty? This study aims to assess the overall performance and financial health of selected commercial banks within the CAMEL framework using the following research questions.

- I. What is the status of financial performance of commercial banks of Nepal?
- II. Is there any relationship between CAMEL variables with financial performance of commercial banks of Nepal?
- III. What is the impact of CAMEL variables on financial performance (ROA & ROE) of the commercial bank of Nepal?

1.3 Objectives of the Study

Analyzing commercial banks' financial performance within the CAMEL framework is the study's main goal. The following particular goals are the focus of the study:

- i. To analyze the current status of financial performance of commercial banks of Nepal.
- ii. To examine relationship between CAMEL variables with financial performance of commercial banks of Nepal.
- iii. To examine the impact of CAMEL variables on financial performance (ROA & ROE) of the commercial bank of Nepal.

1.4 Rationale of the Study

The study looks at the soundness of the banks' finances as well as a number of financial performance metrics. The primary contribution of the study is in identifying and comparing banks' financial standing using the CAMEL framework. This study will provide vital information to the management on the performance capability of their banks. It provides both prospective and existing shareholders with an accurate view of performance, which is useful for calculating risk and return and allocating capital. For depositors, member bankers, and other stakeholders, the study can reveal the bank's overall performance, which is helpful.

For people who are keen to do further research in this area, it is really beneficial. The primary objective of the study is to ascertain, through a review, its future value for scholars, research teams, and academics.

1.5 Limitations of the Study

A broad perceived inquiry of a topic conducted to address believed research concerns is called research. Every study has certain restrictions. Nobody is ever truly free from restrictions. The following are the assumptions and limitations of the current study:

- Other macroeconomic variables also affect bank profitability, but this study does not take these into account. There are only CAMEL variables present.
- The analysis covers the fiscal years 2013/2014 to 2022/2023.
- It is believed that the information provided in the yearly reports is accurate and true.
- The only factors used to assess financial performance were ROA and ROE.
- In Assets Quality, just the NPL ratio was examined.
- In terms of liquidity, only CBBR & GSR were examined.
- Limited financial and statistical instruments are employed for analysis.

CHAPTER II

LITERATURE REVIEW

A thorough study of the theoretical and empirical literature on the impact of particular banks and the performance of commercial banks was conducted, covering both established and emerging economies. Comprehending this correlation from both developed and historical perspectives would aid in formulating the approach for conducting an empirical examination of the Nepalese market.

2.1 Theoretical Review

The significance and role of financial success have been profoundly impacted by contemporary financial appraisal. These days, the best way to describe finance is as always evolving with new concepts and methods. The company's efficient management is the only one who can meet the objectives. A bank becomes riskier if it does not retain enough equity capital. A bank must employ additional debt with high fixed costs if its equity capital is insufficient. Therefore, a company's capital structure needs to have enough equity capital.

The primary goals of banks are to deploy into the most lucrative industry and to take in as many deposits from their clientele as they can. A bank cannot make money if it does not use the resources that it has amassed. Collection of resources, investment portfolio, loans and advances, working capital, fixed asset management, etc. are all included in the bank's resource mobilization management. It evaluates how well the bank uses its resources to what extent. Financial statements should be used to assess the bank's financial indicator in order to gauge its success in a number of areas.

2.1.1 Financial Performance

A key step in a company enterprise's financial decision-making process is the analysis of financial performance. Ineffective financial management has a negative impact on profitability, turnover, and liquidity. To guarantee the proper operation of an enterprise, it is necessary to measure its financial status on a regular basis. A commercial enterprise's primary strengths and weaknesses can be determined with the use of financial analysis. In order to maximize shareholder wealth, a firm must have sufficient funds to meet its obligations, a reasonable accounts receivable collection period, an effective inventory management policy, sufficient plant property and

equipment, and an adequate capital structure. All of these factors are indicated by this indicator. In addition, financial analysis can be used to evaluate a company's ability to continue as a going concern and ascertain whether the risks taken are yielding a reasonable return on investment (Grier, 2007).

An arbitrary indicator of how successfully a company can turn resources from its main line of activity into income. This word can also be used as a general indicator of a company's overall financial health over a specified time period and to compare similar companies within the same industry or to compare industries or sectors collectively. Financial statements and the important relationships between the various components in this respect are the focus of financial performance analysis. "The process of analyzing financial statements to gain a better understanding of a firm's positions and performance is known as financial performance analysis" (Pandey, 2010).

Measuring a company's financial success entails putting its operations and policies into numerical terms. The firm's return on investment, return on assets, value contributed, and other metrics show these outcomes. Financial success can be measured in a variety of ways, but all metrics should be viewed collectively. Together with total unit sales, line items like revenue from operation operational income or cash flow from operation can be used. Moreover, the analyst or investor would want to go a little deeper into the financial statements to see any lowering debt or margin growth rates (Jha and Hui, 2012).

The following lists seven methods for evaluating a company's financial success: (<[http://www.businessdictionary.com/Financial performance](http://www.businessdictionary.com/Financial%20performance)>)

◆ **Profit**

Profit or loss is the accumulation or depletion of wealth over a predetermined period of time. The terms earning, net income, and the bottom line are alternative terms for profit. Owner compensation is a necessary component of a complete profit calculation. More revenue is advantageous.

◆ **Cash flow**

Cash flow is the difference between how much money you started with and how much you end up with at the end of a specific amount of time. Positive cash flow is preferable.

◆ **Balance sheet strength**

In general, the strength of a company's balance sheet is shown by the ratio of its assets to its liabilities at a certain point in time. A stronger balance sheet is the product of having more assets (what the company owns) and fewer liabilities (what the company owes). A more robust balance sheet is better.

◆ **Risk**

It's dangerous to do business; we could miss payments from clients or fall behind on debt. Risk is frequently defined as the result of likelihood times the event, such as our company being sued, etc. the probability of something times the harm it could do. Either earning more money with the same level of risk or earning the same dollar profit with less risk is a desirable thing. Thus, a link between risk and reward exists.

◆ **Owner's Time invested**

How many hours do you dedicate to your business each day, week, month, and year? It is desirable to profit by the same amount with less effort.

◆ **Business owner's Net Worth**

A business's objective is to generate wealth for its shareholders in terms of finances. Does the owner own significant holdings in real estate, retirement accounts, and other assets? Has the money that the owner has taken out of the company boosted their net worth? For a complete picture of the financial performance of a small business, consult the owner's personal balance sheet.

◆ **Valuation**

What is your company's fair market value? Is it going up or down? Higher firm valuations are preferable when it comes time to execute your exit strategy because they generate wealth for their owners in addition to present revenue. This final method of assessing financial health is completely unrelated to businesses.

The steps of analysis are as follows:

1. Selection that is pertinent to the choice.
2. The chosen data is arranged to emphasize the important connection between the financial yardsticks.
3. Interpretation, inference, and conclusion-drawing.

A methodical approach to financial indicators is ratio analysis, which provides information about a company's strengths and weaknesses as well as its past performance and current financial situation. After calculating several ratios, we must compare the results to a predetermined benchmark and form a judgment.

Finding the important operations and financial statement is the process at hand. Determining the effectiveness and performance of the company's management as shown in the financial records and reports is the aim of this kind of analysis (Ngoboka, 2020).

The process of evaluating a company's financial health by creating a strategic link between the profit and loss statement, balance sheet component, and other operational data is known as financial analysis (Parikh, 2018).

2.1.2 Financial Statement Analysis

The Nepal Stock Exchange gathers and examines financial statements released by listed companies in order to determine the financial performance of the relevant company.

Profit is the primary goal of each company entity that is founded. The same goals also led to the establishment of the bank. For a business to survive over the long run, profit is essential. All investors desire to place their capital in productive ventures. The profitability, strengths, and weaknesses of a corporation are indicated by its financial statement. As a result, financial statement analysis aids decision-makers in determining the positive or unfavorable state of a business concern, whereas financial ratio analysis represents a company's financial position.

Financial ratio analysis's primary goal is to identify a company's strengths and shortcomings by rearranging and analyzing the data found in financial statements, breaking them down into their component parts, and then closely studying their

contents. Financial managers can utilize this as the foundation for forecasting budgeting techniques to plan future financial requirements (Rahman and Nitu, 2018).

According to Roman and Sargu (2013), the main focus of financial statement analysis is the relationship between the numerous financial components in a business as revealed by a single set of statements and the examination of these factors' patterns as demonstrated by a series of statements.

Using fundamental financial statements, financial analysis determines the firm's strengths and weaknesses in terms of finances. A ratio serves this objective by aiding in the study of the firm's financial performances.

An overview of the company's financial operations is given by the financial statement. Consequently, a thorough analysis of a company's financial statement, which is a priceless record, can reveal a lot about it. Financial analysis thus benefits greatly from the examination of financial statements. Additionally, he emphasized that one of the main instruments for analyzing financial statements is the ratio analysis (Wheelock and Wilson, 2000).

By correctly establishing a relationship between the balance sheet and profit and loss accounts, financial analysis aims to uncover the firm's financial strengths and weaknesses (Young, 1997).

Ratio analysis is the methodical application of ratios to financial performance in order to identify a firm's strengths and weaknesses as well as its past performance and present financial status (Solanki and Aggarwal, 2022).

Ratios can also be evaluated by contrasting them with those of other companies in the same industry and, when applicable, with the industry average. Recent empirical testing suggests that financial ratios, and bankruptcy in particular, can be successfully utilized as predictors of certain occurrences. Financial ratio analysis is now more objective and scientific than it has ever been because to these tests (Persson and Ridderstrom, 2014).

A variety of groups, including creditors, shareholders, investors, management, the government, and so forth, use financial statement analysis and techniques. Financial statements are important since they show a company's overall performance as well as its potential for growth and solvency.

The process of analyzing financial statements' component pieces in order to better comprehend a company's financial health is known as financial analysis. It can be carried out by multiple parties, but the type of analysis will vary based on the users' goals. Financial statement analysis educates on future expectations but does not provide an exact answer.

The process of analyzing financial statements entails comparing a company's ratio to that of other companies operating in the same industry, as indicated by the company's industry categorization. According to Roman and Sargu (2013), the analysis is typically used to ascertain the firm's financial status in order to identify its existing strengths and weaknesses and to recommend steps that would allow the firm to capitalize on its strengths and address its weaknesses.

The method of determining a company's financial strengths and weaknesses through the establishment of a relationship between the items on the balance sheet and the profit and loss account is known as financial ratio analysis. It may be handled by the company's management or by persons outside the company (Grier, 2007).

The financial statement's primary number and the important link between them were the focus of the financial ratio analysis. Since management is in charge of making the most efficient and effective use of the company's resources and financial condition overall, they are typically interested in all facets of the financial ratio analysis.

Every company can assess its financial soundness in terms of profitability, ability to pay interest, debt maturity dividend policy, capital structure, and other factors by examining its financial statements.

When it comes to operating financial issues that the company is experiencing, financial ratio analysis is largely utilized to confirm these issues. However, it is important to differentiate between the root causes of these issues and their symptoms (Afroj, 2022).

One effective technique for financial ratio analysis is ratio analysis, which shows the advantages and disadvantages of various business concerns. It is a crucial method of illustrating the significant connections between the financial statement's constituent parts. Ratio analysis is therefore a crucial instrument for analyzing and interpreting financial statements. Thus, the idea is to break down the financial statements into their

constituent parts according to the stated goal and develop a connection between these parts and the item totals on the other hand. In addition, a thorough analysis of numerous significant variables over the previous few years is conducted in order to have a comprehensive grasp of the evolving profitability and financial state of the company.

2.1.3 Balance Sheet

Financially speaking, the balance sheet is the most important statement. It shows the situation of a company's finances or operations at a specific point in time. Any company's balance sheet serves as the foundation for its financial performance analysis. A balance sheet provides details about a company's assets, liabilities, and owners' equity. A balance sheet gives an overview of the company's finances at the end of the fiscal year.

The balance sheet is a crucial instrument for analyzing financial performance, as is well known. The following are the functions that the balance sheet eliminated:

- It gives concise summary of the firm's resource obligations.
- It is a measure of the firm's liquidity.
- It is a measure of the firm's solvency.

2.1.4 Profit and Loss Account

Bankers and other creditors place a great deal of importance on the balance sheet since it shows the firm's financial solvency and liquidity, whereas the profit and loss statement shows the firm's earning potential. The profit and loss account serves as a scoreboard for the company's overall performance throughout time. The profit and loss account is a flow statement since it shows the operations results for a certain period. The balance sheet, on the other hand, is a stock or status statement that displays the owners' equity, liabilities, and assets at a specific point in time.

A company's profit and loss statement provides an overview of its earnings, costs, and net income. It functions as a gauge for the company's profitability. The following is a description of the purposes of the profit and loss account:

- a. It provides a succinct overview of the company's earnings and outlays for a given time frame.

- b. It gauges the profitability of the company.
- c. It informs owners and other stakeholders about the outcomes of the company's operations.

To sum up, financial data is necessary for financial analysis, planning, and decision-making. Employers, suppliers, customers, owners' management, and society at large are among the users of financial data.

The fundamental tools for analyzing financial performance are the financial statements, such as the P/L account and balance sheet.

2.1.5 Income Statement

The purpose of an income statement is to show how a business performed during a given time period, such as a year, month, or quarter. The income statements display the business revenues and expenses that arise from the successful running of the company. It serves as the "Scoreboard" for the company's performance throughout a specific time frame. It displays a company's net income or loss for a specific time period together with a summary of its revenues and expenses. According to Pandey (2010), the income statement is a reliable indicator of the company's profitability.

2.1.6 Statement of Retained Earning

This declaration defines the Company's policy about the portion of profit to be preserved for future use and the earnings to be paid as dividends. It also describes how retained earnings and shareholders' equity are impacted by profit, dividends, and other transactions.

The financial statement of the relevant company serves as the foundation for financial analysis. The following is a description of financial analysis's goals:

- To obtain all the data that will be useful while making decisions.
- To assess management efficacy and overall performance.
- To determine the shortcomings and inadequacies.
- To promptly implement remedial measures to address such shortcomings and enhance performance.

- To assess the potential effects of different courses of action.
- To learn everything there is to know about the potential for meaningful change.

2.1.7 Tools of Financial Statement

2.1.7.1 Ratio Analysis

The financial performance of a chosen bank can be examined using the following crucial financial ratios:

(i) Liquidity Ratio

A liquidity ratio evaluates a company's capacity to pay its current debts. Although cash budgets and cash and funds flow statements must be prepared in order to analyze liquidity, liquidity ratios offer a quick way to gauge a company's level of liquidity by relating cash and other current assets to current liabilities. A company should make sure that it has neither too much nor too little liquidity. When a firm can't pay its debts because it doesn't have enough cash on hand, it can become untrustworthy, lose the trust of its creditors, or even get into legal hot water and have to close down. High levels of liquidity—idle assets—are likewise undesirable. As a result, finding the right balance between high and low liquidity is essential.

(ii) Leverage Ratio

The ability of the company to pay off its debt is of more significance to short-term creditors like lenders and raw material suppliers. Long-term creditors, on the other hand, are more focused on the company's long-term financial stability. These creditors include financial institutions and holders of debentures. In actuality, a company's financial condition should be solid both now and in the future. Capital structure ratios or financial leverage are computed to assess the company's long-term financial status. These ratios show how the corporation finances its assets through a combination of debt and owners' equity. Using debt to increase a shareholder's return is referred to as financial leverage, financial gearing, or trading on equity.

(iii) Activity Ratio

Activity ratios are used to gauge how well assets are managed. These ratios are used to assess how well the bank uses and manages its resources. Because they show how quickly assets are being transformed or turned over into sales, these ratios are also known as turnover ratios.

(iv) Profitability Ratio

In order to endure and expand over an extended duration, a business needs to generate revenue. The difference between revenue and expenses over a given length of time is called profit. Profit is the company's ultimate product, and without enough profit, it will not be able to survive. As a result, the financial management needs to constantly assess the business's profitability and efficiency. The profitability ratios are computed to assess a company's operational effectiveness. In addition to the company's management, creditors and owners are also curious about the firm's prospects. Only when the business generates sufficient earnings do creditors desire to receive regular debt repayment and interest payments.

(v) Credit Ratio

To evaluate the banks' credit standing, credit ratios are computed. It displays the percentage of deposits that are used for credit and the amount that is left over after cash and bank balances are deducted for quick payments.

2.1.7.2 Funds Flow Statement

The description of changes in an organization's financial situation, known as a funds flow analysis, identifies solely the sources and uses of funds between two balance sheet dates. It is ready to unearth the details that financial statements omit to fully explain. It explains the sources of funding and the purposes for which they were allocated.

The purpose of the statement is to provide an overview of the changes in owner's equity as well as the changes in assets and liabilities brought about by financial and investment transactions that took place during the period. It also reveals how the company used its financial resources at that time.

The way a funds flow statement is prepared primarily depends on how the word "fund" is employed. There are three distinct concepts related to funds: working capital, total resources, and cash. Cash idea states that the terms "fund" and "cash" are interchangeable. The term "total resources" refers to all of the assets and resources in a fund. In contrast to the previous notions, the working capital concept of a fund has received greater recognition. The term "fund" solely refers to working capital in the last concept mentioned. Consequently, while performing a funds flow analysis, any transaction that raises the quantity of working capital is considered a source of funding. An application is made for any transaction that reduces working capital. But, any transaction that affects current liabilities or current assets result in modifications.

2.1.8 CAMEL Rating

Financial performance, which is a key component of finance risk management, is defined more broadly as the extent to which financial goals are being or have been achieved. It is the process of calculating the financial impact of a company's operations and policies. In addition to comparing similar businesses within the same industry or comparing industries or sectors in aggregates, it is used to assess a firm's overall financial health over a certain time period (Ahsan, 2016).

The abbreviation for the worldwide financial institution rating system, also referred to as the "camel rating system," was modified in January 1997. On November 13, 1979, the Federal Financial Council approved the CAMEL rating, commonly referred to as the Unified Financial Institutions Rating System. The National Credit Union Administration then adopted the CAMEL rating in October 1987. Because dependability, profitability, and liquidity are critical in evaluating an organization's performance in this context, the CAMEL model, which emphasizes capital adequacy, asset quality, management quality, earning ability, and liquidity as criteria for assessment, can be used as a trustworthy tool to evaluate the soundness of financial firms (Baral, 2005).

Although each component of the CAMEL rating system is subject to subjective judgment marks, the study just offers direction and sets forth the basic ideas around which the composite rating is constructed. The examiner may consider the circumstances of the other patients; this is not prohibited by the study. In addition to providing the framework for crucial supervisory activity, the standard grading system

enables fair comparison and assessment of institutions overseen by the three US supervisors. Each component of a bank's financial state is rated in addition to the overall evaluation. One is the lowest rating and five is the best. Examiners sometimes view the camel ratings as a summary of the private bank supervisory data they get about an institution's overall financial situation, even though the research also considers publicly available data. The bank manager serves as a gatekeeper for sensitive information while they are on the premises. These data sets include information on problematic loans, which is useful for evaluating banks' financial standing and keeping an eye on how well they're adhering to legal and regulatory obligations. A supervisory rating of banks' general conditions, or what is known as a CAMEL rating, is one significant result of such an inspection (Kandel, 2019).

The idea that the NRB in Nepal carries out the supervisory duty of evaluating banks' financial health by assigning them CAMEL ratings is still untrue. The internal rating method CAMEL is used to assess credit union soundness, share insurance fund risk, and credit unions that require additional monitoring. Additionally, Analysts use CAMEL ranking to distribute examiner resources. Compared to credit unions with string scores of 1 and 2, institutions with poor CAMEL composition ratings of 4 and 5 require a lot more exam time or budgetary control. The rating and description are as follows in the table below:

Table 1

Rating and Descriptions

Rating	Description
Rating 1	It indicates strong performance and risk management processes that clearly identify all risks and use mitigating strategies to address any concerns.
Rating 2	It reflects satisfactory performance and risk management techniques that identify and mitigate the majority of risks.
Rating 3	It represents performance that has some flaws and is of concern to the supervisor. In light of the size, complexity, and risk profile of the bank or credit union, risk management methods may fall short of expectations. Important risks may not be recognized or adequately mitigated.

Rating 4	<p>It refers to subpar performance that causes a severe concern for the supervisor. In general, risk management procedures are unsuitable given the size, complexity, and risk profile of banks and credit unions. Crucial performance indicators are probably negative. If such behavior continued, it would be anticipated that it would create situations that would endanger the bank's or credit union's capacity to stay in business. There could be a serious lack of adherence to rules and laws. The board of directors and management are failing to adequately address the issues and weaknesses. Although it is not yet imminent or pronounced, there is a strong chance for failure. This category of banks and credit unions needs rigorous supervision.</p>
Rating 5	<p>It considers this to be significantly inadequate and unsatisfactory performance that necessitates immediate corrective action. The viability of the bank or credit union is immediately threatened by such performance, whether it occurs alone or in conjunction with other flaws. Management lacks the competence or willingness to control or resolve the volume and severity of issues. The failure of the banks and credit unions in this category is quite likely, and it will probably necessitate either liquidation and payout to shareholders or some other type of emergency assistance, merger, or purchase.</p>

2.1.9 The Capital Buffering Theory

As per the buffer theory of capital, which was put forth by Jokipi and Miline in 2011, a bank that is nearing compliance with the regulatory minimum capital ratio might be inclined to enhance its capital and decrease its risk to evade the penalties that would arise from noncompliance. Specifically, banks like to maintain a buffer of excess capital to reduce the possibility of slipping below the statutory capital requirements, especially if their capital adequacy ratio is very variable. The study evaluated capital sufficiency norms using loans and advances, shareholders' money, total assets, and client deposits; profit after tax and earnings per share were utilized to assess bank performance.

The study, which made use of OLS estimating methodologies, demonstrated the significant influence that capital adequacy standards have on bank performance. Capital adequacy is a critical factor to consider when examining the financial performance of deposit money banks in Nigeria. One of the numerous functions of

sufficient capital is to offer protection against losses that aren't covered by current earnings. It also increases the trust of depositors, the general public, and Nigeria's regulatory agencies.

The study's empirical conclusion shows that deposit money banks with high capital ratios can profit financially since they have access to more capital and are perceived as being safer. Therefore, the higher the capital ratio, the more financially successful Nigerian deposit money banks are. As the results of this study show, capital adequacy has a positive effect on deposit money banks' performance, it can be emphasized that capital adequacy is crucial for enhancing the soundness and safety of deposit money banks in Nigeria. This shows that by appropriate and good management of the bank capital, effective deposit management can encourage and promote higher financial performance of deposit money institutions.

2.1.10 Trade-Off Theory

A corporation evaluates costs and advantages to determine how much debt and equity financing to use, according to the trade-off theory of capital structure. In 1973, Kraus and Litzenberer developed this idea by analyzing the trade-off between the tax benefits of debt and the bankruptcy's deadweight costs. One advantage of debt financing is that it can be taxed; on the other hand, using debt for financing might result in costs associated with financial trouble.

The rise in leverage among businesses listed on the Swedish Stock Exchange can be explained by the traditional trade-off theory. An industry-comparing approach is used to compare the explanatory power of the trade-off theory across industries after inter-industry leverage differences have been verified. A partial adjustment model is used to evaluate how well a firm is adapting toward ideal leverage targets.

This theory proposes two methods for determining target advantage. To begin with, firms' optimal leverage is justified based on firm-specific attributes. Second, the industry norm is used to approximate the ideal capital structure. The findings indicate that there is a notable variation in leverage across different industries and that the increase in leverage in large and midcap companies may be explained by the trade-off theory. Persson and Ridderström (2014), however, came to the conclusion that the

tradeoff framework does not provide a comprehensive rationale for enterprises' intended leverage at the industry level.

2.2 Empirical Review

The process of learning by observation and experience, both direct and indirect, is called empirical review. Empirical data can be analyzed quantitatively or qualitatively. The study, which is based on CAMEL concepts, focuses on the rating system that banks and other financial institutions use to evaluate the company's financial performance during its fiscal periods.

When issuing financial instruments (debentures, rights shares), the banking sector prudently uses CAMEL ratings for appraisal and other purposes, such awards. A few publications on CAMEL have been analyzed in this study, and they all address how the financial industry uses this technique to evaluate risk, gauge managerial efficacy, and make future plans. A summary of the most important papers on this topic is provided below.

Magoma et al. (2022) examined the financial results of seven commercial banks that were listed between 2016 and 2020 on the Dares Salaam Stock Exchange (DSE). The financial stability of these publicly traded institutions was thoroughly assessed using the CAMEL model. The letters CAMEL stand for capital adequacy, asset quality, earnings quality, management effectiveness, and liquidity. The cause-and-effect relationship between the explanatory variables (capital adequacy, asset quality, management efficiency, earning quality, and liquidity) of commercial banks listed at the Tanzanian Stock Exchange (DSE) and the response variable (bank performance) was fully investigated using an explanatory research design. Annual reports and audited financial statements were the sources of secondary data that was taken out. Pre-regression analysis was carried out using the Durbin-Watson and multi-collinearity tests. Ultimately, the study's findings were obtained through the application of correlation and linear regression analysis. The primary limitation of this research was its limited use of CAMEL analysis, which was limited to seven Tanzanian commercial banks that were listed between 2016 and 2020 on the DSE.

The study's findings showed that capital sufficiency and managerial effectiveness had the biggest effects on Tanzanian commercial banks listed on the DSE. This study's

practical ramifications showed how to measure Tanzania's listed commercial banks' performance using CAMEL analysis. In order to determine ways to improve performance outcomes for Tanzania's listed commercial banks, this model can be utilized as a benchmark. Finally, the study showed how to measure the performance of Tanzania's listed commercial banks using CAMEL analysis.

Solanki and Aggarwal (2022) assessed the impact of bank-specific attributes on private sector banks. In this study, multiple regression analysis was employed. The dependent variable in their study was ROA. The independent factors in the study were efficiency, growth rate, expense management, liquidity risk, solvency, and credit risk. Secondary data was collected from the financial statements of a subset of banks during a 12-year period (2008/09 to 2020/21). The study concluded that a sample of Indian private sector banks' financial performance was positively impacted by capital adequacy, solvency, and liquidity risk. There were drawbacks to expense management and liquidity risk.

The effect of CAMEL on the financial performance of banks in developing nations was assessed by Abebe (2022). Thirteen banks were selected as a study sample based on the accessibility and availability of their data for the post-IFRS implementation period of 2018 to 2021, which covers 22 institutions. Ordinary least square regression (ROA) has been utilized to ascertain the extent to which the independent factors—capital adequacy, asset quality, earning capacity, managerial effectiveness, and liquidity—have an effect on the dependent variable. The research findings indicate that capital adequacy, asset quality, and management effectiveness have a statistically significant impact on performance as measured by return on assets. Earning potential and liquidity have no appreciable effect on ROA performance. Banks should concentrate on having sufficient capital, excellent assets, and efficient management in order to improve performance.

From 2010 to 2015, Afroj (2022) evaluated the strengths of 35 banks. An additive value function with a CAMEL rating (capital strength, asset quality, managerial efficiency, earning ability, and liquidity) has been used to assess the financial health of banks. The data was then examined using regression analysis. According to the report, Bangladesh's Islamic banks have stronger financial standing and perform

better than banks with greater liquidity. Private banks are more financially stable based on their evaluation of CAMEL measures.

A 2021 assessment of Nepali PEs' financial performance was conducted by Shrestha & Pokharel. Both descriptive and quantitative research methodologies were used in the study. To obtain secondary data for particular PEs, the websites of the Nepal Rastra Bank annual report were chosen. In order to assess the data, the mean was computed. Profitability ratios were used in the data analysis process. The analysis indicates that the financial performance of most Nepalese public firms is quite poor. They've been ailing for a while.

The performance of HDFC and ICICI Bank, the top two private sector banks in India, was evaluated by Pattanaik and Patjoshi in 2021. The study was conducted by keeping an eye on five fiscal years, from 2015–16 to 2019–20. The CAMEL model served as the foundation for the analysis of this study. The primary secondary source of the data was the verified yearly report. A number of financial ratios that are outlined in the CAMEL framework were taken into account when assessing HDFC and ICICI Bank's performance. The study's findings showed that both banks are operating economically and adhering to the necessary legal requirements, however HDFC Bank came out on top in this comparison.

Thisaranga and Ariyasena (2021) investigated the impact of the CAMEL features on the domestically listed commercial bank's performance in Sri Lanka from 2014 to 2017. The 11 commercial banks that are listed on the Colombo Stock Exchange made up the entire study's population. Amana Bank and Cargill's Bank were chosen as samples due to insufficient and inaccessible data. Secondary data were used in the empirical analysis of this study. Data from audited annual financial accounts were collected, and various regression analysis methods were applied to assess the information. They found that whereas earning ability had a positive significant effect, management efficiency had a negative significant effect on bank performance. Liquidity has a negligible positive impact, but capital adequacy and asset quality have a negligible negative impact.

Ngoboka & Gatauwa (2020) investigated the impact of the CAMEL rating model on the financial performance of Radwan's commercial banks from 2014 to 2018. Eleven commercial banks were investigated for this investigation, and a census was

conducted. Secondary data were used in the study. In order to ascertain accurate, reliable, and valid elements associated with phenomena, a descriptive study approach was employed. Using the CAMEL grading system, the stability and health of these financial institutions were evaluated. To examine the data, regression and correlation were applied. They concluded that the financial outcomes of Rwandan commercial banks were influenced by CAMEL variables. Sufficient capital, superior assets, and efficient management all make a statistically significant contribution to the explanation of ROA. Yet, there is only a marginally negative correlation between earnings and liquidity situation.

In 2019, Kandel began work on a study named "Analysis of Financial Performance of Nepalese Commercial Banks Using CAMEL Approach." The goal of the study is to examine the capital sufficiency, asset quality, management quality, earning potential, and liquidity situation of the commercial banks. The CAMEL model has been used to assess the ROA. Financial ratios were computed through the application of the CAMEL approach and secondary data. The population of the study was publicly reported to consist of 63 ASEAN banks. Regression and correlation analysis were the approaches employed for data analysis. Having enough money and earning quality are the most significant factors influencing both ROA and ROE, according to the study. Bank performance is also moderated by liquidity and asset quality. However, management competence has little effect on ROA.

Rahman and Nitu (2018) examined whether state-owned banks and private commercial banks in Bangladesh differed in terms of their financial performance. The researcher employed the CAMEL technique to support this claim. Six banks total, one from each category, have been chosen as a sample to provide population data. Five years of data, from 2010 to 2014, were gathered for the study. A number of statistical techniques were employed to analyze the data, most notably the independent sample t-test. This study discovered no variations between these two sectors in the other CAMEL aspects, but it did find substantial variances in the areas of capital adequacy and liquidity management.

Parikh (2018) looked at how different ratios have been applied and interpreted to show the performance of banks and how this specific model takes into account a lot of different factors, which makes it a widely recognized model in the current

environment. For simplicity of comparison and data analysis, the CAMEL model was used to assess the performance of two public banks and two private banks. The annual reports of the banks that were the subject of the investigation provided the data. And in accordance, ratios are calculated and evaluated for each bank. This study came to the conclusion that ICICI was leading the field in terms of the capital adequacy ratio criterion, and that the company's excellent performance in debt-equity and advances to assets may have contributed to this.

Ahsan (2016) evaluated the financial performance of Islamic Bank Bangladesh Limited, Export-Import Bank of Bangladesh Ltd., and Shahjalal Islami Bank Limited, three distinct Islamic banks that were involved in Bangladesh's banking sector over an eight-year period (2007–2014). The majority of the data used in this quantitative, descriptive, analytical, and empirical study came from bank financial reports that are available to the general public. As a result, the CAMEL rating analysis method was eventually used. According to the study's findings, all of the chosen Islamic banks have strong positions and are strong overall on their composite rating systems in terms of capital sufficiency, asset quality, management quality, income potential, and liquidity position.

The financial performance of fourteen commercial banks between 2010 and 2014 was assessed using the CAMEL method in a paper by Mulalem (2015) titled "Analyzing the Financial Performance of Commercial Banks in Ethiopia Using the Camel Approach." The study discovered that while asset quality, management effectiveness, and capital adequacy had negative relationships with profitability or ROA, earnings and liquidity showed relationships with both profitability measures with strong statistical significance, with the exception of capital adequacy, which was insignificant for ROA.

Baral (2005) used the CAMEL model to examine the joint venture banks' performance in Nepal. The key secondary data source for the study was the joint venture banks' annual reports. The financial success of the banks was positively impacted by operational effectiveness, asset management, and bank size. The financial soundness of the joint venture banks was assessed using the CAMEL standards. The study's findings demonstrated that joint ventures had more financial stability than commercial banks. Additionally, the CAMEL components showed that,

even with no constraints, managing the joint venture banks' financial stability was not challenging, even when taking into account the possible harm to their balance sheet on a large scale.

Table 2
Summary of Empirical Review

S.N.	Author	Objective	Methodology	Findings
1	Magoma et al. (2022)	To analyze the financial performance of seven commercial banks	Explanatory	Commercial banks listed at the DSE in Tanzania are mostly affected by management efficiency and capital adequacy.
2	Solanki & Aggarwal (2022)	To see how bank-specific characteristics affect banks in the private sector.	Multiple regression analysis	Capital adequacy, solvency and liquidity risk all had beneficial effects on the financial performance
3	Abebe (2022)	To determine impact on the dependent variable, ordinary least square regression has been used (ROA).	Ordinary least square regression	Capital adequacy, asset quality, and management efficiency have a statistically significant effect on performance measured by ROA.
4	Afroj (2022)	To assess 35 banks' strengths from 2010 to 2015.	Regression analysis	Bangladesh's Islamic banks operate better than higher liquidity and are stronger financially
5	Shrestha & Pokharel (2021)	To assess the financial performance of Nepali PEs.	Descriptive & quantitative	Majority of Nepalese public enterprises have very subpar financial performance.
6	Pattanaik & Patjoshi (2021)	To appraise the performance of India's top two private sector banks, HDFC and ICICI Bank.	Quantitative research method	Both the banks are maintaining the required statutory standards and are running profitably, but HDFC Bank emerged as the winner in this

			comparison.
7	Thisaranga, & Ariyasena (2021)	To ascertain how the CAMEL characteristics have affected the performance of banks.	Correlation regression Management efficiency has a negative significant effect on bank performance while earning ability has a positive significant effect.
8	Ngoboka & Gatauwa (2020)	To find out how the CAMEL rating model has affected the financial performance of commercial banks.	Descriptive Study. CAMEL variables had an impact on the financial results of Rwandan commercial banks.
9	Kandel (2019)	To investigate the commercial banks' CAMEL.	Correlation and regression The most important variables affecting both ROA and ROE are earning quality and having enough money.
10	Rahman & Nitu (2018)	To evaluate whether there exist any difference regarding financial performance.	Independent sample t-test There exist significant differences in case of capital adequacy and liquidity management among all the elements of CAMEL.

2.3 Research Gap

Numerous studies have been undertaken on the CAMEL model, such as the one by Magoma et al. (2022) titled "Financial performance of listed commercial banks in Tanzania using the Camel model." Similarly, Solanki & Aggarwal (2022) assessed a study on the influence of characteristics unique to individual banks on the financial performance of Indian private sector banks. The goal of a study conducted by Abebe (2022) titled "Does CAMEL Affect Financial Performance of Banks in Emerging Economy? From post-IFRS Adoption audited Financial Statement" is to determine how CAMEL affects the financial performance of banks in developing nations. One can assess the significance of this work by looking at the value it contributes to the body of current literature. However, a study on the financial analyses of financial institutions that have covered our country's significant market has to be conducted in

the context of Nepal. The majority of research has concentrated on the financial analyses of relatively small numbers of banks and financial institutions. Therefore, this study will close the knowledge gap on the topic.

Additionally, a number of studies have previously been conducted on the financial analysis of commercial banks. The study report, which is situated in Nepal, mainly focuses on the profitability, leverage, and liquidity of commercial banks. These studies found that traditional financial performance analysis was used. The CAMELS framework hasn't been used in many research papers that address the banking landscape in Nepal. Furthermore, there is a dearth of studies using the most recent financial data related to the topic.

The majority of earlier research only employed one or, at most, one or two banks, which is insufficient for the CAMEL Study. The present study will assess the financial performance of the three commercial banks that were selected as an adequate sample. They are NICA, EBL, and HBL within the CAMELS architecture. In addition, the most recent data was used in this study. The researcher made the decision to investigate these subjects in order to close the aforementioned study gap.

CHAPTER III

RESEARCH METHODOLOGY

To meet the study's goals, a certain research methodology must be applied. Thus, the goal of this chapter is to provide an overview of the research methodology. In order to evaluate the data and determine the link between the various variables involved, it includes the following topics: the population and sample, the sampling process, data sources, data gathering methods, and the analytical tools.

3.1 Research Design

The financial performance of Nepalese commercial banks was described, measured, compared, and categorized using a descriptive research design. Similar to this, the cause-and-effect relationship between the CAMEL variables has been determined using the Causal Comparative Research Design.

3.2 Population and Sample, and Sampling Design

The entire number of commercial banks operating in Nepal is equal to the population, according to the analysis of the financial performance of Nepalese commercial banks. There are currently 20 commercial banks in operation in Nepal as of 2024, according to a recent study from Nepal Rastra Bank (NRB). The study's entire population consists of the 20 commercial banks. The method used to pick the sample was purposive (judgmental) sampling. A sort of non-probability sampling known as "purposive judgmental sampling" involves researchers selecting participants for their surveys from the population based only on their own judgment. For a number of valid reasons, purposive judgmental sampling has been utilized to choose Nepal's best banks. First of all, there is a substantial vacuum in the body of literature as these banks have never been examined before. Second, considering their market size and significance, these top banks in Nepal are ideal to represent the banking industry as a whole. Furthermore, I was able to recognize these leading banks as important participants because to my proficiency and understanding of the banking sector in Nepal. I could perform a thorough examination of these banks' operations, strategies, and performance by concentrating on them, giving me a full grasp of the major participants in the industry. Studying the leading banks also makes it possible to

compare and evaluate data meaningfully, highlighting areas for improvement and best practices in the banking industry.

A sample of three of the best commercial banks is selected from the entire population. The study's chosen sample banks are NIC Asia Bank Ltd., Himalayan Bank Ltd., and Everest Bank Ltd.; together, these institutions account for 15% of all commercial banks in Nepal. Data from ten fiscal years (2013/14 to 2022/23) were utilized to calculate the profitability ratio and the CAMEL variables ratio.

3.3 Nature and Sources of Data, and the Instrument of Data Collection

The study's central subject was accomplished through the utilization of secondary data. The main sources of secondary data were the annual reports of the commercial banks that were the topic of the study. The primary sources of secondary data included NRB reports, financial and banking statistics, yearly reports, and various study-related websites.

Secondary data have been used to address the main theme of the study. The primary sources for the secondary are the annual reports of the sample commercial banks. Some of the main sources of secondary data are listed below.

1. NRB reports from 2013/14 to 2022/23
2. Banking and Financial Statistics from 2013/14 to 2022/23
3. Annual reports of sample banks from 2013/14 to 2022/23
4. Google and different websites related to the study.

3.4 Method of Analysis

The econometric model and the descriptive statistics correlation matrix are used to examine the data. The descriptive statistics Mean, Minimum, Maximum, Standard Error, and Standard Deviation are used to characterize and summarize the data. To determine the correlation between the independent and dependent variables, a correlation matrix is also utilized.

Following were the different methods of data analysis that have been used in the study.

3.4.1 Financial Tools

In essence, financial instruments aid in the analysis of a company's financial strengths and shortcomings. Ratio analysis was a vital tool used in the investigation. A ratio is any connection between two or more variables. It expresses the quantitative relationship between any two numbers. Ratios can be expressed using coefficients, proportions, or percentages. A financial ratio is the mathematical connection made between two accounting statistics. Only the ratios that are directly related to the bank's investment business have been used in this study, despite the fact that there are many ratios in the financial statement to assess and understand.

3.4.1.1 Capital Adequacy Ratio

Capital Adequacy Ratio (CAR) measures how much capital a bank has in comparison to its current obligations and risk-weighted assets. Central banks and bank regulators make the decision to stop commercial banks from using excessive leverage and going bankrupt as a result.

$$\text{Capital Adequacy Ratio (CAR)} = \frac{\text{Total Capital (Tier I + Tier II)}}{\text{Total Risk weighted Assets}} \times 100\%$$

3.4.1.2 Asset Quality

Commercial banks gather money in the form of capital, deposits, etc. and then mobilize it by granting loans to people who need money to invest in different things in order to make a particular return. According to the lengths of recovery, payback, and dues, the NRB has distinct loan and advance categories in various qualities.

$$\text{Non Performing Loan Ratio (NPLR)} = \frac{\text{Total Non Performing Loan (NPL)}}{\text{Total loans and Advances}} \times 100\%$$

Where,

Total non-performing loan (NPL) = substandard loan + doubtful loan + bad loan

Total loan and advances = total performing loan + total non-performing loan

3.4.1.3 Management Efficiency

A bank's management quality indicates how sound its management is. It is known as outstanding management or skillful management and acts as a safety net for operating the bank in an orderly and respectable manner when the management controls expenses and increases productivity, which results in greater earnings. In this case, the indicator is measured using the total cost to total income ratio (Ashan, 2016).

The management assessment determines how well-equipped an organization is to handle financial difficulties. This component rating represents the management's capacity to recognize, measure, track, and manage risks related to the institution's daily operations. It talks about the management's ability to ensure the safe operation of the institution. The study conforms to all pertinent, necessary, and outside laws. The bank needs effective and efficient administration to meet its objectives for a predetermined period of time. To do a management analysis, use the following formula:

$$\text{Management quality (Efficiency)ratio} = \frac{\text{Net profit after Tax}}{\text{Total Number of Staff}} \times 100\%$$

3.4.1.4 Earning Ability

Earnings are a crucial factor in determining how well a company is performing financially. Earning quality primarily assesses the bank's productivity and profitability and explains the expansion and sustainability of its potential future earnings. Similar to other businesses, banks rely on their earnings to support dividends, maintain proper capital levels, offer chances for investment in order to expand, develop new business strategies, and keep their competitive edge. Here, return on asset and return on equity ratios are employed to gauge a bank's profitability (Ahsan, 2016).

A crucial aspect in determining an institution's long-term viability is its capacity to generate adequate returns for capital expansion, competitiveness maintenance, and capital. Assessing the company's growth, stability, valuation allowances, net interest margin, net worth level, and the caliber of its current assets allows examiners to make this determination. The grading of banks based on their earnings is important since a bank can increase its capital and strengthen its economic performance with a consistent high level of profitability. Profitability and the likelihood of failure are

mutually exclusive. The model's earnings (E) measure also offers a ratio that reflects how well management uses its resources to generate profits. The ultimate goal of any firm is to make money. More earnings typically indicate better financial standing. Similar to this, the bank's overall performance is reflected in its earnings.

$$\text{Earning per share} = \frac{\text{Net profit after Tax}}{\text{Total Number outstanding shares}} \times 100\%$$

3.4.1.5 Liquidity

The credit to deposit ratio (CDR), which determines the percentage of funds a bank has utilized for credit relative to the total amount of deposits it has gathered, is an essential tool for evaluating a bank's liquidity. The greater the CDR, the more effectively the bank uses the funds it has received (Jha & Hui, 2012). When assessing a firm's liquidity, examiners take into account its reliance on short-term, erratic financial resources, the presence of assets that may be quickly turned into cash, the sensitivity of the company to interest rate fluctuations, and its technical expertise in ALM. NRB Directives state that banks have to keep 20% of their total deposits in liquid reserves. All BFIs must manage liquidity in compliance with established standards and submit quarterly reports for each fiscal year.

3.4.1.5.1 Cash and Bank Balance Ratio (CBBR)

It is the absolute minimal amount of reserves that a bank must have on file with the NRB. The ratio assesses the bank's ability to pay its current debts. Therefore, it is important to maintain the optimum balance in order to meet their pay obligation. By examining the bank's cash balance, this ratio is also used to evaluate the bank's capacity to satisfy unforeseen depositor demands. The following is the formula:

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

3.4.1.5.2 Government Securities Ratio (GSR)

Government securities are seen as risk-free investments that can be quickly changed into cash to pay for immediate obligations. Because of this, each commercial bank is required to invest a specific amount in government securities.

This ratio was obtained by:

$$\text{Government Security Ratio (GSR)} = \frac{\text{Investment in Government security}}{\text{Total Investment}} \times 100\%$$

3.4.1.6 Financial Performance

How well a corporation uses resources from its primary business line to produce revenue is measured by its financial performance. The term is also employed as a broad gauge of the long-term financial stability of an organization. Analysts and investors analyze the financial performance of similar companies within the same industry, as well as comparing industries or sectors overall. In this investigation, return on equity (ROE) and return on assets (ROA) were used to gauge financial performance.

3.4.1.6.1 Return on Assets (ROA)

The return on assets (ROA) ratio is a financial metric that evaluates the profitability of an organization in relation to its total assets. Corporate management, analysts, and investors can evaluate a company's efficiency in using its resources to generate profits by looking at its return on assets (ROA). The metric is commonly expressed as a percentage utilizing a corporation's net income and average assets. For a firm to turn a profit, it needs to manage its balance sheet more effectively and efficiently. A lower ROA indicates room for development.

$$\text{Return on Assets(ROA)} = \frac{\text{Net profit after Tax}}{\text{Total Assets}} \times 100\%$$

3.4.1.6.2 Return on Equity (ROE)

Divide net income by shareholders' equity to get return on equity (ROE), a measure of financial success. Since a company's shareholders' equity is calculated by deducting its debt from its assets, return on equity (ROE) is also known as return on net assets. One measure of a company's profitability and ability to generate profits is its return on equity (ROE). The greater the return on equity (ROE), the more successfully a company's management is able to generate income and growth from its equity financing.

$$\text{Return on Equity(ROE)} = \frac{\text{Net profit after Tax}}{\text{Total shareholders fund}} \times 100\%$$

3.4.2 Statistical Tools

Statistical approaches are utilized in the planning, designing, data collection, analysis, development of pertinent interpretation, and reporting of study results.

3.4.2.1 Descriptive Statistics

Descriptive statistics: The ratio analysis of independent variables such as CAR, NPLR, MER, EPS, CBBR, GSR, ROA, and ROE has been explained by descriptive statistics. There has been use of descriptive analytical tools such as mean, standard deviation, minimum, and maximum values. Tables have been used to present the examined data.

A. Mean

A mean is a single value that represents a group of variables. All of the group's characteristics are reflected. Its value lies midway between the largest and smallest elements, making it a representative of the entire set of homogenous data. By dividing the entire amount by the total number of items, it is computed.

$$\text{Mean}(\bar{x}) = \frac{\sum X}{n}$$

Where,

$\sum X$ = Sum of the size of items

n = Number of items

Through the use of financial formulas and data gathered from secondary sources, the investigations determine the average value of each independent variable. As a result, the financial formula for each independent variable over a ten-year period is used to get the mean.

B. Standard Deviations (S.D.)

It is the most widely used measure of dispersion, which is the square root of the total of the square differences between a set of numbers and their arithmetic mean. It can be obtained as follows and is typically represented by the minuscule Greek letter σ (read as sigma).

$$\text{S. D. } (\sigma) = \sqrt{\frac{\sum(X - \bar{x})^2}{n - 1}}$$

Where,

σ = Standard deviation

Where, σ =Standard deviation

$\sum(X - \bar{x})^2$ = Sum of square of the deviation measured from arithmetic mean

n=Number of items

The financial formulas and data gathered from secondary sources are used in the studies to compute the standard deviation of each independent variable. Therefore, the financial formula used to calculate the standard deviation of each independent variable over a ten-year period is the basis for this calculation.

C. Coefficient of Variation (CV)

A statistical metric called the coefficient of variation (CV) can be used to represent how variable a dataset is in relation to its mean. Comparing the dispersion or variability of various datasets is a common use case, especially when the means of the datasets differ.

The following formula can be used to get the coefficient of variation:

$$\text{Coefficient of Variation (C.V.)} = \frac{\text{Standard deviation}}{\text{Mean}} \times 100$$

3.4.2.2 Correlation

The causal comparative research design of this study also included correlation analysis. Correlation analysis has essentially been used in this work to ascertain the strength and direction of the association between various combinations of dependent and explanatory variables. For this investigation, the Karl Pearson Coefficient of Correlation was employed.

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

Where,

n = Number of responses

X = Value of independent variable

Y= Value of dependent variable

3.4.2.3 Regression Analysis

The set of statistical techniques known as regression analysis is used to determine how independent factors affect dependent variables. For this study, a multivariate regression analysis approach was employed. The following is a presentation of the study's main model:

The regression model specification for this study is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e_t \dots \dots \dots (1)$$

From the economic model in the equation above, regression equation below was evolved:

Model I

$$ROA = \beta_0 + \beta_1 CAR + \beta_2 NPLR + \beta_3 MER + \beta_4 EPS + \beta_5 CBBR + \beta_6 GSR + e_t \dots (2)$$

Model II

$$ROE = \beta_0 + \beta_1 CAR + \beta_2 NPLR + \beta_3 MER + \beta_4 EPS + \beta_5 CBBR + \beta_6 GSR + e_t \dots (3)$$

Where,

ROA = Return on Assets

ROE = Return on Equity

CAR = Capital Adequacy Ratio

NPLR = Non-Performing Loan Ratio

MER = Management Efficiency Ratio

EPS= Earnings per Share

CBBR = Cash and Bank Balance Ratio

GSR = Government Securities Ratio

e_t = Error Term

β_0 = Intercept term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Coefficients

3.4.2.4 ANOVA Table

The regression line's goodness of fit has been evaluated using ANOVA. It aids in determining the regression model's overall significance.

3.5 Research Framework and Definition of Variables

A research framework provides an accurate representation of how the study's variables were arranged. This framework can be used to determine the study's main topics. It also helps you establish relevant research questions and study objectives. The dependent and independent variables of the CAMEL analysis are discussed as follows:

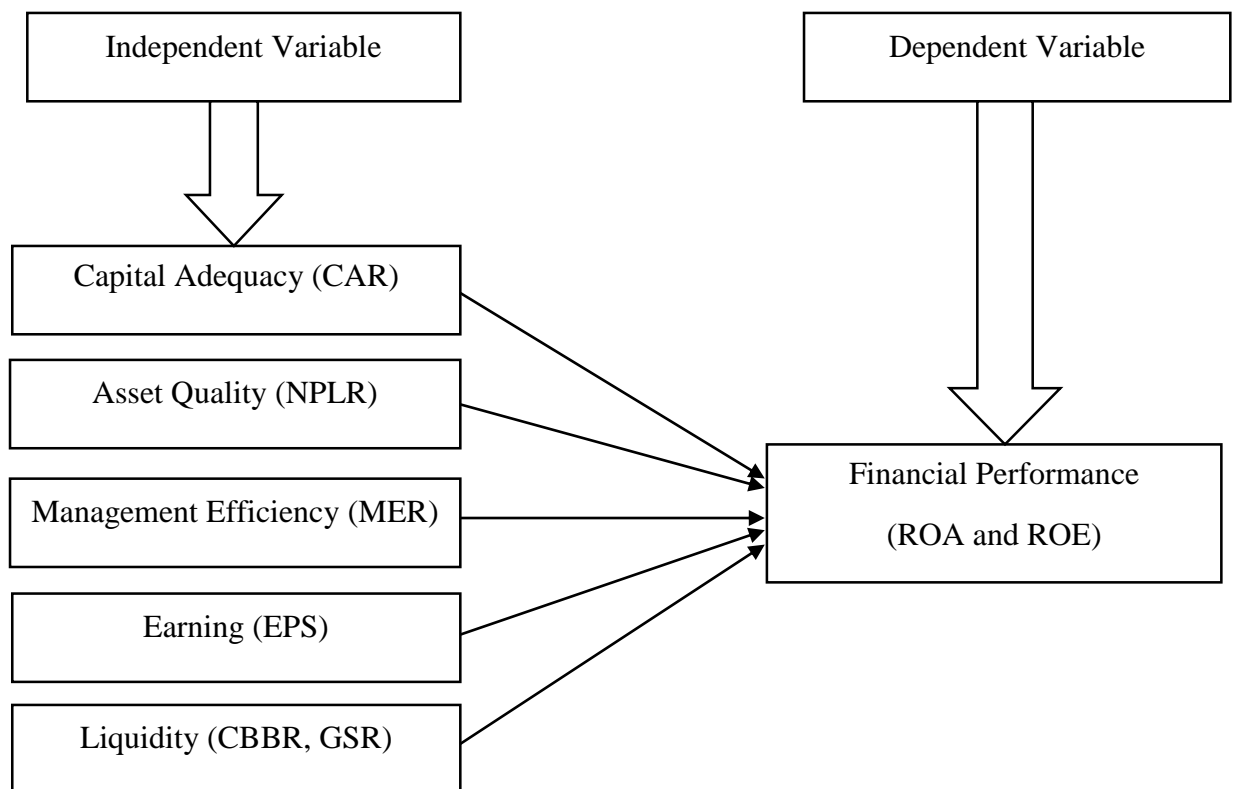


Figure 3.1: Research Framework

Source: Thisaranga, & Ariyasena, (2021)

Return on equity (ROE) and return on assets (ROA) are the research variables being used, and the responders are capital sufficiency, asset quality, earning, liquidity, and management efficiency, as shown in Figure 3.1 and the regression model.

Below is a deeper discussion of the terminologies, dependent variables, and independent factors related to this study.

Capital Adequacy

One method used to assess a bank's ability to withstand operating losses is capital sufficiency. It keeps the depositors' faith in the bank intact and prevents the bank from going bankrupt. Capital sufficiency ultimately determines how successfully financial institutions (FIs) can react to shocks to their balance sheets. Because of this, it keeps an eye on capital adequacy ratios, which use risk weightings to adjust the institution's assets for the three main financial risks: interest rate, credit, and foreign exchange. To determine the level of capital adequacy, bank capital is divided into Tier I and Tier II. Tier I is primary capital, whereas Tier II is additional capital (Baral, 2005).

Asset Quality

Credit risk is one factor that influences the health of a certain financial institution (FI). Asset quality is a technique used to assess the financial solvency of banks. The degree of credit risk is based on the quality of assets that a certain FI owns. In addition to their exposure to specific risks, bank customers' health and profitability—especially in the business sector—as well as developments in non-performing loan volumes and the caliber of assets held by financial intermediaries (FIs) all play a contribution.

Management Efficiency

The efficacy and efficiency of the bank's management are measured using metrics related to management efficiency. The ability of any company to manage its business affairs can determine whether it succeeds or fails. A bank's management quality indicates how sound its management is. It is known as outstanding management or skillful management and acts as a safety net for operating the bank in an orderly and respectable manner when the management controls expenses and increases productivity, which results in greater earnings. In this case, the metric is measured using the total cost to total income ratio.

Earning

Earnings is a tool used to evaluate the bank's ability to produce enough income to meet capital providers' needed rate of return and to illustrate future revenue growth. A company's earnings play a major role in assessing its financial performance. In order to explain the growth and sustainability of the bank's possible future earnings, earning

quality largely evaluates the productivity and profitability of the institution. Like other companies, banks depend on their profits to pay dividends, sustain appropriate capital levels, provide opportunities for investment to support growth, create new business plans, and maintain a competitive advantage.

Liquidity

A bank's ability to meet its own loan obligations as well as its short-term obligations is referred to as liquidity. If FI depositors suddenly withdraw their funds, there is a liability-side liquidity risk; if commitment holders suddenly ask for loans, there is an asset-side liquidity risk. The credit to deposit ratio (CDR), which determines the percentage of funds a bank has utilized for credit relative to the total amount of deposits it has gathered, is an essential tool for evaluating a bank's liquidity. When the CDR is higher, the bank uses its acquired funds more effectively. When assessing a company's liquidity, examiners take into account its reliance on short-term, erratic financial resources, sensitivity to interest rate fluctuations, availability of assets with quick cash conversion rates, and technical expertise in asset and liquidity management.

CHAPTER IV

RESULTS AND DISCUSSION

The analysis, exposition, and interpretation of data gathered from three sampled banks are covered in this chapter. This chapter contains the calculated, presented, analyzed, and interpreted data that were taken from the study's yearly reports. Examined and analyzed the gathered information, interpreting the correlation between the dependent and independent factors under six categories: return on equity (ROE) as the dependent variable, capital sufficiency, asset quality, management effectiveness, and earnings and liquidity as the independent variables.

4.1 Presentation and Analysis of Data

Tables have been used to display the yearly reports of NICA, HBL, and EBL from 2013/14 to 2022/23 as well as other crucial data that is available from many organizations within this research.

4.1.1 Descriptive Statistics of Variables

Descriptive statistics, or short descriptive coefficients, are used to summarize a particular data collection, which could be a sample or the entire population. Descriptive statistics (spread) are composed of measures of variability and central tendency. The mean, median, and mode are measurements of central tendency, whereas the standard deviation, variance, minimum, and maximum variables are measures of variability. The table displays the bank's profitability metrics, including ROA and ROE. Table 3 illustrates the relationship between each distinct dependent variable and the independent variables CAR, NPLR, MER, EPS, CBBR, GSR, ROA, and ROE.

Table 3*Descriptive Statistics of Variables*

Variables	N	Minimum	Maximum	Mean	Std. Deviation	CV (%)
Capital Adequacy Ratio (CAR)	10.000	0.120	0.140	0.127	0.008	6.30
Non-Performing Loan Ratio (NPLR)	10.000	0.000	0.050	0.018	0.018	100.00
Management Efficiency Ratio (MER)	10.000	1.670	2.450	1.948	0.228	11.70
Earnings Per Share (EPS)	10.000	24.170	57.830	37.187	12.074	32.47
Cash and Bank Balance Ratio (CBBR)	10.000	0.120	0.180	0.146	0.019	13.01
Government Securities Ratio (GSTR)	10.000	0.580	0.920	0.735	0.120	16.33
Return on Assets (ROA)	10.000	0.010	0.020	0.016	0.005	31.25
Return on Equity (ROE)	10.000	0.130	0.240	0.176	0.041	23.30

Source: SPSS calculations based on annual report of sample banks

The study's variables' descriptive statistics are displayed in Table 3. CAR's mean value is 0.127, with a 0.008 standard deviation. CAR ranges from 0.12 at the minimum to 0.14 at the maximum. NPLR has a mean value of 0.018 and a standard deviation of 0.0181. 0.0001 times is the minimum and 0.05 times is the greatest NPLR. With a standard deviation of 0.2281, the mean value of MER is 1.9480. The MER ranges from 1.67 to 2.45, minimum and maximum, respectively. With a standard deviation of 12.0737, the mean value of EPS is 37.187. 24.17 is the least EPS and 57.83 is the maximum EPS. CBBR has a mean of 0.1460 and a standard deviation of 0.0190. CBBR ranges from 0.12 to 0.18, at the lowest and greatest, respectively. With a standard deviation of 0.12, the GSR mean value is 0.735. CBBR ranges from 0.58 to 0.92 at the lowest and maximum, respectively. With a standard deviation of 0.0052, the mean ROA value is 0.016. The ROA is 0.10 at the least and 0.20 at the highest, respectively. With a standard deviation of 0.0406, the mean ROE value is 0.1460. The ROE has a minimum of 0.13 and a high of 0.24. The dataset with the lowest relative variability is identified by the CV of CAR, which is the lowest of all the variables at 0.063. This example has a lower CV value because the standard

deviation is smaller than the mean. A lower CV denotes less variability or dispersion by suggesting a smaller distribution of data points around the mean. With a 100% means standard deviation that is comparatively large in relation to the mean, NPLR has the highest CV. A higher CV indicates more variability or dispersion by suggesting a larger distribution of data points around the mean.

4.1.2 Descriptive Statistics of Capital Adequacy Ratio (CAR)

A bank's capital adequacy ratio (CAR) compares its capital to its risk-weighted assets and current liabilities.

Table 4

Capital Adequacy Ratio (CAR)

FY	NICA	HBL	EBL
2013/14	0.132	0.116	0.116
2014/15	0.140	0.112	0.111
2015/16	0.125	0.111	0.133
2016/17	0.124	0.108	0.127
2017/18	0.138	0.122	0.147
2018/19	0.122	0.125	0.142
2019/20	0.133	0.126	0.137
2020/21	0.135	0.149	0.134
2021/22	0.125	0.139	0.125
2022/23	0.134	0.117	0.119
Mean	0.1308	0.1225	0.1291
S.D.	0.0063	0.0130	0.0116
CV (%)	4.82	10.61	8.99

Source: SPSS calculations based on annual report of sample banks

The CAR descriptive data for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 4. The sample's average capital adequacy ratio for NICA is greater at 0.1308 than it is for HBL at 0.1225. The S.D. is smaller for NICA i.e 0.0063 and EBL has high S.D. i.e. **0.0130**. HBL has the greatest CV i.e. 10.61%, NICA has lowest CV i.e. 4.82%.

4.1.3 Descriptive Statistics of Non-Performing Loan Ratio (NPLR)

When a borrower is in default and hasn't made the required principle and interest payments for a certain period of time, the loan is considered non-performing (NPL). Loans become non-performing when borrowers are unable to make loan payments due to financial hardships or other conditions. A bank's performance is shown favorably by a declining non-performing ratio.

Table 5

Non-Performing Loan Ratio (NPLR)

FY	NICA	HBL	EBL
2013/14	0.0232	0.0289	0.0625
2014/15	0.0233	0.0196	0.0971
2015/16	0.0207	0.0322	0.0663
2016/17	0.0076	0.0123	0.0038
2017/18	0.0036	0.0085	0.0025
2018/19	0.0007	0.0144	0.0020
2019/20	0.0045	0.0116	0.0017
2020/21	0.0075	0.0104	0.0022
2021/22	0.0049	0.0050	0.0012
2022/23	0.0053	0.0167	0.0013
Mean	0.0101	0.0160	0.0241
S.D.	0.0087	0.0087	0.0365
CV (%)	86.14	54.38	151.45

Source: SPSS calculations based on annual report of sample banks

The NPLR descriptive data for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 5. The sample's average NPLR for EBL is higher at 0.0241 than it is in NICA, at 0.0101. The S.D. is smaller for two sample banks i.e. 0.0087 for both NICA and HBL. CV is lowest in HBL (i.e. 54.38%) and highest in EBL (151.45%). The dataset with the largest relative variability is indicated by the highest CV. This indicates that the standard deviation is higher than the mean, which raises the CV value. On the other hand, the dataset with the lowest relative variability is denoted by the lowest CV. This example has a lower CV value because the standard deviation is smaller than the mean.

4.1.4 Descriptive Statistics of Management Efficiency Ratio (MER)

The administration of an organization, be it a government agency, a business, or a not-for-profit organization, is known as management, or managing. Setting an organization's plan and directing volunteer or staff members' efforts to achieve goals by utilizing financial, natural, technological, and human resources are all examples of management actions.

Table 6

Management Efficiency Ratio (MER)

FY	NICA	HBL	EBL
2013/14	1.664	1.137	2.288
2014/15	2.200	1.149	2.227
2015/16	1.463	1.299	2.262
2016/17	0.969	2.259	2.341
2017/18	0.840	2.609	2.682
2018/19	0.583	2.249	3.088
2019/20	0.871	3.037	3.451
2020/21	1.066	2.514	2.899
2021/22	0.859	2.946	1.874
2022/23	0.961	2.323	2.346
Mean	1.1470	2.1522	2.5458
S.D.	0.4850	0.7124	0.4760
CV (%)	42.28	33.10	18.70

Source: SPSS calculations based on annual report of sample banks

The descriptive statistics of the MER for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 6. The sample bank's average MER of EBL is greater at 2.546 and lower at 1.147 in NICA. The S.D. is smaller at 0.4760 of EBL and HBL has higher S.D. value of 0.7124. CV is lowest in EBL at 18.70% and greatest in NICA at 42.28%. The dataset with the largest relative variability is indicated by the highest CV. This indicates that the standard deviation is higher than the mean, which raises the CV value. On the other hand, the dataset with the lowest relative variability is denoted by the lowest CV. This example has a lower CV value because the standard deviation is smaller than the mean.

4.1.5 Descriptive Statistics of Earning Per Share (EPS)

Earnings per share is a frequently used ratio to show a company's profitability per share. Furthermore, it is widely used in metrics for comparative valuation such as the price-to-earnings ratio. The price-to-earnings ratio, which is commonly used to analyze the profitability of companies in the same industry, is calculated by dividing the price by the profits per share. If a company's price is high in comparison to its earnings, it is considered overvalued. In a similar vein, an undervalued firm is one that trades below its earnings.

Table 7

Earnings Per-share (EPS)

FY	NICA	HBL	EBL
2013/14	47.41	34.19	91.88
2014/15	35.98	33.10	86.04
2015/16	25.59	33.37	78.04
2016/17	28.31	43.03	65.97
2017/18	23.06	33.55	32.48
2018/19	16.62	23.11	32.78
2019/20	34.22	32.44	38.05
2020/21	31.89	27.60	29.71
2021/22	28.18	28.07	19.91
2022/23	36.45	18.26	26.30
Mean	30.77	30.67	50.12
S.D.	8.49	6.81	27.32
CV (%)	27.59	22.20	54.51

Source: SPSS calculations based on annual report of sample banks

The descriptive data of the EPS for the chosen sample banks from 2013/14 till 2022/23 are displayed in Table 7. In the sample, the average EPS for EBL is greater at 50.12 and lower at 30.67 for HBL. The S.D. is smaller for HBL at 6.81 and higher at 27.32 for EBL. With 54.51%, CV is highest in EBL and lowest in HBL (22.20%). The dataset with the largest relative variability is indicated by the highest CV. This indicates that the standard deviation is higher than the mean, which raises the CV value. On the other hand, the dataset with the lowest relative variability is denoted by

the lowest CV. This example has a lower CV value because the standard deviation is smaller than the mean.

4.1.6 Descriptive Statistics of Cash and Bank Balance Ratio (CBBR)

A higher percentage indicates the bank's increased capacity to satisfy depositors' unforeseen demands. Conversely, a smaller ratio suggests that the bank may have trouble meeting its obligations due to a lack of liquidity. The calculation for it is as follows:

Table 8

Cash and Bank Balance Ratio (CBBR)

FY	NICA	HBL	EBL
2013/14	0.1277	0.0620	0.1720
2014/15	0.1326	0.0754	0.1851
2015/16	0.1085	0.0982	0.2310
2016/17	0.0801	0.1476	0.1693
2017/18	0.1380	0.1171	0.1855
2018/19	0.1587	0.1036	0.2511
2019/20	0.2011	0.0880	0.2386
2020/21	0.1471	0.0783	0.2096
2021/22	0.1098	0.1101	0.2372
2022/23	0.1372	0.1080	0.1455
Mean	0.1342	0.0988	0.2024
S.D.	0.0324	0.0246	0.0361
CV	24.14	24.90	17.84

Source: SPSS calculations based on annual report of sample banks

The descriptive data of the CBBR for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 8. In the sample, the average CBBR for EBL is greater at 0.2024 and lower at 0.0988 for HBL. The S.D. is smaller at 0.0246 for HBL and S.D. is higher at 0.0361 for NICA. CV is lowest in EBL (17.84%) and greatest in HBL (24.14%). The dataset with the largest relative variability is indicated by the highest CV. This indicates that the standard deviation is higher than the mean, which raises the CV value. On the other hand, the dataset with the lowest relative variability is denoted by the lowest CV. This example has a lower CV value because the standard deviation is smaller than the mean.

4.1.7 Descriptive Statistics of Government Securities Ratio (GSR)

The government periodically makes available securities and short- and long-term obligation papers at a minimal rate of return and risk. These securities can be turned into cash to satisfy short-term obligations. Treasury bills, development bonds, repo bonds, and outright purchases are among the instruments that the NRB issues to keep the nation's money flowing. On the Statutory Liquidity Fund (SLF), it is counted. For this reason, commercial banks must make a minimum amount of investments in government securities.

Table 9

Government Securities Ratio (GSR)

FY	NICA	HBL	EBL
2013/14	0.909	0.761	0.754
2014/15	0.867	0.614	0.391
2015/16	0.608	0.561	0.569
2016/17	0.816	0.488	0.569
2017/18	0.739	0.444	0.714
2018/19	0.922	0.664	0.947
2019/20	0.845	0.268	0.960
2020/21	0.906	0.658	0.963
2021/22	0.881	0.981	0.907
2022/23	0.912	0.996	0.485
Mean	0.841	0.644	0.726
S.D.	0.099	0.227	0.214
CV (%)	11.77	35.33	29.51

Source: SPSS calculations based on annual report of sample banks

The descriptive statistics of the GSR for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 9. The sample's average GSR for NICA is greater at 0.841 than it is in HBL at 0.644. The S.D. is smaller for NICA at 0.099 and higher at 0.227 for HBL. HBL has the highest CV (35.33%), while NICA has the lowest CV (11.77%).

4.1.8 Descriptive Statistics of Return on Assets (ROA)

Return on total assets (ROA) is the ratio of a company's profits before interest and taxes (EBIT) to its total net assets. The ratio between net income and total average assets measures how much operating and financial income a company makes in a given fiscal year relative to the average of its total assets. The ratio is said to be an indicator of how well a company generates money from its assets. EBIT is used instead of net profit in order to keep the statistic focused on operating earnings when compared to other similar companies, excluding the impact of financing or tax variances. A higher ROA indicates the best performance of the bank.

Table 10

Return on Assets (ROA)

FY	NICA	HBL	EBL
2013/14	0.0211	0.0154	0.0224
2014/15	0.0254	0.0130	0.0220
2015/16	0.0176	0.0134	0.0159
2016/17	0.0133	0.0194	0.0152
2017/18	0.0148	0.0203	0.0172
2018/19	0.0078	0.0161	0.0178
2019/20	0.0139	0.0208	0.0180
2020/21	0.0124	0.0166	0.0136
2021/22	0.0094	0.0168	0.0084
2022/23	0.0118	0.0109	0.0110
Mean	0.0147	0.0162	0.0161
S.D.	0.0053	0.0033	0.0044
CV	36	20.12	27.38

Source: SPSS calculations based on annual report of sample banks

The ROA descriptive statistics for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 10. In the sample, the average ROA for HBL is greater at 0.0162, while in NICA, it is lower at 0.0147. The S.D. is smaller at 0.0033 for HBL and higher at 0.0053 for NICA. CV is lowest in HBL (20.12%) and greatest in NICA (36%).

4.1.9 Descriptive Statistics of Return on Equity (ROE)

The measure of financial performance known as return on equity (ROE) is derived from dividends from shareholders' equity. Since a company's shareholders' equity is equal to its assets less its debt, return on equity (ROE) is also known as return on net assets. In terms of stockholder equity, return on equity (ROE) is regarded as a measure of a business's profitability. Better bank performance is indicated by a higher ROE.

Table 11

Return on Equity (ROE)

FY	NICA	HBL	EBL
2013/14	0.2241	0.1781	0.3047
2014/15	0.2686	0.1577	0.2840
2015/16	0.1942	0.1598	0.2285
2016/17	0.1445	0.2194	0.2032
2017/18	0.1457	0.1861	0.1738
2018/19	0.1144	0.1521	0.1600
2019/20	0.2024	0.1728	0.1733
2020/21	0.1797	0.1471	0.1350
2021/22	0.1559	0.1489	0.0856
2022/23	0.1697	0.1076	0.1088
Mean	0.1571	0.1268	0.1552
S.D.	0.0306	0.0137	0.0406
CV (%)	19.48	10.79	26.18

Source: SPSS calculations based on annual report of sample banks

The ROE descriptive data for the chosen sample banks for the years 2013/14 till 2022/23 are displayed in Table 11. The sample average ROE for NICA is 0.1571, whereas the HBL average is 0.1268. The S.D. is smaller at 0.0137 for HBL and higher at 0.0406 for EBL. CV is lowest in HBL at 10.79% and greatest in EBL at 26.18%.

4.1.10 Correlation analysis of Dependent and Independent Variables

The capital adequacy ratio, debt equity ratio, loan and advance ratio, government securities ratio, and non-performing loan ratio are the explanatory variables used in this study. For this study, return on equity and return on assets are regarded as the dependent variables. It is therefore reasonable to assume that there will be a statistically significant association of some kind between these sets of variables. Determining the type and strength of the correlations between different combinations of these factors is therefore the goal.

Pearson's correlation analysis has been used to identify correlations between variables. The degree of correlation between the various variables is explained in this section. One variable fluctuates more in tandem with the other when there is a positive correlation, indicating that the relationship is heading in the right direction. A negative correlation indicates the inverse, or rise in one when the other drops, and vice versa.

Table 12

Correlation Matrix

		CAR	NPLR	MER	EPS	CBBR	GSR	ROA	ROE
CAR	Pearson Correlation	1							
NPLR	Pearson Correlation	-.640*	1						
MER	Pearson Correlation	.636*	-0.53	1					
EPS	Pearson Correlation	-.637*	.836**	-0.48	1				
CBBR	Pearson Correlation	0.55	-0.45	.714*	-0.59	1			
GSR	Pearson Correlation	0.28	-0.4	0.09	-0.5	0.09	1		
ROA	Pearson Correlation	-0.31	0.5	-0.1	.757*	-0.18	-.825**	1	
ROE	Pearson Correlation	-0.47	-0.82*	-0.31	.952**	-0.46	-0.54	.816**	1

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

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

Source: SPSS calculations based on annual report of sample banks

ROA has both positive and negative correlations with the independent variables, as Table 12 demonstrates. There is a positive correlation between the correlation coefficients of ROA and NPLR and EPS, and a negative correlation between CAR

and MER, CBBR, and GSR. While changes in the dependent variable occur in the exact opposite direction of the independent variable for negative correlation, positive correlation indicates that the dependent variable is changing in the direction of the independent variable. While P-values for CAR, NPLR, MER, and CBBR are statistically insignificant because they are more than the alpha value ($\alpha=0.05$), P-values for EPS and GSR are statistically significant since they are smaller than the alpha value ($\alpha=0.05$). Banks with larger equity capital are thought to be safer, and this perception can be converted into higher profitability, according to the positive and significant link between capital adequacy and profitability.

Table 12 also demonstrates the positive and negative correlations between ROE and the independent factors. While CAR, NPLR, MER, CBBR, and GSR have negative correlations, ROE and EPS have positive correlations. While changes in the dependent variable occur in the exact opposite direction of the independent variable for negative correlation, positive correlation indicates that the dependent variable is changing in the direction of the independent variable. While P-values for CAR, MER, CBBR, and GSR are statistically insignificant because they are more than the alpha value ($\alpha=0.05$), P-values for EPS and NPLR are statistically significant since they are smaller than the alpha value ($\alpha=0.05$). Banks with larger equity capital are thought to be safer, and this perception can be converted into higher profitability, according to the positive and significant link between capital adequacy and profitability.

4.1.11 Regression Analysis

As mentioned in the research design and methodology section, the study employed two models to determine the qualitative effects of the capital adequacy ratio, debt-equity ratio, advance-to-assets ratio, government securities-to-total investment ratio, and non-performing loan ratio on the profitability of Nepalese commercial banks as measured by ROA and ROE. Model I shows the relationship between explanatory variables and ROA, and Model II shows the relationship between explanatory variables and ROE.

A. Regression Model I

The relationship between ROA and the explanatory factors is seen in the first model. For this model, the regression model is:

$$\text{ROA} = \beta_0 + \beta_1\text{CAR} + \beta_2\text{NPLR} + \beta_3\text{MER} + \beta_4\text{EPS} + \beta_5\text{CBBR} + \beta_6\text{GSR} + e_t$$

Where,

ROA = Return on Assets

CAR = Capital Adequacy Ratio

NPLR = Non-Performing Loan Ratio

MER = Management Efficiency Ratio

EPS= Earnings per Share

CBBR = Cash and Bank Balance Ratio

GSR = Government Securities Ratio

e_t = Error Term

β_0 = Intercept term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Coefficients

Table 13

Model Summary of ROA and Independent Variables

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967a	0.935	0.806	0.00228

a. Predictors: (Constant), GSR, CBBR, NPLR, CAR, MER, EPS

b. Dependent Variable: ROA

Table 13's depiction of the dependent variables' effects on ROA yields R and R² values. According to the R-square value, 93.5 percent of the explanation of GSR, CBBR, NPLR, CAR, MER, and EPS is attributed to ROA, with the remaining 6.5 percent coming from other variables.

Table 14*ANOVA Table of ROA*

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.003	6	0.129	7.216	.017b
Residual	0.167	3	0.078		
Total	1.170	9			

*a. Dependent Variable: ROA**a. Predictors: (Constant), GSR, CBBR, NPLR, CAR, MER, EPS**Source: SPSS calculations based on annual report of sample banks*

The regression model's overall significance is demonstrated by the examination of ANOVA Table 14. The observations total sum of squares deviation is 1.170, indicating the regression model's best fit. Given that the p-value (significance value) is 0.017 and is smaller than alpha (0.05), the model is considered significant.

Table 15*Beta Coefficient of ROA and Independent Variable*

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.001	0.020		0.013	0.991
CAR	0.065	0.139	0.104	0.470	0.670
NPLR	-0.119	0.085	-0.417	-1.391	0.258
MER	0.001	0.006	-0.017	-0.070	0.949
EPS	0.001	0.000	1.052	3.063	0.055
CBBR	0.067	0.068	0.248	0.988	0.396
GSR	-0.022	0.008	-0.513	-2.879	0.064

*a. Dependent Variable: ROA**Source: SPSS calculations based on annual report of sample banks*

Table 15's study of coefficients reveals that the beta for CAR is 0.065, meaning that a one-point increase in CAR affects ROA by a factor of 0.065. Comparably, NPLR's beta is -0.119, meaning that a one-point rise in NPLR has a 0.119 fold negative effect on ROA. Similarly, MER's beta is 0.001, indicating that a one-point rise in MER affects ROA by a factor of 0.001. Furthermore, the beta value of EPS is 0.001,

indicating that a one-point rise in EPS corresponds to a 0.001 times increase in ROA. Furthermore, the beta value for CBBR is -0.067, indicating that a one-point rise in NPLR results in a 0.067 fold decrease in ROA. Lastly, the beta for GSR is -0.022, meaning that ROA is negatively impacted by a 1-point increase in GSR by a factor of 0.022.

B. Regression Model II

The relationship between ROE and the explanatory factors is shown in the second model. For this model, the regression model is:

$$ROE = \beta_0 + \beta_1 CAR + \beta_2 NPLR + \beta_3 MER + \beta_4 EPS + \beta_5 CBBR + \beta_6 GSR + e_t$$

Where,

ROE = Return on Equity

CAR = Capital Adequacy Ratio

NPLR = Non-Performing Loan Ratio

MER = Management Efficiency Ratio

EPS= Earnings per Share

CBBR = Cash and Bank Balance Ratio

GSR = Government Securities Ratio

e_t = Error Term

β_0 = Intercept term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = Coefficients

Table 16

Model Summary of ROE and Independent Variables

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
2	.979a	0.959	0.876	0.01432

a. Predictors: (Constant), GSR, CBBR, NPLR, CAR, MER, EPS

b. Dependent Variable: ROE

Source: SPSS calculations based on annual report of sample banks

Table 16's depiction of the dependent variables' effects on ROE yields R and R² values. There is a high level of correlation between the variables, as indicated by the R value of 0.979, which stands for simple correlation. The regression model's adjusted R² value is 0.959, meaning that the six explanatory variables in the regression

equation account for 95.90% of the variation in ROE, with the remaining factors accounting for the remaining portion.

Table 17

ANOVA Table of ROE

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.01	6.00	0.250	6.478	.035b
Residual	0.191	3.00	0.039		
Total	0.01	9.00			

a. Dependent Variable: ROE

b. Predictors: (Constant), GSR, CBBR, NPLR, CAR, MER, EPS

Source: SPSS calculations based on annual report of sample banks

The regression model's overall significance is demonstrated by the examination of ANOVA Table 17. The observations' total sum of squares deviance is 0.01; this indicates that the regression model fits the data the best. The model is significant since the significance value (p-value) is 0.035, which is less than alpha (0.05).

Table 18

Beta Coefficient of ROE and Independent Variable

Coefficients ^a					
Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	-0.089	0.127		-0.702	0.533
CAR	0.914	0.873	0.185	1.047	0.372
NPLR	0.477	0.537	0.213	0.887	0.440
MER	0.027	0.035	0.151	0.766	0.499
EPS	0.003	0.001	0.913	3.325	0.045
CBBR	-0.067	0.429	-0.031	-0.156	0.886
GSR	-0.022	0.048	-0.065	-0.454	0.680

a. Dependent Variable: ROE

Source: SPSS calculations based on annual report of sample banks

Table 18's study of coefficients reveals that the beta for CAR is 0.914, meaning that a one-point increase in CAR affects ROE by a factor of 0.914. Comparably, NPLR's beta is 0.477, meaning that a one-point rise in NPLR affects ROE by a factor of 0.477. Similarly, MER's beta is 0.027, meaning that a one-point rise in MER affects ROE by a factor of 0.027. Furthermore, EPS has a beta of 0.003, meaning that a one-point rise in EPS affects ROE by a factor of 0.003. Furthermore, the beta value for CBBR is -0.067, indicating that a one-point rise in NPLR results in a 0.067-fold decrease in ROE. Lastly, the beta for GSR is -0.022, meaning that ROE is negatively impacted by a 1-point increase in GSR by a factor of 0.022.

4.2 Major Findings of the Study

The investigation and interpretation of the data have led to the following significant conclusions:

- The sample average capital adequacy ratio for NICA is greater at 0.1308 than it is for HBL at 0.1225. The S.D. is smaller at 0.0063 for NICA and higher at 0.013 for HBL. NICA is the sample bank with the lowest CV (4.85%) and the CV is highest in HBL i.e. 10.6%.
- The average non-performing loan ratio (NPLR) for EBL is 0.0241 in the sample and 0.0101 in NICA. The S.D. is smaller at 0.0087 for both NICA and HBL. HBL is the sample bank with the lowest CV (54.72%) and the CV is highest in EBL i.e. 151.62%.
- In the sample, the average MER of EBL is larger at 2.5458, whereas it is lower at 1.147 in NICA. The S.D. is smaller at 0.4760 for EBL and higher at 0.7124 for HBL. CV is lowest in EBL at 18.7% and greatest in NICA at 42.28%.
- The sample's average EPS for EBL is higher at 50.12 and lower at 30.67 for HBL. The S.D. is smaller at 6.81 for HBL and higher at 27.32 for EBL. EBL has highest CV (55%) and HBL has lowest CV (22%).
- In the sample, the average CBBR for EBL is greater at 0.2024 and lower at 0.0988 for HBL. The S.D. is smaller at 0.02460 for HBL and higher at 0.0361 for EBL. CV is lowest in EBL (17.82%) and highest in HBL (24.93%).
- The sample average GSR for NICA is greater at 0.841 and lower at 0.644 for HBL. The S.D. is smaller at 0.099 for NICA and higher at 0.227 for HBL. CV is lowest in NICA at 11.77% and greatest in HBL at 35.33%.

- The average return on assets (ROA) for HBL is 0.0162 in the sample and 0.0147 in NICA. The S.D. is smaller at 0.0033 for HBL and higher at 0.0053 for NICA. CV is lowest in HBL at 20.12 % and greatest in NICA at 36%.
- The sample average ROE for NICA is greater at 0.1571, compared to 0.1268 for HBL. The S.D is smaller at 0.0137 for HBL and higher at 0.0406 for EBL. CV is lowest in HBL at 10.79% and greatest in EBL at 26.18%.
- There is a positive correlation between the correlation coefficients of ROA and NPLR and EPS, and a negative correlation between CAR, MER, CBBR, and GSR.
- Whereas CAR, NPLR, MER, CBBR, and GSR have negative correlations with ROE, the correlation coefficients of ROE and EPS show a positive correlation.
- A high level of correlation between the variables is indicated by the R value, which stands for simple correlation and is 0.967. The regression model's adjusted R² value is 0.935, meaning that the six explanatory variables in the regression equation account for 93.50% of the variation in ROA, with the remaining factors accounting for the remaining portion.
- The beta for CAR is found to be 0.065, meaning that a one-point rise in CAR has a 0.065-fold effect on ROA. Comparably, NPLR's beta is -0.119, meaning that a one-point rise in NPLR affects ROA negatively by a factor of 0.119.
- A high level of correlation between the variables is indicated by the R value, which stands for simple correlation and is 0.979. The regression model's adjusted R² value is 0.959, meaning that the six explanatory variables in the regression equation account for 95.90% of the variation in ROE, with the remaining factors accounting for the remaining portion.
- The beta for CAR is found to be 0.914, meaning that a one-point rise in CAR has a 0.914-fold effect on ROE. Comparably, NPLR's beta is 0.477, meaning that a one-point rise in NPLR affects ROA by a factor of 0.477.

4.3 Discussion

The primary goals of this study are to evaluate capital adequacy and its effects on the profitability of Nepal's commercial banks, taking into account asset quality, management effectiveness, income per share, and liquidity. Additionally, make an effort to examine how ROA and ROE relate to CAR, NPLR, MER, EPS, CBBR, and GSR.

Descriptive research methodology was used in this study to enable both factual and variable analysis. For the purpose of sampling all banks in Nepal for the investigation of how capital sufficiency affects profitability, three distinct basis commercial banks are chosen. Data is gathered from publications such as the Unified Directives, the Nepal Rastra Bank Report, the annual report of a chosen sample bank, and others. The study is done using financial ratios, means, standard deviations, correlation coefficients, and multiple regressions, and a conclusion is given.

In line with the goals of the study, research examines risk evaluations and management evaluations using the CAMEL model. The independent factors in the study are liquidity, asset quality, management, earnings, and capital sufficiency. The study used statistical and financial methods to measure and compare management performance and risk. All banks manage their risks in accordance with NRB's Unified Directive 2079. Every bank's performance indicates its ability to make money, best use of its assets, and other bank-specific traits, all of which point to better management teams. Results from the data analysis for the CAMEL framework demonstrate a positive and statistically significant relationship between management appraisal and risk assessment.

The CAMEL framework is a good fit for assessing the profitability performance of commercial banks, according to the research findings. One of the finest models to learn about capital adequacy and other ratios is the CAMEL model, which shows how several CAMEL independent variables—like capital adequacy, asset quality, management effectiveness, earning, and liquidity—affect profitability. The CAMEL Framework is a suitable and effective approach for assessing financial institutions' management and financial assessments. The CAMEL study yielded positive results on the risk levels and well-managed management of the sample banks. This result is

consistent with the findings of (Baral, 2005), which employed bank risk measurement to assess joint venture banks' financial stability.

The results show that, in line with Sunaryo (2020), there is some association between CAR, NPLR, MER, EPS, CBBR, and GSR and ROA and ROE. According to Thakur (2019), capital adequacy ratios affect how profitable commercial banks are. Regarding the impact of capital adequacy on profitability, Sebayang (2020) has similar opinions that are consistent with the findings of this investigation.

The results are consistent with (Kumari, 2017), which maintains that the CAMEL rating system is among the most effective instruments for evaluating banks' financial performance. It is a quantitative method that is employed throughout numerous countries. All of the important operational and financial factors that examiners take into account when evaluating an institution's performance are reflected in the grading system. Institutions are rated using a combination of examiner qualitative evaluations and explicit financial ratios. The results of the study (Desta, 2016) show that the observed banks differ in terms of the composite CAMEL rating. The study's conclusions change when considering each component and its total average, even if all of the institutions receive good scores when seen as a whole. Because of this diversity, banks can now be ranked and compared according on their financial performance as opposed to trigger, regularity, supervisory, or administrative issues that require attention. The study concludes that risk and management improve banks' and BFIs' performance when combined with a suitable grading scheme.

CHAPTER V

SUMMARY AND CONCLUSION

This chapter includes a synopsis of the full study, along with its conclusions and ramifications. The summary section provides a basic overview of the research and includes a brief introduction and justification of the study. It enumerates the key findings from the section on analysis and discussion. The implication section discusses the study's utility and contribution, while the conclusion section discusses the corollaries that were so drawn.

5.1 Summary

This study's primary goal is to determine the current state of CAMEL factors and how they affect the profitability of Nepal's commercial banks by examining the country's three largest commercial banks. The CAMEL model is a technique that may be used to forecast future trends and relative risk as well as assess performance in the banking industry. It is incredibly accurate, efficient, and effective. Focusing on financial performance is made possible by calculating CAMEL ratios. Five important performance parameters make up the acronym CAMEL. C stands for capital adequacy, A stands for asset quality, M for management effectiveness, E for earnings potential, L for liquidity condition.

The relevant literature that was reviewed covered all of the topics covered in the literature review chapters of this study, including the definitions, concepts, and determinants of CAMEL, such as capital adequacy, asset quality, management effectiveness, earning, and liquidity, as well as profitability ratios like return on equity and return on assets. A list was provided with the definitions of the independent and dependent variables along with the connections between them. It also included illustrations of past studies on profitability and capital sufficiency. To cover more ground on this subject, a variety of books, journals, articles in periodicals, conference proceedings, reports, cases, websites, and other literary works were consulted.

SPSS and Microsoft Excel Office were utilized to evaluate the gathered data. The study's data analysis involved the use of descriptive statistics, regression analysis, correlation analysis, and ANOVA testing. Two dependent factors are influenced by five independent factors. Include the capital adequacy ratio; analyze the asset quality

ratio using the nonperforming loan ratio; evaluate management effectiveness; calculate the liquidity using the cash and bank balance ratio; and examine government securities with the total investment ratio, which is correlated in some way with the return on equity and return on assets.

The analysis shows that average ROA is greater in HBL, average NPLR, MER, and EPS is higher in EBL, and average CAR, GSR, and ROE are higher in NICA. Additionally, HBL has lower CAR, EPS, CBBR, GSR and ROE, whereas NICA has lower NPLR, MER and ROA. Furthermore, it was determined that there is a positive and negative correlation between ROA and the independent factors. While there is a negative correlation between CAR and MER, CBBR and GSR, there is a positive correlation between ROA and NPLR and EPS. While the P-values of CAR, NPLR, MER, and CBBR are statistically insignificant since they are greater than the alpha value, the P-values of EPS and GSR are statistically significant because they are smaller than the alpha value for ROA. ROE exhibits both positive and negative correlations with the independent variables. While CAR, NPLR, MER, CBBR, and GSR have negative correlations, ROE and EPS have positive correlations. While the P-values of CAR, NPLR, MER, and CBBR are statistically insignificant since they are greater than the alpha value, the P-values of EPS and GSR are statistically significant because they are smaller than the alpha value. Additionally, because the P-values of EPS and NPLR are smaller than the alpha value, they are statistically significant; in contrast, the P-values of CAR, MER, CBBR, and GSR are larger than the alpha value, making them statistically insignificant for ROE.

5.2 Conclusion

Researchers made use of CBBR, GSR, NPLR, and CAR. MER and EPS are additional CAMEL variable ratios that are outside the purview of the capital adequacy ratio. The researcher employed statistical tools like mean and standard deviation along with financial ratio techniques to arrive at a result. The investigation leads to the conclusion that the CAR, NPLR, GSR, CBBR, and MER ratios are satisfactory and fall within the acceptable range. In this study, ROA and ROE were used to analyze financial performance. The data was analyzed using statistical methods such as descriptive statistics and financial tools like ratios. Researchers found that the CAMEL variables had an impact on the profitability of commercial banks in Nepal

based on the data analysis, which showed that commercial banks are earning a respectable return on their operational activities in the form of ROA and ROE.

Regression analysis was used to determine the relationship between the non-performing loan ratio (NPLR) and ROA and ROE. The results showed that the NPLR had a negative impact on profitability. However, as seen by their favorable effects on ROA and ROE, the other CAMEL factors showed a beneficial impact on profitability. These findings add to our knowledge of the complex relationship between CAMEL factors and financial performance in the context of Nepalese commercial banks, offering scholars and practitioners in the field insightful information. It was reasonable to conclude that there is a correlation between the ROA and ROE of commercial banks in Nepal and the CAMEL variables CAR, NPLR, MER, EPS, CBBR, and GSR.

5.3 Implications

Research implications are the effects of your work on related policy decisions, future research, or the field of study that is important to it. The study implications, according to Kothari (2004), explain how the results could affect theory, policy, practice, and subsequent research. Research implications are the conclusions that researchers make based on your findings, and they explain how the findings might impact theory, practice, or policy. The following implications flow from the results and conclusions.

5.3.1 Implications to Commercial Banks

1. The capital adequacy ratio should be properly maintained by the banking sector because the CAMEL variables are essential to the profitability of commercial banks in Nepal.
2. Other different statistical tools could be employed to obtain more accurate results because only a limited number of statistical tools and techniques were used to examine the data and test the result.
3. The identification of additional variables is crucial since they significantly impact the profitability of commercial banks.
4. Bank needs to focus especially on the CAMEL variables.

5.3.2 Implications to Future Researcher

1. The study's independent variables included earnings per share, cash and bank balance ratio, capital adequacy ratio, non-performing loan ratio, management efficiency ratio, and government securities to total investment ratio. The dependent variables were ROE and ROA. However, by increasing the sample size and including more independent and other dependent variables in the regression model, the same study might be produced.
2. This study can be replicated in many sectors to find the CAMEL variables that affect profitability. To ascertain the firm-specific traits that influence an organization's profitability performance in other economic sectors, including the manufacturing sector, is the aim of this study.
3. To determine whether there have been additional factors that could affect the profitability of Nepal's commercial banks, more samples could be added.

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APPENDIX

Bank	FY	Capital Fund	RWA	Shareholder's Equity	Loans And Advances	Total Assets
NICA	2013/14	4,693.29	35,624.17	4,388.18	31,559.52	46,535.23
	2014/15	5,725.86	40,762.77	4,873.03	36,325.07	51,500.49
	2015/16	6,059.26	48,503.02	5,498.78	42,144.34	60,519.40
	2016/17	8,193.01	65,848.44	7,382.84	58,451.38	80,456.52
	2017/18	10,912.19	78,910.64	10,116.18	71,584.05	99,274.04
	2018/19	15,350.01	125,370.80	11,670.46	120,462.77	170,943.18
	2019/20	21,804.14	163,677.93	14,935.74	149,497.29	217,697.05
	2020/21	25,006.00	185,216.00	17,242.17	172,892.38	250,590.38
	2021/22	31,157.00	249,918.00	20,903.62	263,059.81	346,147.52
	2022/23	34,275.00	256,225.00	24,843.00	266,547.00	358,570.00
HBL	2013/14	6,414.44	55,520.65	5,299.71	39,723.81	61,152.97
	2014/15	7,155.58	63,729.14	6,083.41	45,320.36	73,589.85
	2015/16	8,041.97	72,183.72	6,958.90	53,476.23	82,801.55
	2016/17	9,815.20	90,507.19	8,823.77	67,745.98	99,863.01
	2017/18	12,613.82	103,796.76	11,705.20	76,394.26	107,255.48
	2018/19	14,349.50	115,140.22	12,328.15	77,798.24	116,462.30
	2019/20	15,871.59	125,984.23	15,994.80	97,470.07	133,151.14
	2020/21	20,523.08	137,875.25	17,589.25	106,726.54	155,884.92
	2021/22	20,132.71	168,346.34	20,132.71	132,093.95	178,490.93
	2022/23	22,010.20	195,980.58	22,010.20	154,972.82	216,286.27
EBL	2013/14	5,777.68	49,834.05	4,827.84	43,393.19	65,741.15
	2014/15	6,328.49	56,780.16	5,457.15	47,572.02	70,445.08
	2015/16	8,457.02	63,451.11	6,890.38	54,482.47	99,167.29
	2016/17	10,094.80	79,711.76	8,514.09	67,955.11	113,885.05
	2017/18	13,063.70	88,929.58	11,544.58	77,287.76	116,510.45
	2018/19	15,616.67	110,005.46	16,134.51	94,182.25	144,811.15
	2019/20	16,955.64	123,391.10	17,625.06	112,007.18	170,077.53
	2020/21	17,780.36	132,882.21	18,637.36	119,069.24	185,023.19
	2021/22	19,089.32	152,955.31	20,683.61	135,173.25	211,650.25
	2022/23	21,970.75	184,803.01	22,794.55	145,480.53	225,381.32

Figure in Millions (NPR.)

Bank	FY	Government Securities	Total Investment	Non Performing Loan	Total Loan	Net profit
NICA	2013/14	6,191.98	6,811.87	752.06	32,416.17	983.38
	2014/15	5,620.94	6,485.37	869.23	37,305.88	1,308.80
	2015/16	6,158.60	10,124.08	896.93	43,330.02	1,067.76
	2016/17	10,517.01	12,889.82	452.09	59,498.83	1,066.91
	2017/18	8,519.19	11,523.74	262.58	72,561.82	1,473.47
	2018/19	13,032.44	14,132.77	84.13	121,745.36	1,334.86
	2019/20	15,342.76	18,152.96	686.56	151,376.71	3,023.28
	2020/21	26,561.93	29,317.24	1,311.00	175,885.51	3,098.54
	2021/22	29,345.07	33,293.73	1,316.00	267,278.56	3,258.93
	2022/23	35,625.22	39,048.16	1,424.55	268,236.00	4,215.00
HBL	2016/17	9,886.76	12,992.04	1,186.19	41,057.40	943.70
	2016/17	12,182.97	19,842.06	911.51	46,449.33	959.11
	2016/17	9,593.05	17,113.39	1,783.95	55,428.01	1,112.29
	2016/17	9,412.27	19,306.07	851.38	69,100.89	1,935.91
	2017/18	7,965.62	17,929.27	661.81	77,640.98	2,178.23
	2018/19	11,579.74	17,439.53	1,218.34	84,364.47	1,875.61
	2019/20	6,287.88	23,432.95	1,098.58	94,708.97	2,763.85
	2020/21	17,564.40	26,679.56	1,083.58	104,043.45	2,586.72
	2021/22	20,054.37	20,433.63	635.85	127,634.69	2,998.62
	2022/23	31,768.12	31,900.98	2,494.91	149,284.57	2,367.54
EBL	2013/14	6,988.31	9,263.86	276.20	4,419.78	1,471.12
	2014/15	2,544.74	6,504.19	470.40	4,845.03	1,549.70
	2015/16	8,587.73	15,102.67	367.16	5,536.35	1,574.35
	2016/17	10,361.77	18,198.74	264.42	68,911.54	1,730.21
	2017/18	8,537.96	11,964.56	198.90	78,284.68	2,006.25
	2018/19	14,482.88	15,292.31	187.72	95,268.30	2,581.68
	2019/20	20,575.14	21,434.20	177.26	105,835.61	3,054.12
	2020/21	27,746.98	28,813.51	265.72	120,883.49	2,516.24
	2021/22	28,541.07	31,460.03	158.55	137,249.87	1,770.94
	2022/23	34,610.00	71,365.96	183.71	145,480.53	2,479.40

Figure in Millions (NPR.)

Bank	FY	EPS	Deposit In Millions (NPR.)
NICA	2013/14	47.41	39,910.00
	2014/15	35.98	44,980.00
	2015/16	25.59	53,477.00
	2016/17	28.31	69,488.00
	2017/18	23.06	87,678.00
	2018/19	16.62	151,219.00
	2019/20	34.22	180,575.00
	2020/21	31.89	210,843.00
	2021/22	28.18	300,252.00
	2022/23	36.45	294,977.00
HBL	2016/17	34.19	53,073.16
	2016/17	33.10	64,674.64
	2016/17	33.37	73,541.21
	2016/17	43.03	87,336.82
	2017/18	33.55	92,883.10
	2018/19	23.11	95,532.18
	2019/20	32.44	108,399.87
	2020/21	27.60	126,404.39
	2021/22	28.07	149,382.00
	2022/23	18.26	171,487.40
EBL	2013/14	91.88	57,720.40
	2014/15	86.04	62,108.10
	2015/16	78.04	83,093.70
	2016/17	65.97	93,735.40
	2017/18	32.48	95,094.50
	2018/19	32.78	115,511.80
	2019/20	38.05	130,177.40
	2020/21	29.71	144,728.30
	2021/22	19.91	160,220.20
	2022/23	26.30	172,739.20

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ABSTRACT The purpose of the study is to look at how CAMEL variables affect the

financial performance of commercial banks **in Nepal. In order to** determine **the** impact **of**

CAMEL factors on profitability, three of Nepal's largest commercial banks were chosen for this investigation. Data is gathered from publications such as the Unified Directives, the Nepal Rastra Bank Report, the annual statement of a selected sample bank, and others. Three commercial banks' secondary data for the years 2013–14– 2022–23 were used in the study. A study framework was created in order to draw a conclusion. A causal and descriptive study design was used. In this research, the profitability indicators for ROA and ROE are considered dependent variables. The CAMEL variables, which include the cash and bank balance ratio, earnings per share, non-performing loan ratio, capital adequacy ratio, and management efficiency ratio, are considered independent variables that determine profitability. Data was gathered from Nepal Rastra Bank's website as well as the relevant official websites of affiliated banks. SPSS and Microsoft Excel were utilized for the survey data analysis. The study's findings indicate that there is a positive and negative correlation between the dependent variables, ROA and ROE, and the independent factors. There is a positive correlation between the correlation coefficients of ROA and NPLR and EPS, and a negative correlation between CAR and MER, CBBR, and GSR. The independent variables and ROE have both positive and negative correlations. While CAR, NPLR, MER, CBBR, and GSR have negative correlations, ROE and EPS have positive correlations. Key Words: