DETERMINANTS OF PROFITABILITY OF NEPALESE COMMERCIAL BANKS

A Dissertation submitted to the office of Dean, Faculty of Management in partial fulfillment of the requirements for Master's degree

By

Rashmi Prajapati

Campus Roll No.: 30/075

Exam Roll No.: 13850/19

T.U. Reg. No 7-3-39-1317-2018

Shanker Dev Campus

Putalisadak, Kathmandu

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**Determinants of Profitability of Nepalese Commercial Banks**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

Name: Rashmi Prajapati

Signature:

Date of submission: 25 February 2024

REPORT OF RESEARCH COMMITTEE

Ms. Rashmi Prajapati has defended research proposal entitled "**Determinants of Profitability of Nepalese Commercial Banks**" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Dr. Kapil Khanal of Shanker Dev Campus, T.U. and submit the thesis for evaluation and viva voce examination.

Asso. Prof. Dr. Kapil Khanal

Dissertation Supervisor

Signature: …….

Dissertation Proposal Defended Date: 2079-07-23

Asso. Prof. Dr. Kapil Khanal

Dissertation Supervisor

Signature: …….

Dissertation Submitted Date:

Asso. Prof. Dr. Sajeeb Kumar Shrestha

Chairperson, Research Committee

Signature: ……

Dissertation Viva Voce Date: ……..

APPROVAL SHEET

We have examined the dissertation entitled "**Determinants of Profitability of Nepalese Commercial Banks**" presented by Ms. Rashmi Prajapati for the degree of Master of Business Studies. We hereby certify that the dissertation is acceptable for the award of degree.

…….

Asso. Prof. Dr. Kapil Khanal

Dissertation Supervisor

…….

Internal Examiner

…….

External Examiner

…….

Asso. Prof. Dr. Sajeeb Kumar Shrestha

Chairperson, Research Committee

…….

Asso. Prof. Dr. Krishna Prasad Acharya

Campus Chief

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ABBREVIATIONS

CA	:	Capital Adequacy
CAMEL	:	Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, And Sensitivity
CAR	:	Capital Adequacy Ratio
CONC	:	Market Concentration
EPS	:	Earnings Per Share
GDP	:	Gross Domestic Product
IND	:	Independent Directors
INF	:	Inflation
LDR	:	Loan to Deposit Ratio
LIQ	:	Liquidity
LLP	:	Loan Loss Provision
MBL	:	Machhapuchhre Bank Limited
MENA	:	Middle East and North Africa
MPT	:	Modern Portfolio Theory
NABIL	:	Nabil Bank Limited
NBL	:	Nepal Bank Limited
NIM	:	Net Interest Margin
NPL	:	Non-Performing Loans
NRB	:	Nepal Rastra Bank
OME	:	Operations Management Efficiency
PDM	:	Profit Distribution Management
PER	:	Price Earnings Ratio
RI	:	Residual Income

ROA	:	Return on Assets
ROAA	:	Return on Average Assets
ROE	:	Return on Equity
ROI	:	Return on Investment
SBL	:	Siddhartha Bank Limited
WDI	:	World Development Indicators

ABSTRACT

This study entitled '**Determinants of Profitability of Nepalese Commercial Banks**' is secondary data-based research study. The main aim of this study is to understand the impact and its magnitude of both the bank specific factors (internal factors) as well as macroeconomic factors (external factors) on the profitability of the commercial banks in Nepal. The selected independent variables are bank's size, capital adequacy, liquidity, operations management efficiency, market concentration, board size, number of independent directors. The study is conducted to analyze whether or not these independent variables have significant impact on the dependent variable profitability i.e. ROA and ROE. Convenience sampling method has been used for the research and the research is quantitative in nature. Data on the mentioned variables has been considered from the period Nepalese fiscal year 2012/13 to 2021/22. Descriptive and causal comparative research design has been adopted to achieve objectives of this study. These approaches has been conducted using Statistical Package for Social Sciences (SPSS).

It is revealed from the study that there exist negative relationship between bank size, liquidity, number of independent directors, gross domestic product and inflation with return in assets while there exists positive relationship of market concentration, board size, operations management efficiency, and capital adequacy ratio with return in assets. Among these variables, bank size, capital adequacy ratio and operations management efficiency has significant impact on the return in assets. Moreover, there exists negative relationship between bank size, capital adequacy ratio, liquidity and board size with return on equity while there exists positive relationship of market concentration, operations management efficiency, number of independent directors, gross domestic product and inflation with return on equity. Among these variables, operations management efficiency has significant impact on the return on equity.

Keywords: Return on Assets, Return on Equity, Bank's Size, Capital Adequacy, Liquidity, Operations management efficiency, Market Concentration, Board Size, Number of Independent Directors

CHAPTER-I
INTRODUCTION

1.1 Background of the study

The financial sector is the foundation of any nation's economy. By offering effective monetary intermediation, it acts as a facilitator for attaining sustainable economic growth (Gurung & Gurung, 2022). A robust financial system encourages investment by facilitating profitable business possibilities, leveraging savings, effectively allocating resources, and facilitating the exchange of commodities and services.

Banks play a crucial role in the financial sector by offering a variety of financial services to consumers, companies, and governments (Pradhan & Shrestha, 2016). They are critical for facilitating transactions, managing risks, and mobilizing savings, all of which are necessary for the expansion and growth of the economy. In addition to receiving deposits, lending money, issuing credit and debit cards, and providing various investment products, banks also offer a number of other services (Gwachha, 2019). By serving as a bridge between the central bank and other financial institutions, they also play a crucial role in the monetary policy of many nations. As a result, banks are subject to strict regulation by the government in order to guarantee their stability and safety as well as that of the financial system.

Financial performance is defined as the outcome of how well assets of a firm are utilized to generate income. It is a yardstick applied to measure the financial health of a firm over a given period of time (Gautam, 2018). Financial performance in a broader sense refers to the degree to which financial objectives being or has been accomplished and is an important aspect of finance risk management. As per Siddique, Khan, and Khan, (2022) It is the act of putting a company's policies and operations into monetary terms. It is used to assess a company's overall financial health over a certain time period and can also be aggregated to compare similar companies in the same sectors or industries. One method for identifying financial strengths, weaknesses, opportunities, and dangers is financial measurement, according to Louri (2005). They provide return on investment (ROI), residual income (RI), earnings per share (EPS), dividend yield, price earnings ratio (PER), book value per share,

and so on as examples of these financial metrics. Nonetheless, return on asset (ROA), return on equity (ROE), or return on investment (ROI) are the most often utilized performance metric approximations. Accounting measurements are the proxy for these performance measures. Return on equity and return on asset would be used in this study to measure financial performance.

The study on the determinants of profitability for the banking sector of a country is emphasized by virtue of the fact that the majority of countries have a financial system that is based on banking system (Pradhan & Shrestha, 2016). A bank's financial stability and health are largely determined by its profitability. Successful banks are better able to withstand financial shocks and economic downturns. They are equipped to cover losses, make loan payments, and keep capital adequacy ratios in check. Unprofitable banks, on the other hand, can experience financial issues, which could cause financial system instability.

Any economy's stability and expansion depend heavily on the soundness of its banks. Savings can move from savers to investors thanks to banks' role as middlemen between borrowers and depositors. When banks are in good shape, they can efficiently direct capital toward the most fruitful applications, supporting economic growth. Banks, however, can pose a serious risk to the financial system and the overall economy if they are not in good health. A bank is considered to be healthy if it has enough capital, liquidity, and high-quality assets to withstand varied economic conditions (Jaouad & Lahsen, 2018). A good bank should also be able to resist stress situations like economic downturns, abrupt changes in interest rates, or unanticipated losses. It should also have strong risk management procedures in place. Therefore, ensuring the health of banks is crucial for maintaining financial stability and promoting sustainable economic growth.

A competitive banking industry fosters efficiency, which is crucial for growth. The financial health of banks has a significant impact on a nation's ability to expand its economy. The resource providers must consider a financial institution's performance carefully in order to make wise investment choices. The stockholders are rewarded for their investment through strong financial performance. In turn, this promotes more investment and results in economic expansion. On the other side, substandard banking operations can result in bank failure and

crisis, which have a detrimental effect on economic expansion. Financial institution profitability is one of the key factors that fund providers use to assess the performance of the institutions.

Academic research has shown a strong interest in the financial performance analysis of commercial banks. Both internal and external factors have an impact on commercial banks' success (Al-Tamimi, 2010). That can be divided into macroeconomic variables (external) and bank-specific (internal) variables. The performance of the bank is impacted by internal factors, which are specific bank characteristics. Basically, management and board internal actions have an impact on these variables. The external factors, which are beyond the control of the company and affect banks' profitability, may be sectorial- or even national-level.

A number of variables influences financial performance. Siddique, Khan and Khan (2022) suggested that bank specific factors such as cost efficiency ratio, liquidity ratio, bank size, capital adequacy ratio have significant relationship with profitability of commercial banks. Therefore, banks should concentrate on the elements most likely to impact profitability and the scope of those influences in order to assure healthy financial performance.

Capital is one of the bank-specific factors influencing bank profitability. Capital is the amount of own funds available to support the bank's operations and act as a buffer in the event of a crisis. Because deposits are the most fragile and prone to bank runs, bank capital creates liquidity for the bank. Furthermore, increased bank capital reduces the likelihood of distress. However, it is not without drawbacks in that it induces low demand for liability, which is one of the cheapest sources of funding. Capital adequacy refers to the amount of capital required by banks as decided by the central bank and the regulator to withstand risks such as credit, market, and operational risks in order to absorb potential losses and protect the bank's debtors. The capital adequacy ratio is used to assess capital adequacy (CAR). The capital adequacy ratio demonstrates the bank's ability to withstand losses during a crisis. The capital adequacy ratio is directly proportional to the bank's resilience in crisis situations. It has also a direct effect on the profitability of banks by determining its expansion to risky but profitable ventures or areas (Sangmi & Nazir, 2010).

Another bank specific variable that affects a bank's profitability is its asset or size. Bank assets include, among other things, current assets, credit portfolios, fixed assets, and other investments. A growing asset (size) related to the age of the bank. A bank's loan is frequently the main asset that generates the majority of the bank's income. Loans are the primary source of income for commercial banks. Bank profitability is determined by the quality of their loan portfolio. The loan portfolio quality has a direct impact on bank profitability.

Another factor that influences bank performance is liquidity. The ability of a bank to meet its obligations, primarily those of depositors, is referred to as liquidity. According to Dang (2011), adequate liquidity levels are positively related to bank profitability and the most common financial ratios that reflect a bank's liquidity position are customer deposit to total asset and total loan to customer deposits.

The cost of production per unit of output for a bank is measured by operational cost efficiency (Anderson & Lanen, 2009). Bank profitability is negatively impacted by high total cost to total income ratios, but low ratios indicate rising profits. The ratio of total cost to total income is used to calculate operational cost efficiency.

Sharma and Singh (2011) explain that macroeconomic factors as a part of external factors such as interest rate, inflation rate, exchange rate, gross domestic product, market risk and money supply are the most influential macroeconomic factors. Interest rates, inflation rates, and foreign exchange rates must all be taken into consideration when commercial banks make investment decisions. Commercial banks are very interested in this and perform investigations to find out how even the slightest changes in these variables affect their operations. The macroeconomic variables in this research that are external to the profitability of commercial banks are the gross domestic product and inflation.

1.2 Problem Statement

Any nation's economic growth is greatly influenced by the banking industry. It directs the economy's idle resources toward the productive sector. Consequently, it is seen as the core of an economy, and the success or failure of the banking industry has a big impact on the nation's economic development (Sultan, Ahmed, Ameen, Kumar, & Singh, 2020).

Commercial banks form the major component of both the banking sector and financial sector of the Nepalese economy.

A bank's financial performance depends on both internal and external factors. The elements that are internal to a bank are those that are unique to that bank, arising from its operations and appearing in its balance sheets and profit and loss accounts. The external factors, which influence the financial performance of the banking industry, are not caused by bank activities but rather reflect the wider economic environment. As a result, a bank's financial performance largely depends on both its own operations (internal variables) and the state of the economy as a whole (external factors).

Nepalese economy being a developing economy is in transitional phase. Due to various factors such as adaptability and acceptance, technological changes, political reforms and policies, economic reforms and stability etc. have significantly affected the operations and policies of banking system in Nepal which time and over again has impacted the performance of the banks (Gurung & Gurung, 2022). So, it becomes necessary to study the factors both internal and external that have major impacts on the performance of the banks which again are affected by the major events as mentioned. Thus, the major focus of this study is to understand the impact and its magnitude that various internal as well as external factors have on the performance of the bank which will be measured by various measurements of profitability.

The research is directed towards answering the following questions:

1. What is the position of bank’s size, capital adequacy, liquidity, operations management efficiency, market concentration, board size, number of independent directors, ROA and ROE of commercial banks?
2. Is there any relationship between bank’s size, capital adequacy, liquidity, operations management efficiency, market concentration, board size, number of independent directors and ROA and ROE of the commercial banks?
3. How does the bank’s size, capital adequacy, liquidity, operations management efficiency, market concentration, board size, number of independent directors impact the ROA and ROE of the commercial banks?

1.3 Objective of the Study

This study aims to understand the impact and its magnitude of both the bank specific factors (internal factors) as well as macroeconomic factors (external factors) on the profitability of the commercial banks in Nepal.

The specific objectives are as follows:

1. To assess the position of bank's size, capital adequacy, liquidity, Operations management efficiency , market concentration, Board Size, number of independent directors, ROA and ROE of commercial banks
2. To analyze the relationship between the bank's size, capital adequacy, liquidity, Operations management efficiency , market concentration, Board Size, number of independent directors and ROA and ROE of the commercial banks
3. To analyze the impact of bank's size, capital adequacy, liquidity, Operations management efficiency , market concentration, Board Size, number of independent directors on the ROA and ROE of the commercial banks

1.4 Rationale of the Study

The study intends to understand the impact and its magnitude of both the bank specific factors (internal factors) as well as macroeconomic factors (external factors) on the profitability of the commercial banks in Nepal, it will help to determine the major indicator amongst the defined variables that significantly affects the profitability of the commercial banks in Nepal. Moreover, the study will be helpful for the Banks in order to prioritize their focus on the various factors that affect their profitability and subsequently it will give the conceptual perspective for the policy-making bodies to formulate and implement their policies and strategies accordingly.

The study further highlights the effect of corporate governance in the profitability of the commercial Banks and this will help the Banks to make decisions regarding their board size, number of independent director and their functioning. In addition, the study deals with the

profitability in term of ROA and ROE, which helps investor, customers and management team to know the position if the Banks in the given time duration in terms of profitability.

Moreover, the study will aid the Banks to forecast the associated risk and to be prepared in order to cope with the unforeseen circumstances that might arise in the near future. Subsequently, this study will be significant in improving the risk management and decision-making.

1.5 Limitations of the Study

The study uses only secondary data and analysis which may not disclose the actual result. Among 20 commercial banks, this study is based on only five commercial banks named Machhapuchchhre Bank Limited, Siddhartha Bank Limited, Nepal Bank Limited Agricultural Development Bank Limited and Nabil Bank Limited.

The limitations of the study are given below:

1. The study is limited to data contained in published financial statement and NRB reports.
2. Most of the data are of secondary nature and the calculations, conclusions of the study fully depend on the accuracy of the data provided by the respective organization.
3. The sample size is adequate and confined to five commercial banks however do not contain the entire population of twenty-one commercial banks.
4. The study is concerned with profitability of commercial banks only.
5. This study takes into consideration of the measurable factors that impacts the profitability however non measurable factors such as natural calamities, political instability etc. has not been considered which might have significant effect in the profitability of the Bank

Conducting the research for the academic purpose has always limited time so due to the limited time frame, depth analysis of the subject matter is not possible.

CHAPTER - II
REVIEW OF LITERATURE

2.1 Introduction

A literature review is the examination and analysis of previous studies and relevant research in a specific subject area to understand the existing knowledge, findings, and shortcomings. Effective research builds upon prior knowledge and involves a comprehensive review of past literature. In this context, the chapter focuses on examining both empirical and theoretical literature regarding the impact of financial development on economic growth in Nepal. Essentially, the literature review section provides a summary of insights from other researchers who have explored similar topics. Reviewing foreign literature in the field is crucial to facilitate a thorough understanding and arrive at meaningful conclusions. This chapter is structured into three segments: Theoretical review, Empirical review, and identification of research gaps.

2.2 Theoretical Review

2.2.1 Economies of Scale theory

Economies of scale are a fundamental concept in microeconomics, explaining how increasing production volume leads to cost advantages per unit. In terms of the banking industry, it refers to the cost advantages large banks can potentially achieve compared to smaller institutions due to the cost advantages and operational efficiencies that contribute to enhanced profitability. For instance, research by Berger, Mester, and Hannan (1997) found evidence of economies of scale in the U.S. banking industry, indicating that larger banks experienced lower average costs per dollar of assets compared to their smaller counterparts. This cost advantage may stem from the ability of larger banks to leverage their resources more efficiently and greater profitability.

2.2.2 Buffer theory

The buffer theory proposed by Calem and Rob (1996) relates to how banks manage their capital adequacy and its impact on profitability. In simple terms, the capital adequacy ratio is a measure of a bank's financial health, representing the proportion of capital (like shareholders' funds and reserves) to its risk-weighted assets. The buffer theory suggests that banks maintain a buffer of capital beyond the regulatory requirements.

This additional buffer serves as a safety net, helping banks absorb unexpected losses without jeopardizing their stability. By keeping extra capital on hand, banks aim to avoid financial distress during challenging times. However, the theory acknowledges that maintaining too much capital can hinder profitability, as excess capital could have been used for investments that are more lucrative or returned to shareholders.

In summary, the buffer theory emphasizes that banks strike a balance between meeting regulatory capital requirements and optimizing profitability. It encourages them to keep a prudent buffer to withstand potential losses while being mindful not to overly restrict their capacity for profit-generating activities. This approach contributes to a bank's resilience in the face of uncertainties while ensuring a reasonable return on investment.

2.2.3 Pecking Order theory

The Pecking Order Theory, proposed by Myers and Majluf (1984), provides insights into how companies choose their sources of financing. In essence, this theory suggests that firms have a preferred "pecking order" when it comes to funding their activities. According to the pecking order, companies prioritize internal financing, such as retained earnings, as the most preferred source. If internal funds are insufficient, they then turn to debt financing rather than issuing new equity. The rationale behind this preference is the perceived information asymmetry between managers and investors. Companies believe that using internal funds or debt is less likely to send negative signals to the market, as opposed to issuing new equity, which could be interpreted as a sign that the firm's stock is overvalued.

Pecking order prioritizes internal funds, which could lead to banks maintaining higher liquidity to ensure readily available resources.

2.2.4 Efficiency theory

Efficiency theory in the context of banking profitability revolves around the idea that a bank's success and profitability are closely linked to its operational efficiency. Efficient banking operations are characterized by the optimal use of resources, streamlined processes, and effective cost management. Banks that adhere to efficiency theories strive to minimize input costs while maximizing output, aiming for the highest possible level of productivity. Efficient banks are better positioned to weather economic fluctuations and changes in the financial landscape, ultimately contributing to sustained profitability.

2.2.5 Agency theory

Agency theory serves as a framework that examines the dynamic between principals (such as shareholders) and agents (like management or directors) within an organization. The theory suggests the potential for conflicts of interest between these entities, as agents may not consistently prioritize the best interests of the principals. Independent directors play a vital role in easing these conflicts, ensuring that the actions of the company's management align with the shareholders' best interests.

In the context of commercial banks, agency theory gains particular relevance because shareholders entrust their capital to management, introducing the possibility of conflicts between shareholders and management. Independent directors, situated externally to the day-to-day operations of the bank, are anticipated to offer impartial oversight, contributing to the overall governance structure.

The impact of independent directors on the profitability of commercial banks lies in their capacity to enhance corporate governance, manage risks, and contribute to strategic decision-making. Independent directors act as a check on executive management, ensuring that decisions prioritize the long-term interests of the bank and its shareholders.

A study by Adams, Hermalin, & Weisbach (2010) titled "The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey," supports the concept that independent directors play a crucial role in enhancing corporate governance mechanisms. The study shows how boards, including independent directors, influence firm performance.

2.2.6 Corporate Governance theory

Corporate governance theory suggests that an optimal board size is necessary for effective decision-making. A board that is too large may face challenges in reaching consensus and making timely decisions, while a board that is too small may lack diverse perspectives. Corporate governance emphasizes the importance of board independence to prevent conflicts of interest. A board with an appropriate size can facilitate the presence of independent directors who can provide objective oversight and challenge management decisions. A study conducted by Al Manaseer, Al-Hindawi, Al-Dahiyat, & Sartawi (2012) concluded that corporate governance in terms of board size has negative impact on profitability of banks as the increase in board size leads to decrease in the ability to monitor management and increased decision making time. Similarly, Hermalin and Weisbach (2003) argue that a larger board will weaken firm performance.

2.3 Empirical Review

This section consists of review of earlier literature conducted on determinants of profitability of commercial banks. It reviews the empirical works along with the major conclusions.

Jigeer and Koroleva (2023) investigated the determinants of profitability in Chinese city commercial banks, using internal explanatory variables such as bank size, liquidity, capital adequacy, credit quality, and operating efficiency, as well as external explanatory variables such as province GDP and inflation. The research sample consisted of 16 listed city commercial banks with an unbalanced dataset spanning the years 2008-2020. Internal explanatory variables such as bank size, capital adequacy, credit quality, and operating efficiency, as well as external explanatory variables such as province GDP and inflation,

were found to have a significant impact on the profitability of city commercial banks, while liquidity had no significant impact.

Santoso and Samboro (2022) investigated the effect of capital adequacy ratio (CAR) on profit distribution management (PDM) with return on assets (ROA) as a mediating variable in Islamic commercial banks for the period of 2010-2020. The population included all Islamic commercial banks in Indonesia that were registered with the Financial Services Authority and submitted 9 financial statements of Islamic commercial banks in a row. CAR had a positive and significant effect on ROA, according to the findings. CAR and ROA, on the other hand, had a positive and significant impact on PDM.

Ally (2022) examined the influence of Macro-Economic Factors on Financial Performance of Commercial Banks in Tanzania. The study analyzed the way microeconomic variables such as interest rate, inflation rate and exchange rate determine the financial performance of commercial banks and included the trend of the exchange rate, interest rates and inflation rate for the 10 years from 2009 to 2019. The performance measures utilized in this study were return on assets and return on equity. The sample size of the study was 38 commercial banks in Tanzania. The findings of the study showed a significantly positive relationship between inflation rate and financial performance whereas significantly negative relationship between interest rate, exchange rate and financial performance of the commercial banks of Tanzania.

Using unique panel data from 23 Bangladeshi banks with significant market shares from 2005 to 2019, Hossain and Ahamed (2021) examined the relationship between bank profitability and a comprehensive list of industry-specific, bank-specific, and macroeconomic variables. They employed the Pooled Ordinary Least Square (POLS) Method for regression estimation. Robustness has been tested using the random Effect model. As surrogates for profitability, three indicators have been employed: Return on Asset (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). It has been discovered that there is a substantial correlation between GDP growth, capital ratio, and non-interest income and ROA. If NIM is used to quantify profitability, then market share, bank size, and real exchange rates are important explanatory factors in addition to non-interest income. Market share is the sole important factor that determines profitability as determined by ROE. This study's main

contribution to the body of knowledge is its thorough empirical analysis, which accounts for every possible combination of independent variable bank-specific, industry-related, and macroeconomic, to explain why Bangladeshi banks are profitable.

Alnajjar and Othman (2021) examined the impact of capital adequacy ratio on Islamic bank's' performance in selected MENA countries. The performance measures utilized in this study were return on assets and return on equity. The sample size of the study was 18 Islamic commercial banks. The secondary data were collected from the year 2017 to 2019 from the financial statements of the banks. Fixed and random models were applied to assess the impact of the variables in this study. The findings of the study showed that the selected Islamic banks are committed to capital adequacy ratio which is defined under Basel III. The study found that there is a statistically negative significant influence of capital adequacy ratio on both performance indicators i.e., return on equity and return on assets in the commercial Islamic banks in the selected MENA countries.

Sultan, Ahmed, Ameen, Kumar, and Singh (2020) studied the impact of bank specific indicators such as asset size, credit risk, capital adequacy, and macroeconomic indicator such as the GDP, inflation and interest rate on the profitability of banks of Pakistan. The results reveal that the micro-economic factors that are deposits, asset quality, asset size, and liquidity have a significant impact on the bank's profitability. While macro-economic factor gross domestic product (GDP) has a positive impact on the bank's efficiency. However capital adequacy ratio, inflation has a negative effect on the bank's profitability. The sample size of the study was 17 commercial banks. The secondary data were collected from the year 2003 to 2018 from the financial reports of the banks whereas the data for macroeconomic are obtained from World Development Indicators (WDI).

Margono, Wardani, and Safitri (2020) assessed the effect of liquidity and adequacy on bank performance through interest rate risk and credit risk. Capital adequacy and liquidity are variables that can affect the ups and downs of opinion, where the bank's performance in this study is the dependent variable. Good credit distribution can minimize the occurrence of defaults. This study used banking companies in Indonesia that are listed on the Indonesian stock exchange, with a total number of 43 banking companies, this study however, uses only

30 companies ranging from years 2014 to 2019, primarily due to the availability of the limited data. The data analysis techniques used in this study is PLS-SEM with the WarpPLS application. The study results showed that capital adequacy and liquidity have a positive effect on bank performance, interest rate risk and credit risk can mediate capital adequacy on bank performance, interest rate risk can mediate liquidity on bank performance, and interest rate risk has a positive effect on bank performance. However, credit risk can't mediate liquidity on bank performance and credit risk does not have a positive effect on bank performance.

Fibriyanti and Nurcholidah (2020) analyzed the factors that affect the financial performances the national foreign exchange private commercial bank and to analyze the effect of capital adequacy ratio (CAR), non-performing loans (NPL), return on assets (ROA), net interest margin (NIM), loan to deposit ratio (LDR) partially and simultaneously on the financial performance of the national foreign exchange national private commercial bank in Indonesia. The study concluded that the car, NPL, ROA, NIM, and LDR variables have a significant effect on bank financial performance.

Nguyen (2020) investigated how capital adequacy affected bank profitability in relation to Vietnam's implementation of the Basel II Accord. Return on equity and return on assets were used in this study to calculate bank profitability. The bank-specified variables, such as the capital adequacy ratio, net interest margin, non-performing loans, non-interest income, ownership, and regulatory variable proxies by the bank's application of Basel standards, as well as macroeconomic indicators, such as the growth rate of the gross domestic product and inflation rate, were used as additional potential profitability determinants in addition to the capital adequacy ratio. For the years 2010–2018, a sample of 22 Vietnamese commercial banks underwent panel data regression analysis. The study found that while state ownership and non-performing loan indicators have a negative impact on bank profitability, bank capital sufficiency, net interest margin, and non-interest revenue measures had a favorable correlation with profitability indicators. The study further separated the sample into two subsamples of large-sized banks and small-sized banks, which allowed for a more thorough examination of the effect that bank capital adequacy has on profitability. According to the

study, bank capital adequacy in Vietnam benefits small-sized banks' return on assets while having no discernible effect on the profitability of large banks.

Parvin (2019) examined the effect of liquidity and bank size on the profitability of the Bangladesh banks during the year 2011-2015. Seven commercial banks were selected and descriptive as well as correlations analysis statistics were used to conduct the study. Data from the annual reports of the banks were analyzed. The study stated that loan to asset ratio and bank size had a positive relation with return on asset (ROA) which was the indicator of profitability. This study also showed that deposit to asset ratio had a negative impact on the ROA of the selected banks. Although there were relationships among liquidity, bank size and profitability but liquidity and bank size did not have a significant influence on the profitability of the banks.

Yurttadur and Celiktas (2019) investigated the impact of NPL in Turkish banking sector. The main objective of the study is to establish the relationship between NPL and capital adequacy of bank. This study has sample of 13 banks over the period of 2009-2018. This study used correlation and regression techniques for data analysis. The study showed that there is a negative relationship between capital adequacy and bank profitability of Turkish banks. There have observed bankrupts because of high-interest payments, problems in liquidity flow, decreasing proper investment credit opportunities, recession in the balance sheet. These related problems propose state intervention to financial markets for the agenda by causing a socioeconomically imbalance.

Shabani, Morina and Misiri (2019) analyzed the effect of capital adequacy on the return on assets to the banking sector in Kosovo. This study used sample of 7 commercial banks of Kosovo over the period of 2008 – 2017. This study used secondary data and were obtained from audited reports of domestic banks and reports from the central bank of Kosovo. The study used the linear regression model analysis in order to find the conclusion. The study concluded that capital adequacy has a positive and significant impact on asset returns. The study also showed that capital adequacy has a positive impact on financial performance of banks.

Teshome, Debela, and Sultan (2018) in their study of financial performance of private commercial banks of Ethiopia Using the secondary data of 16 private commercial banks for the period of 2007 to 2016 concluded that capital adequacy ratio, credit interest income, and size of the bank has significant positive impact whereas non-performing loans, loan loss provision, leverage ratio and operational cost efficiency has significant negative impact on the financial performance of the private commercial bank of Ethiopia.

Jaouad and Lahsen (2018) examined the effects of bank-specific characteristics, bank governance, financial market structure, and macroeconomic conditions on Moroccan banks'performance and concluded that only operating management efficiency represented by the cost-to-income ratio (COST) is highly significant and negatively related to bank's performance. Also, the results indicate that bank size (SIZE) is positively related to ROA and statistically significant.

Al-Homaidi, Tabash, Farhan, and Almaqtari (2018) examined how macroeconomic variables and bank-specific factors affect the profitability of Indian commercial banks using return on assets, return on equity, and net interest margin as proxies for profitability. The study used bank size, asset quality, capital adequacy, liquidity, operating efficiency, deposits, leverage, assets management, and number of branches as proxies for bank specific factors and gross domestic product, inflation rate, interest rate, and exchange rate as proxies for macroeconomic variables. They came to the conclusion that all bank-specific variables, with the exception of branch count, have a significant impact on profitability as evaluated by net profit margin. They also came to the conclusion that the profitability is significantly negatively impacted by all of the macroeconomic variables employed in the study. Finally, they came to the conclusion that factors such as bank size, branch count, assets management ratio, and leverage ratio have a big influence on Indian commercial banks' profitability as assessed by return on assets.

Kawshala and Panditharathna (2017) examined the effect of bank specific factors of profitability in Sri Lankan domestic commercial banks. This study conducted with a complete panel data and utilized the sample frame annual reports of the domestic commercial banks in Sri Lanka. A sample of twelve domestic commercial banks in Sri Lanka was

employed in this study during the years 2011–2015.Profitability has been determined to be the dependent variable, and bank size, capital, deposits, and liquidity as independent factors. The profitability, size, equity ratio, deposit ratio, liquidity ratio, and logarithm of total assets were all determined in this study using return on assets. With the use of the STATA Statistical Software Package, regression models were examined. According to this study, the deposit ratio (0.027), capital ratio (0.000), and size (0.001) were major bank-specific factors that affected bank profitability in Sri Lanka. Thus, those variables and bank profitability have a positive correlation.

Barus, Muturi, Kibati and Koima (2017) analyzed the effect of capital adequacy on the financial performance in Kenya. The study has used sample of 83 banks of Kenya over the period of 2011-2015. Both primary and secondary sources of data were employed. The study used descriptive, multiple linear regression model and statistical package for the social sciences (SPSS) in order to find the conclusion. The study concluded that capital adequacy influenced the financial performance in Kenya and the regression results showed that there is a positive and significant relationship between capital adequacy and financial performance of savings and credit societies in Kenya.

Kipruto, Wepukhulu and Osodo (2017) analyzed how capital adequacy ratio influences financial performance of commercial banks in Kenya. The study used the sample of 14 commercial banks in Kenya over the period of 2013 to 2016. The study used purely quantitative research, correlation research design and descriptive research designs. Data were collected and analyzed by using descriptive and inferential statistics and multiple regression analysis was used to test the study research hypothesis. Therefore, the study concluded that there is a significant and positive relationship between capital adequacy and financial performance of commercial banks in Kenya.

Rahman, Hamid, and Khan (2015) conducted the study on determinants of profitability of banks in Bangladesh. This study investigated the capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities, liquidity as potential bank specific determinants as well as growth in gross domestic products, inflation as potential macroeconomic determinants of bank profitability by taking

25 commercial banks from Bangladesh for a period range from 2006 to 2013. Three different measures of profitability namely return on assets (ROA), net interest margin over total assets (NIM) and return on equity (ROE) were used in the study. The findings showed that liquidity has positive and significant impact on banks profitability whereas cost efficiency and off-balance sheet activities have negative and significant impact on profitability.

Petria, Capraru and Ihnatov (2015) examined the effect of bank size on performance in 27 European countries over the period 2004-2011. Regression and correlation were used by this study. The study suggested that bank size impacts the ROA positively and significantly. This study concluded that banks with higher total assets achieved better profits. The reason for this result could be due to larger banks being more likely to gain profits from economies of scale than smaller banks, with a higher degree of production differentiation and loan diversification.

Agbeja and Adelakun (2015) examined the effect of loans and advances on bank profitability as well as the impact of capital adequacy ratio on banks' exposure to credit risk. The linear approaches were used to test hypothesis of the study. This study has sample of 24 banks over the period of 2010-2014. The study showed that there has a positive and significant relationship between capital adequacy and bank's profitability. The study explained that banks with more equity capital are perceived to have more safety and such advantage can be translated into higher profitability. The higher the capital ratio, the more profitable a bank will be.

A study by Alemu and Negasa (2015) investigated the determinants of financial performance of commercial banks in Ethiopia. The findings revealed that measurement by return on assets and inflation displayed an insignificant positive influence on the financial performance of commercial banks in Ethiopia.

Dawood (2014) investigated the factor that impact the profitability of commercial banks in Pakistan. The study used the sample of 23 commercial banks in Pakistan over the period of 2009 to 2012. The study used secondary data from the financial statement of the commercial banks. The study used descriptive analysis, Pearson correlation analysis, and regression

analysis in order to draw the conclusion. The study concluded that size of the bank has insignificant and positive relationship with the profitability of commercial banks.

In China, Liang, Xu, and Jirapom (2013) examined the effects of board characteristics on bank performance and asset quality. The study found that the proportion of independent directors and the frequency of board meetings have significant positive impact, whereas the size of board have a considerably significant negative impact on both bank performance and asset quality. This was discovered using panel data from the 50 largest Chinese banks between the years of 2003 and 2010.

Yuanjuan and Shishun (2012) examined a study of Chinese commercial banks during 2005-2010. Ten (10) commercial banks were taken for the study. From the regression analysis, the study figured out the relationship between banks' capital adequacy ratio and different type of variables of a bank such as return on asset, return on equity, earning per share and deposit loan ratio. Study use the capital adequacy ratio as dependent variables and the independent variables are the other variables of the bank's which they considered as important variables for the research. From this regression analysis, the study found positive relationship between return on asset and capital adequacy ratio. But the study also found the negative relationship between capital adequacy ratio and return on equity. The study also found the negative relationship between capital adequacy ratio and credit risk as well as liquidity risk also negatively related with capital adequacy ratio.

Pasiouras and Kosmidou (2007) studied the profitability of 584 commercial domestic and international banks operating in the 15 European Union nations between 1995 and 2001 using return on average assets (ROAA) as a measure of bank performance. The findings demonstrate that the macroeconomic factors - inflation and real gross domestic product (GDP) growth, as well as the bank’s specific factors - size, capital adequacy and management effectiveness, affect the profitability of both domestic and foreign banks in the European Union.

The research by Molyneux and Thornton (1992) replicated Bourke's methods (1989). They researched the factors that affect the banking performance in 18 different European nations between 1986 and 1989 of whose outcomes supported Bourke's conclusions.

The performance of banks in 12 nations across Europe, North America, and Australia from 1972 to 1981 was analyzed by Bourke (1989). He discovered that size, liquidity, concentration, and inflation all had significant impact on the performance and profitability of banks.

Gurung and Gurung (2022) examined the factors determining the profitability of Nepalese commercial banks. As determining factors, Loan to Deposit ratio, Non-performing asset, Loan Loss provision, Capital Adequacy ratio and Bank size were taken as bank related variables and Gross Domestic Product (GDP) and Inflation rate were taken as external macroeconomic variables that influence bank profitability. A set of balanced panel data containing 13 Nepali commercial banks for 12-year period (2009-2020) with 156 observations was employed for analysis. The study revealed that loan to deposit, known as credit deposit ratio and GDP had a significant positive impact on the return on assets and net interest margin of commercial banks. However, non-performing assets weakly influenced the return on assets, but it had a significant negative effect on the equity return. There was a positive relationship between the size of bank and return on assets, but not significant. The variables loan loss provision and rate of inflation have a significant positive effect on the bank equity returns.

Neupane (2020) studied to examine the key determinants of profitability of Nepalese commercial banks. The study is based on quantitative information of 20 commercial banks for the period of 11 years (2010-2020). To investigate the major determinants of bank's profitability of Nepalese commercial banks, quantitative data from secondary sources has been abstracted. For the purpose, data with yearly frequency has been used in this study. Banking and Financial Statistics issued by NRB and the financial statements of banks from their websites are major sources of data. Further, data issued by Ministry of Finance and reports of World Bank also used as a source of data for this study. For the study purpose, return on assets (ROA) and net interest margin (NIM) have been used as the indicators of bank profitability. Further, the factors that might affect the bank profitability have been categorized as internal and external factors. Study used bank size, Capital adequacy, Loans, Deposits, Off-balance sheet activities and number of branches as internal factors of bank profitability. Similarly, bank specific variables; n-Bank Concentration Ratio and Banking

sector development and macro-economic variables; Annual real GDP, Annual inflation rate and Exchange rate have been used as the external determinants of bank profitability.

According to Pearson correlation coefficients, bank profitability as measured by ROA had a significant positive correlation with capital adequacy ratio, off balance sheet activities, and GDP growth rate, but a significant negative correlation with inflation rate. Furthermore, there was no significant relationship between ROA and size, loan, deposit, number of branches, concentration ratio, banking sector development, or exchange rate. Another indicator of profitability, NIM, was significantly correlated in the same direction with bank size, loan, deposit, and branch number.

This study concluded that the profitability of Nepalese commercial banks measured by return on assets was significantly influenced by the external factors. Among external factors, industry specific factors had higher impact on return on assets whereas macroeconomic variables had lower but significant impact on profitability of Nepalese commercial banks as measured by return on assets. Further, the profitability measured by net interest margin (NIM) was significantly influenced only by capital adequacy, absolute number of branches and annual inflation rate.

Gwachha (2019) has examined the macroeconomic and bank-specific factors that affected the Nepalese banking sector's profitability from 2004 to 2013. To determine the bank's profitability, Gwachha used return on assets (ROA), return on equity (ROE), and net interest margin (NIM). As bank-specific factors, Gwachha used total assets, equity capital to total assets, total loan to total assets, total deposit to total assets, and total liquid assets to total assets and as macroeconomic factors Gwachha used stock market capitalization, GDP, CPI and real interest rate. Gwachha came to the conclusion that the loan portfolio has a substantial negative impact on the profitability of the bank, whereas asset size and deposit to asset have a big positive impact. Additionally, Gwachha found that the real interest rate and stock market capitalization had positive effect on the performance of banks.

Tharu and Shrestha (2019) studied to determine and evaluate the effects of bank size on the profitability of commercial banks in Nepal using explanatory approach via panel research

design. The population of this study comprised of all licensed commercial banks in Nepal between the period of 2013 AD and 2018 AD. For this study, 8 commercial banks had been considered using simple random sampling from 28 banks. Bank Size in terms of asset had been used as the independent or determining factor whereas ROE had been used as determining factor of profitability and the data was collected from the Nepal Rastra Bank, and websites of related banks. The results proved that the profitability did not significantly influence by size of the bank (assets).

Bhattarai (2019) conducted the study to determine the factors that effects on profitability of Nepalese commercial banks. The study was based on secondary data of 11 banks with 77 observations for the period 2010/11 to 2016/17. The independent variables such as, credit deposit ratio, market share, liquidity, non-performing loans, GDP and inflation and dependent variable return on assets were taken for the study. The market share price, liquidity and GDP has explained the profitability in Nepalese sample commercial banks cases. To determine the bank's profitability, he has used return on assets (ROA) as dependent variable. The study concluded that Credit Deposit Ratio, Non Performing Loans has negative relationship with the Return on Assets (ROA) and Market Share, GDP and Inflation has positive relationship with the Return on Assets (ROA).

Chalise (2019) examined the impact of capital adequacy and cost-income ratio on the performance of Nepalese commercial banks. The descriptive research designs were conducted using panel data of 10 commercial banks operating in the Nepali economy with 100 observations for the period 2007/8 to 2016/17. The dependent variables return on an asset which measured bank performance while the independent variables used were bank size, debt-equity ratio, cost-income ratio, equity ratio, total capital adequacy. For the purpose of this study, secondary data had been used. The regression results revealed that the cost-income ratio had a negative significant impact on banks performance and total capital adequacy had a negative insignificant impact on the bank performance (ROA) whereas debt-equity ratio and bank size had a positive insignificant impact with bank performance and equity ratio had positive significant impact on bank performance. This study stated that there was a negative impact of cost income and capital adequacy on bank performance.

Gautam R. (2018) examined the determinants of financial performance of commercial bank in Nepal. In order to investigate the determinants of financial performance, 10 commercial banks had been taken as sample covering the period of time 2006/07 to 2016/17. Data were collected from annual report of the respective banks. The performance measures utilized in this study was return on assets whereas variables like capital adequacy, asset quality, management efficiency, liquidity ratio and gross domestic product were used to study the impact on profitability. Multiple linear regression models were employed for the analysis of data. The result showed positive relationship of return on assets with capital adequacy ratio, management efficiency and gross domestic product whereas negative with assets quality and liquidity management.

Pradhan and Shrestha (2016) conducted a study regarding the effect of liquidity on the performance of Nepalese commercial banks concluded that liquidity status of the bank plays important role in banking performance in case of Nepalese commercial banks. This study revealed that investment ratio, liquidity ratio and capital ratio have positive impact on bank performance measured in terms of return on equity (ROE) and return on assets (ROA). Sixteen commercial banks for the period 2005/06 to 2013/14 with 9 number of observations were financially analyzed. The secondary sources of data had been used from annual reports of the banks and supervision report of Nepal Rastra Bank.

Jha and Hui (2012) conducted a study comparing the financial performance of different ownership structured commercial banks in Nepal based on their financial characteristics and identify the determinants of performance exposed by the financial ratios, which were based on CAMEL Model. The determinants of performance exposed by the financial ratios, which were based on CAMEL Model. Eighteen commercial banks for the period 2005 to 2010 were financially analyzed. In addition, econometric model (multivariate regression analysis) by formulating two regression models was used to estimate the impact of capital adequacy ratio, non-performing loan ratio, interest expenses to total loan, net interest margin ratio and credit to deposit ratio on the financial profitability namely return on assets and return on equity of these banks. It was concluded from the multiple regression analysis that the capital adequacy ratio, interest expenses to total loan and net interest margin were significant but had a negative effect on ROA while non-performing loan and credit to deposit ratio did not have

any considerable effect on ROA. The capital adequacy ratio positively influenced the return on equity but the non-performing loan, credit to deposit ratio, interest expenses to total loan and net interest margin had no significant effect on ROE.

2.3.1 Summary of Empirical Review

Table 1

Summary of Empirical Reviews

S. N	Article	Author	Objectives	Methodology	Major findings
1.	The Determinants Of Profitability In The City Commercial Banks: Case Of China.	Jigeer and Koroleva, 2023	To investigate how internal and external factors affect the profitability of city commercial banks in China	Descriptive Analysis, Panel Data Regression Model, Fixed Effect And Random Effect Model	Factors like bank size, capital adequacy, credit quality, and efficiency, along with external factors like provincial GDP and inflation, significantly affect city commercial banks' profitability and no significant impact of liquidity
2.	Islamic Commercial Banks: An Analysis The Determinants Of Profit Distribution Management	Santoso and Samboro, 2022	To examine the effect of CAR on PDM with ROA as a mediating variable in Islamic Commercial Banks	Quantitative Approach, Classical Assumption Test, Path Analysis, Hypothesis Testing, Descriptive Analysis	Positive and significant effect of CAR on ROA
3.	Factors Determining Profitability Of	Gurung and Gurung, 2022	To observe the various aspects shaping	Descriptive Analysis And Pearson	Negative relation of CAR and NPA

	Commercial Banks: Evidence From Nepali Banking Sector.		commercial bank profitability in Nepal	Correlation Analysis	with ROA and ROE and positive relation with NIM. Positive relation of LTDR with ROA and NIM and negative relation with ROE. LLP found to have negative relation with ROA and positive relation with ROE and NIM.
4.	Influence Of Macro Economic Factors On Financial Performance Of Commercial Bank In Tanzania	Ally and Ally, 2022	To examine the influence of interest rate, inflation rate and exchange rate on the financial performance of commercial banks in Tanzania.	Descriptive Analysis And Inferential, Correlation Analysis	Positive impact of Inflation and negative impact of interest and exchange rates on financial performances observed.
5.	The Impact Of Capital Adequacy Ratio (CAR) On Islamic Banks' Performance In Selected Mena Countries	Alnajjar and Othman, 2021	To analyze the effect of capital adequacy on the performance ROA, and ROE in the designated MENA countries.	Regression Analysis, Descriptive Analysis	Negative significant influence of capital adequacy ratio on both performance indicators.
6.	Comprehensive Analysis On Determinants Of Bank Profitability In Bangladesh	Hossain and Ahamed, 2021	To investigate the relationship between bank profitability and the comprehensive list of bank-	Descriptive Analysis, Pooled Ordinary Least Square (POLS) Method For Regression Estimation.	Non-interest income, market share, bank size, and real exchange rates are significant explaining

			specific, industry-specific and macroeconomic variables in Bangladeshi Banks		variables if profitability is measured as NIM.
7.	Profitability Determinants Of Nepalese Commercial Banks	Neupane, 2020	To examine the key determinants of profitability of Nepalese commercial banks.	Regression Analysis, Hausman Test, Descriptive Analysis	Significant positive correlation of ROA with CAR, off balance sheet activities and GDP growth rate whereas significant negative correlation with inflation rate
8.	The Effect Of Macroeconomic & Bank Specific Factors On Banks Profitability: An Empirical Evidence From Banking Industry Of Pakistan	Sultan, Ahmed ,Ameen, Kumar, & Singh,2020	To study the impact of bank specific indicators such as asset size, credit risk, capital adequacy, and macroeconomic indicator such as the interest rate on the profitability of banks	Descriptive Analysis, Correlation Analysis And Regression Analysis	Positive relationship between GDP, deposits, asset quality, asset size, and liquidity with bank's profitability whereas capital adequacy ratio, inflation found to have negative effect on the bank's profitability
9.	Analysis Of Factors That Affect The Financial Performance Of Banks	Fibriyanti and Nurcholidah, 2020	To analyze the factors that affect the financial performance appraisal of the national foreign exchange	Descriptive Analysis, Multiple Regression Analysis, Hypothesis Testing	Significant effect of CAR, NPL, ROA, NIM, and LDR variables on bank financial performance.

			private commercial bank		
10.	Roles Of Capital Adequacy And Liquidity To Improve Banking Performance	Margono, Wardani, and Safitri, 2020	To study the effect of liquidity and adequacy on bank performance through interest rate risk and credit risk	Descriptive Analysis, Regression Analysis	Positive effect of Capital adequacy, liquidity on bank's performance
11.	Bank Capital Adequacy Ratio And Bank Financial Stability In Vietnam	Nguyen, 2020	To study the impact of the capital adequacy ratio, as well as control and micro variables, on the financial stability of commercial banks in Vietnam	Descriptive Analysis, Correlation Analysis, Regression Analysis	Capital adequacy has a positive and significant impact on ROA.
12.	Bank Specific And Macroeconomic Determinants Of Banking Profitability In Nepal	Gwachha, 2019	To examine the bank-specific and macroeconomic determinants of the profitability in the Nepalese banking sector	Descriptive Analysis, Panel Data Regression Model, Pooled OLS Model	Loan portfolio negatively affects bank profitability, while asset size and deposit-to-asset ratio boost it. Real interest rates and stock market capitalization has positive effect on bank's performance.
13.	The Influence Of Bank Size On Profitability.	Tharu and Shrestha, 2019	To determine and evaluate the effects of bank size on the profitability	Descriptive Analysis, Panel Research Design, Simple Random	No significant influence of Bank's Size (Assets) on the profitability of

			of commercial banks in Nepal	Sampling, Descriptive and Inferential Statistics	the bank.
14.	Effect Of Non-Performing Loan On The Profitability Of Commercial Banks In Nepal	Bhattarai, 2019	To examine the effect of non-performing loan on the profitability of Nepalese commercial banks	Descriptive Analysis, Correlation and Regression Analysis, Pooled Data Regression	Credit Deposit Ratio and Non-Performing Loans inversely impact ROA, while Market Share, GDP, and Inflation positively influence ROA
15.	Effect Of Liquidity And Bank Size On The Profitability Of Commercial Banks In Bangladesh	Parvin, Chowdhury, Siddiqua, and Ferdous, 2019	To determine the effect of liquidity and bank size on the profitability of the commercial banks in Bangladesh	Descriptive Analysis, Regression Analysis	Positive relation between Bank's size and ROA
16.	The Impact Of Capital Adequacy And Cost Income Ratio On Performance Of Nepalese Commercial Banks	Chalise, 2019	To examine the impact of capital adequacy and cost-income ratio on the performance of Nepalese commercial banks.	Descriptive Analysis, Regression Analysis	Cost-income ratio and capital adequacy negatively impact bank performance, while debt-equity ratio and bank size have a slight positive effect.
17.	The Place Of Non-Performing Loans In The Turkish Banking Sector	Yurttadur, Celiktas, and Celiktas, 2019	To analyze the effects of the non-performing loans on the banking sector	Descriptive Analysis,	Negative relationship between capital adequacy and profitability of banks.
18.	The Effect Of Capital Adequacy On Returns Of	Halit Shabani, Fisnik Morina, Valdrin Misiri, 2019	To analyze the effects of capital adequacy on	Descriptive Analysis, Inear Regression Model	Positive and significant impact of CAR on the financial

	Assets Of Commercial Banks In Kosovo		the return of assets to the banking sector in Kosovo.		performance of banks.
19.	Determinant Of Financial Performance Of Commercial Banks In Ethiopia: Special Emphasis On Private Commercial Banks	Teshome, Debela, and Sultan, 2018	To investigate the determinants of financial performance of private commercial banks in Ethiopia	Descriptive Analysis, Descriptive Statistics, Correlations And Multiple Linear Regression Analysis	Bank's profitability observed to have positive relationship with capital adequacy ratio, credit interest income, and size of the bank .
20.	Factors Affecting Bank Performance: Empirical Evidence From Morocco	Jaouad and Lahsen, 2018	To examines the effects of bank-specific characteristics, bank governance, financial market structure, and macroeconomic conditions on Moroccan banks' performance	Descriptive Analysis, Panel Data Regression Method, Correlation Method,	Bank size found to be positively associated with ROA
21.	Determinants Of Financial Performance: An Evidence From Nepalese Commercial Banks	Gautam, 2018	To investigate the determinants of financial performance in the commercial banks in Nepal	Descriptive Analysis, Multiple Linear Regression Model	Return on assets is positively linked to capital adequacy, management efficiency, and GDP, but negatively associated with asset quality and liquidity management
22.	Bank Specific And Macro-Economic	Al-Homaidi, Tabash, Farhan, &	To examine the determinants of Indian	Descriptive Analysis, Regression	Significant impact of factors like

	Determinants Of Profitability Of Indian Commercial Banks: A Panel Data Approach	Almaqtari, 2018	commercial banks' profitability	Analysis, Correlation And Multicollinearity Diagnostics	bank size, branch count, asset management, and leverage ratio whereas notably adverse impact of macroeconomic variables on profitability
23.	Effect Of Bank Specific Factors On Profitability Of Commercial Banks In Ethiopia	Hirindu Kawshala, Kushani Panditharathna, 2017	To examine the effect of bank specific factors in the profitability of Sri Lankan domestic commercial banks	Descriptive Analysis, Regression Analysis	Positive relationship between bank size and bank's profitability.
24.	Effect Of Capital Adequacy On The Financial Performance Of Savings And Credit Societies In Kenya	Barus, Muturi, Kibati and Koima, 2017	To establish the effect of capital adequacy on the financial performance of savings and credit societies in Kenya	Descriptive Analysis, Multiple Linear Regression Models	A positive and significant relationship between capital adequacy and financial performance.
25.	The Influence Of Capital Adequacy Ratio On The Financial Performance Of Second-Tier Commercial Banks In Kenya	Kipruto, Wepukhulu and Osodo, 2017	To determine the influence of capital adequacy ratio on the financial performance of commercial banks in Kenya	Descriptive Analysis, Correlation Research Design, Multiple Regression Analysis	Positive relationship between capital adequacy and financial performance of commercial banks.
26.	Impact Of Liquidity On Bank Profitability In Nepalese Commercial	Pradhan and Shrestha, 2016	To examine the effect of liquidity on the performance of Nepalese commercial	Descriptive Analysis, Regression Model, Correlation Analysis,	Positive impact of investment ratio, liquidity ratio and capital ratio on bank's

	Banks		banks		performance (ROA and ROE)
27.	Determinants Of Bank Profitability: Empirical Evidence From Bangladesh	Rahman, Hamid, and Khan, 2015	To investigate capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities, liquidity as potential bank specific determinants as well as growth in gross domestic products, inflation as potential macroeconomic determinants of banks' profitability	Descriptive Analysis, Regression Analysis, Correlation Analysis,	Positive and significant impact of liquidity whereas significant negative impact of cost efficiency and off-balance sheet activities observed on banks' profitability.
28.	Determinants Of Banks' Profitability: Evidence From Eu 27 Banking Systems	Nicolae Petria, Bogdan Capraru, Iulian Ihnatov, 2015	To determine the factors affecting profitability of Banks in EU27	Descriptive Analysis, Regression Analysis	Positive and significant relationship between bank size and profitability.
29.	Capital Adequacy Ratio And Bank Profitability In Nigeria: A Linear Approach	Agbeja and Adelakun, 2015	To examine the effect of capital adequacy ratio on banks' profitability	Descriptive Analysis, Regression Analysis, Correlation Analysis	Positive and significant relationship between capital adequacy and bank's profitability.
30.	Assessment Of Banking Performance Using Capital	Dakito Alemu, 2015	To evaluate the financial performance of banking sector	Descriptive Analysis, Central Tendency	The measurement by return on assets and

	Adequacy In Ethiopia		in the Ethiopia and also to see the relation between capital adequacy and bank's performance	Measures, Regression Analysis	inflation displayed an insignificant positive influence on the financial performance of commercial banks in Ethiopia.
31.	Factors Impacting Profitability Of Commercial Banks In Pakistan For The Period Of (2009-2012)	Usman Dawood, 2014	To evaluate the profitability of the 23 commercial banks operating in Pakistan for the period of 2009 to 2012	Descriptive Analysis, Ordinary Least Square (OLS) Method, Descriptive Statistics, Regression Analysis	Positive and insignificant relationship between Bank's size and profitability of banks.
32.	Board Characteristics And Chinese Bank Performance.	Liang, Xu, and Jirapom, 2013	To analyze the impact of Board on bank performance and bank asset quality in China	Descriptive Analysis, Regression Analysis, Correlation	Significant positive impact of Proportion of independent directors and Frequency of board meetings, whereas considerably significant negative impact of Board Size on both the bank's performance and asset quality.
33.	A Comparison Of Financial Performance Of Commercial Banks: A Case Study Of Nepal.	Jha and Hui, 2012	To compare the financial performance of different ownership structured commercial banks in Nepal based on their	Descriptive Financial Analysis, Econometric Multivariate Regression Model	Capital adequacy, interest expenses, and net interest margin negatively impacted ROA but positively

	financial characteristics and identify the determinants of performance exposed by the financial ratios	influenced ROE. No significant impact of Non-performing loans and credit-to-deposit ratio observed.

2.4 Research Gap

Various Nepalese researchers, international organizations, central banks, as well as public and private entities, have undertaken investigations on the determinants impacting the profitability of commercial banks. Notably, previous research outcomes predominantly relied on outdated data and employed qualitative research methodologies. Additionally, a common limitation was the lack of explicit guidance on the performance strategies that banks should adopt based on their findings.

The primary aim of this study is to identify the factors influencing the profitability of chosen commercial banks in Nepal. Numerous international and Nepalese studies have concentrated on singular determinants and their respective impacts on profitability. However, only a limited number of research endeavors have comprehensively explored multiple factors and variables that collectively contribute to the profitability of banks.

CHAPTER III
RESEARCH METHODOLOGY

Research methodology refers to the various sequential steps to be adopted by a researcher in studying a problem with certain objectives in view. In other words, research methodology describes the methods and processes applied in the entire aspect of the study. It is a way to solve the research problem systematically and scientifically. In fact, research methodology is much vague than research methods i.e., research method is just a part of research methodology. It considers the logic behind the use of the methods in the context of research study and explains why a particular method or technique is used. Research methodology is concerned not only about the different types of methods used but also about various other facts like what data have been collected, what are the purpose and problem of research, why hypothesis has been formulated etc.

Thus, this chapter explains the methodology that is employed in this study which is divided into five sections. Section one provides a description of research design, sections two deals with population, sample and sample design, section three describes the nature and sources of data along with the instrument of data collection, section four describes method of analysis for the study and finally, section five presents research framework and definition of variables. Research methodology is a systematically way of solving the research problem. It may be understood as science of studying that how research is done scientifically as well as systematically (Kothari, 1989).

3.1 Research Design

This study has employed descriptive and causal comparative research designs to deal with the fundamental issues associated with factors (internal and external) that impact the profitability of Nepalese commercial banks. The descriptive research design has been adopted for fact finding and searching adequate information about performance in Nepalese commercial banks. Descriptive research is a process of accumulating facts. It describes phenomenon as they exist. Such design involves the systematic collection and presentation of

data to give clear picture of a particular situation. Descriptive research design helps to reduce data into manageable from.

This study has also employed causal comparative research design to determine the effect of bank's size, capital adequacy, liquidity, Operational management efficiency , market concentration, board size, number of independent directors on return on assets and return on equity of commercial banks. This research design has been adopted to examine the causal relationship between the independent variables and performance in commercial banking sector of Nepal and to investigate the possible causes affecting the performance by observing the existing consequences and searching for the possible factors leading to change in these parameters.

3.2 Population and Sample, and Sample Design

The research has used annual data of the commercial banks for 10 years from Fiscal year 2012/13 to 2021/22 for the purpose of study. The population for the study is all the commercial banks in Nepal during the period of investigation. The sample size of 5 banks is considered for the study, including Government Banks and Private Sector Banks.

Table 2

List of sample commercial banks

Name of bank	Study period
Nabil Bank Ltd	2012/13 to 2021/22
Siddhartha Bank Ltd	2012/13 to 2021/22
Nepal Bank Ltd	2012/13 to 2021/22
Machhapuchchhre Bank Ltd.	2012/13 to 2021/22
Agricultural Development Bank Ltd	2012/13 to 2021/22

3.3 Source of Data

The source of data is secondary where the past ten years of data of each selected commercial banks are used for the analysis. The main sources of secondary data collection for the study are as follows:

a. Annual reports of the selected commercial banks for, ROA, ROE, liquidity ratio, operating costs
b. NRB report (Economic Review) for macroeconomic data
c. Website of selected commercial Banks

Convenience sampling technique has been used for data collection procedure. This method is dependent on the ease of access to the subject or source. Also due to limitation of time and cost, this non-probabilistic technique seems to fit better for the sampling collection.

3.4 Method of Analysis

The research uses various types of descriptive statistical tools such as mean, median, and standard deviation along with various graphical tools such as line charts, bar charts, pie charts, etc. Furthermore, the study employs inferential statistical tools to describe the nature of the relationship between dependent and independent factors, such as regression and correlation.

The study uses Multivariate Regression Analysis to study the impact of independent variables against the dependent variable. A multivariate regression analysis is a statistical tool that is used to study the relationship between multiple independent factors and their effect on the dependent factor.

3.4.1 Descriptive Statistics

Descriptive statistics serve the purpose of presenting numerical data in a more presentable and understandable format, aiding in the simplification of extensive data sets in a meaningful manner (like mean, standard deviations, minimum and maximum values of variables which used to explain the characteristics of sample banks) during the period 2012/13 to 2021/22.

3.4.2 Correlation Analysis

Correlation is a statistical tool design to measure the degree of association between two or more variables. If the changes in one variable affects the changes in other variable, then the variable are considered to be co-related. When it is used to measure the relationship between two variables, then it is called simple correlation. The coefficient of correlation measures the degree of relationship between two sets of figures. This study uses correlation analysis to examine the relationship between dependent variables (Return on Assets and Return on Equity) and independent variables (bank size, market concentration, capital adequacy ratio, liquidity, operations management efficiency, board size, number of individual directors, and inflation).

3.4.3 Regression Analysis

Regression analysis comprises a collection of statistical techniques employed to estimate connections between a dependent variable and one or multiple independent variables. Its application extends to evaluating the associations between these variables and predicting their future relationships. This analytical approach enables the quantification of the average relationship among multiple variables. Furthermore, it explains diverse statistical significance tests, such as the t-test, F-test, and linear regression analysis, for model validation. To assess individual effects, all models undergo testing via t-tests using the Statistical Package for the Social Sciences (SPSS 25).

3.4.4 Model Specification

The econometric models used in this study tries to analyze the impact of various internal and external factors on profitability of commercial bank in Nepal.

In order to examine the impact of internal and external factors that affect the profitability of the commercial banks in Nepal, the following regression model shall be used that will help us to understand the nature of relationship between dependent and independent factors:

$Yit = \alpha it + \beta it\ Xit + \varepsilon it$ ……..(1)

Where,

Yit = Performance of Bank i at time t as expressed by ROA and ROE.

i = Individual Bank

t= Time

αit = Constant

Xit = Independent Variables

βit = Represents magnitude of relationship between dependent and independent variables

εit =Error term

By extending the equation (1) to reflect the variables as described above, the baseline model will be formulated as follows:

Model 1

$ROA = \alpha + \beta_1 SIZE + \beta_2 CA + \beta_3 LIQ + \beta_4 OME + \beta_5 CONC + \beta_6 BS + \beta_7 IND + \beta_8 GDP + \beta_9 INF + et$

Model 2

$ROE = \alpha + \beta_1 SIZE + \beta_2 CA + \beta_3 LIQ + \beta_4 OME + \beta_5 CONC + \beta_6 BS + \beta_7 IND + \beta_8 GDP + \beta_9 INF + et$

Where,
SIZE = Bank's size

CA = Capital Adequacy

LIQ = Liquidity

OME = Operations Management Efficiency

CONC = Concentration

BS = Board Size

IND = Independent Directors

GDP = GDP Per Capita Growth

INF = Inflation

α = Constant

et = Error term

β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8 and β_9 are parameters of the independent variables.

3.5 Research Framework and definition of variables

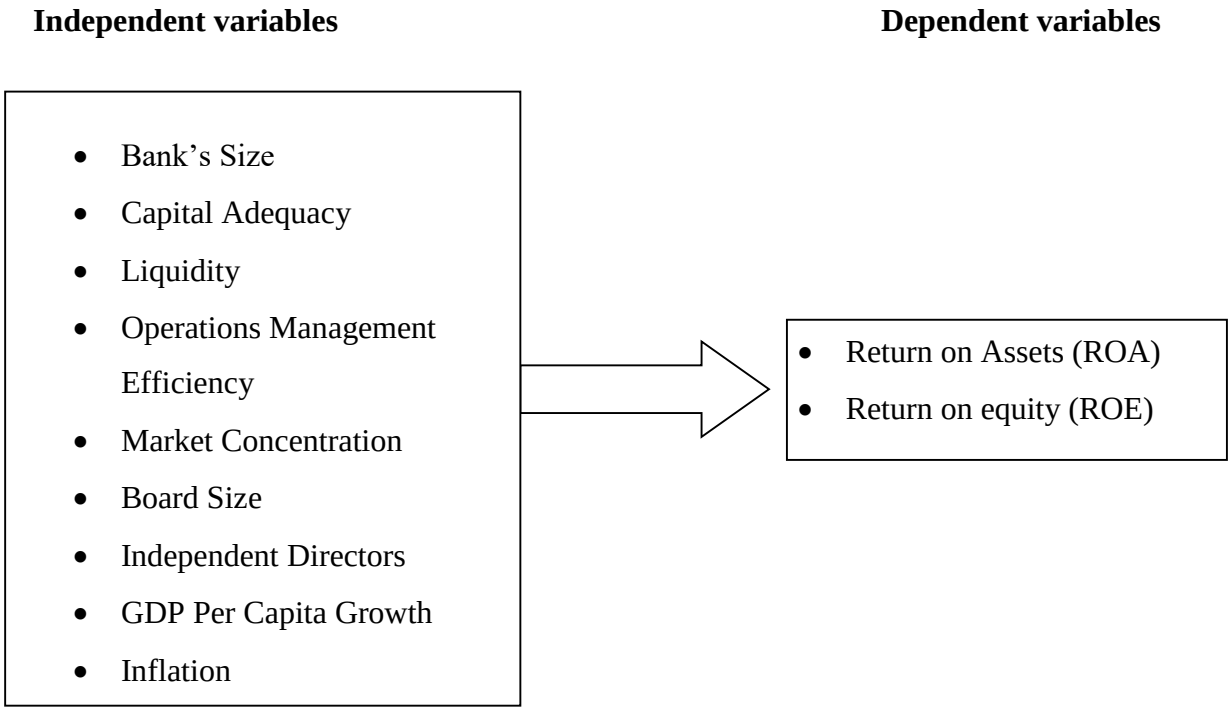
3.5.1 Research Framework

A conceptual framework serves as a fundamental structure comprising abstract components that symbolize the observational, experiential, and analytical facets of a conceived process or system. The integration of these components forms the foundation for anticipated results. In research, the framework is employed to delineate potential courses of action or to articulate a favored approach to a concept. It presents a graphical representation of variables within the study, illustrating the connections between dependent and independent variables.This study has used return on assets (ROA) and return on equity (ROE) as the dependent variables to evaluate a bank's performance.

Table 3

Research Framework

Variables	**Measures**	**Notation**
Return on Assets	Net Income/ Total Assets	ROA
Return on Equity	Net Income/ Equity	ROE
Bank's size	Natural Log of Total Assets of the Bank	SIZE
Capital Adequacy	Total Capital/ Total Risk Weightage Assets	CA
Liquidity	Total Loans/ Total Deposits	LIQ
Operations Management Efficiency	Total Interest Income/ Total Operating Expense	OME
Concentration	IT measure calculated by dividing the assets of banks with the assets of all banks operating in the country.	CONC
Board Size	The number of members in the board	BS
Independent Directors	The number of independent directors	IND
GDP Per Capita Growth	Annual percentage growth rate of GDP per capita	GDP
Inflation	Annual Inflation Rate (CPI)	INF



Research Framework Source: Jaouad & Lahsen, (2018)

Figure 1

Conceptual Framework

Dependent Variables

i. Return on Assets (ROA)

This ratio displays a company's level of profitability in relation to its total assets. It provides insight into how well a company's management uses its assets to generate earnings for a manager, investor, or analyst. It is typically computed by dividing total assets by net income. Net income, or profit after taxes, is the amount of income taken from the company's income statement. Similarly, assets are extracted from the balance sheet which contains cash and cash-equivalent items like as receivables, inventories, land, capital equipment as depreciated, along with the value of intellectual property. This ratio is calculated as follows:

$$\text{Return on Assets} = \frac{\text{Net income}}{\text{Total assets}}$$

ii. Return on Equity (ROE)

Return on equity is a measure of the profitability of a business in relation to the equity. Equity can be computed by deducting total assets with liabilities so return on equity is a measure of how well a company uses investments to generate earnings growth. In other words, this ratio shows how much profit each rupee of common stockholders' equity generates. This is an important measurement for potential investors because they want to see how efficiently a company will use their money to generate net income. This ratio is calculated as follows:

$$\text{Return on Equity} = \frac{\text{Net income}}{\text{Shareholders equity}}$$

Independent Variables

i. Bank's Size

The ability of a Bank, the diversity and number of manufacturing capabilities, or the amount and multiplicity of services or businesses it can simultaneously give to its consumers are all indicators of its size. The size of a company's management team or the number of assets it has in comparison to other companies in the same industry are, to put it simply, the best indicators of how large a company is (Sritharan, 2015).

Gross sales or gross asset value, the logarithm of total assets, the number of staff, and sales turnover are frequently used to gauge size. A company's expansion in size might take the form of more revenues, earnings, assets, or personnel numbers, all of which are necessary for improved financial health and success (Tharu & Shrestha, 2019).

The total assets of the Bank has been considered as its size.

ii. Capital Adequacy

The bank's ability to meet its obligations on time and to take on other risks like credit risk and operational risk, among others, is assessed by its capital adequacy ratio. In its most basic form, capital acts as a safety net for potential losses and safeguards depositors and other lenders. It is expressed as a percentage of a bank's risk-weighted credit exposures (Shrestha, 2015).

It is a measurement of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. Is used to protect depositors and promote the stability and efficiency of financial systems around the world.

It is calculated as:

$$\text{Capital Adequacy} = \frac{\text{Total Capital}}{\text{Risk Weighted Assets}}$$

iii. Liquidity

Bank liquidity refers to the ability of the bank to ensure the availability of funds to meet financial commitments or maturing obligations at a reasonable price at all times. Bank liquidity means a bank having money where they need it particularly to satisfy the withdrawal needs of the customers (Wasiuzzaman & Tarmizi, 2010). Generally, the ratio of loan to deposit is used to measure the liquidity of bank. Banks use the deposit collected from customers to grant loan. If the extensive amount of deposit is used by the bank to provide loan, then it will make high liquidity ratio of the bank (Shrestha, 2019)

Liquidity is measured as:

$$\text{Liquidity} = \frac{\text{Total Loan}}{\text{Total Deposit}}$$

iv. Operations management efficiency

A bank must be able to control or limit its costs in order to produce output without sacrificing quality. Theoretically, a bank that can properly and efficiently control its expenses should be more lucrative. A ratio of total interest income to total operating expenses shall be considered to measure the operations management efficiency (Shrestha, 2019). A high operational efficiency ratio reflects a bank's ability to effectively manage its operating expenses and thus is likely to affect profitability positively (Hassan, 2002).

$$\text{Operations management efficiency} = \frac{\text{Total interest income}}{\text{Total operating expenses}}$$

v. Market Structure/Concentration

The concentration ratio measures the degree of concentration in the banking sector's assets. In other words, the concentration ratio compares the total assets of the banks considered as large banks in the sector to the total assets of all the banks in the sector (Alagoz, Akalın, & Ceylan, 2016).

vi. Corporate Governance

A set of relationships between a company's management, its board, its shareholders, and other stakeholders that provides the structure through which the company's objectives are set, as well as the means of achieving those objectives and monitoring performance. It aids in the definition of authority and responsibility, as well as how corporate decisions are made.

For the purpose of this study, in order to measure impact of corporate governance on banks profitability, the number of members in the board and the percentage of independent directors has been considered.

vii. GDP Per Capita Growth

GDP per capita measures the economic output of a nation per person. It seeks to determine the prosperity of a nation by economic growth per person in that nation. Per capita income measures the amount of money earned per person in a nation. (Davydenko, 2011) employed the fixed-effects technique and proved that the gross domestic product reveals a significant positive relation with the return on assets of Ukrainian banks. (Solovjova & Saksonova, 2011) found that the gross domestic product growth had a progressive contribution to profits and inflation adversely affects return on assets in Latvian commercial banks.

As stated by International Monetary Fund (IMF), an increase in real GDP is interpreted as a sign that the economy is doing well.

viii. Inflation

As defined by International Monetary Fund, Inflation is the rate of increase in prices over a given period of time. Ifeanyi and Chukwuma (2016) found that the general increase in prices results in inflation, which reflects a weak purchasing power of the nation’s currency, affirms a seamless negative association between the firm value and inflation.

CHAPTER IV
RESULTS AND DISCUSSION

This section provides systematic presentation, interpretation and analysis of secondary data to deal with various issues associated with the determinants of profitability of Nepalese commercial banks. The purpose of this chapter is to analyze and interpret the data collected during the study. The analysis part helps result to make clearer and more understandable. It provides the systematic and organized presentation and analysis of data that will put light upon the impact of bank size, market concentration, capital adequacy ratio, liquidity, operations management efficiency, board size, number of individual directors, and inflation on performance of Nepalese commercial banks. Various statistical model described in chapter three is used to extract the output and interpret the information.

4.1 Descriptive Analysis

The explanation of the descriptive statistics of the data has been provided in this section. It provides summaries about the variables that are incorporated for the study**.** Table 4 provides summary statistics of variables used in this study for the period 2012/13 to 2021/22. The structure of independent variables; bank size, market concentration, capital adequacy ratio, liquidity, operations management efficiency, board size, number of individual directors, and inflation and dependent variables (return on assets and return on equity) are included in this section.

Table 4

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	50	0.49	3.03	1.68	0.63
ROE	50	5.33	44.07	15.58	7.18
Bank Size	50	1.20	5.22	3.00	1.43
Concentration	50	2.07	8.11	4.59	1.37
CAR	50	-0.49	23.31	13.72	3.86
LIQ	50	0.09	1.07	0.82	0.14
OME	50	0.95	1.92	1.29	0.20
Board Size	50	5	9	6.88	1.206
IND	50	0	1	0.46	0.503
GDP	50	-3.26	7.99	3.65	3.01
INF	50	3.60	9.92	6.54	2.30

This table 4 shows descriptive statistics- mean, standard deviation, minimum and maximum values of dependent and independent variables with 50 observations for variables for the period of 2012/13 through 2021/22.

Clearly, return on assets ranges from a minimum of 0.49 percent to a maximum of 3.03 percent, leading to an average of 1.68 percent. The average return on equity of the Nepalese commercial banks during the study period ranges from a minimum of 5.33 percent to a maximum of 44.07 percent, leading to an average of 15.58 percent. Moreover, average bank size varies from a minimum of Rs. 1.20 billion to a maximum of Rs. 5.22 billion, leading to an average of Rs. 3 billion. The average concentration ranges from a minimum of 2.07 percent to a maximum of 8.11 percent, leading to an average of 4.59 percent. The average capital adequacy ratio ranges from minimum of -0.49 percent to maximum of 23.31 percent, leading to the average of 13.72 percent. Similarly, the average liquidity ranges from minimum of 0.09 to a maximum of 1.07 and an average of 0.82. Likewise, the average operational management efficiency ranges from minimum of 0.95 to a maximum of 1.92 percent, leading to an average of 1.29. Similarly, the average leverage ratio ranges from a minimum of 0.320 percent to a maximum of 3.360 percent, leading to an average of 1.019

percent. Likewise, the average board size varies from minimum of 5 to a maximum of 9, leading to an average of 6.88. Moreover, the average number of independent directors ranges from minimum of 0 to a maximum of 1, leading to an average of 0.46. In addition, the average GDP ranges from minimum of -3.26 percent to a maximum of 7.99 percent, leading to an average of 3.65 percent. Lastly, the average inflation ranges from minimum of 3.60 percent to a maximum of 9.92 percent, leading to an average of 6.54 percent.

4.2 Correlation Analysis

Pearson correlation coefficients have been computed and results have been presented in the Table 5. Correlation is a statistical tool design to measure the degree of association between two or more variables. This study uses correlation analysis to examine the relationship between dependent variables and independent variables.

Table 5 presents bivariate Pearson correlation coefficient between different pairs of variables during the period 2012/13 to 2021/22. The results are based on panel data of 5 commercial banks with 50 observations for the period 2012/13 to 2021/22. The dependent variables are and ROE. The independent variables are SIZE, CA, LIQ, OME, CONC, BS, IND, GDP and INF.

Table 5

Correlation Analysis

Variables	ROA	ROE	SIZE	CONC	CA	LIQ	OME	BS	IND	GDP	INF
ROA	1										
ROE	.517**	1									
SIZE	-.321*	-.500**	1								
CONC	.302*	0.259	-0.042	1							
CAR	.347*	-.423**	.393**	-0.102	1						
LIQ	-0.158	-.395**	.530**	-0.246	.446**	1					
OME	.614**	.436**	-0.254	.355*	0.152	-0.187	1				
BS	0.076	-0.010	-.346*	-0.133	0.026	-0.098	-0.103	1			
IND	-0.082	-0.269	.700**	0.151	.356*	.319*	0.090	-0.277	1		
GDP	0.205	-0.076	-0.056	-0.016	0.130	0.158	0.124	-0.118	-0.177	1	
INF	0.031	.488**	-.668**	0.156	-.464**	-.360*	0.103	.433**	-.502**	-.417**	1

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

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

Table 5 depicts that, ROA has negative relationship with bank size i.e., -0.321 which refers that larger bank size leads to decrease in return on assets and vice versa. The negative relationship between ROA and the bank size is significant since p-value is less than 5% i.e., 0.023. Whereas, ROA has positive relationship with market concentration which implies that, greater the market concentration, higher is the return on assets. The positive relationship between ROA and the market concentration is significant since p-value is less than 5% i.e., 0.033. Similarly, it shows that there is a positive relationship between capital adequacy ratio and return on assets i.e., 0.347. It indicates that increase in capital adequacy ratio leads to increase in return on assets. The positive relationship between ROA and the capital adequacy ratio is significant since p-value is less than 5% i.e., 0.013.

Moreover, it shows that, ROA has negative relationship with liquidity i.e., -0.158 which refers that higher liquidity leads to decrease in return on assets and vice versa. The negative relationship between ROA and the liquidity is insignificant since p-value is greater than 5% i.e., 0.272. Whereas, ROA has positive relationship with operational management efficiency i.e., 0.614 which implies that, greater the operational management efficiency, higher is the return on assets. The positive relationship between ROA and operational management efficiency is significant since p-value is less than 5% i.e., 0.000.

Similarly, ROA has positive relationship with board size i.e. 0.076 which refers that larger board size leads to increase in return on assets and vice versa. The positive relationship between ROA and the board size is insignificant since p-value is greater than 5% i.e. 0.600. Whereas, ROA has negative relationship with number of independent directors which implies that, greater the number of independent directors, lower is the return on assets. The negative relationship between ROA and the number of independent directors is insignificant since p-value is greater than 5% i.e. 0.571.

Correlation between ROA and GDP is positive i.e. 0.205 which refers that higher GDP leads to increase in return on assets and vice versa. However, the positive relationship between ROA and the GDP is insignificant since p-value is greater than 5% i.e. 0.153. Similarly, ROA has positive relationship with inflation which implies that, greater the inflation, higher

is the return on assets. The positive relationship between ROA and the market concentration is highly insignificant since p-value is greater than 5% i.e. 0.832.

Table 5 depicts that, ROE has negative relationship with bank size i.e. -0.500 which refers that larger bank size leads to decrease in return on equity and vice versa. The negative relationship between ROE and the bank size is significant since p-value is less than 1% i.e. 0.000. Whereas, ROE has positive relationship with market concentration i.e 0.259 which implies that, greater the market concentration, higher is the return on equity. However, the positive relationship between ROE and the market concentration is insignificant since p-value is greater than 5% i.e. 0.069. On the other hand, it shows that there is a negative relationship between capital adequacy ratio and return on equity i.e -0.423. It indicates that increase in capital adequacy ratio leads to decrease in return on equity. The negative relationship between ROE and the capital adequacy ratio is significant since p-value is less than 1% i.e. 0.002.

Moreover, it shows that, ROE has negative relationship with liquidity i.e. -0.395 which refers that higher liquidity leads to decrease in return on equity and vice versa. The negative relationship between ROE and the liquidity is significant since p-value is less than 1% i.e. 0.005. Whereas, ROE has positive relationship with operational management efficiency i.e 0.436 which implies that, greater the operational management efficiency, higher is the return on equity. The positive relationship between ROE and operational management efficiency is significant since p-value is less than 1% i.e. 0.002.

Similarly, ROE has negative relationship with board size i.e. -0.010 which refers that larger board size leads to decrease in return on equity and vice versa. The positive relationship between ROE and the board size is highly insignificant since p-value is greater than 5% i.e. 0.947. ROE has negative relationship with number of independent directors as well i.e -0.269 which implies that, greater the number of independent directors, lower is the return on equity. The negative relationship between ROE and the number of independent directors is insignificant since p-value is greater than 5% i.e. 0.059.

Correlation between ROE and GDP is negative i.e. -0.076 which refers that higher GDP leads to decrease in return on equity and vice versa. However, the positive relationship

between ROE and the GDP is highly insignificant since p-value is greater than 5% i.e. 0.599. Similarly, ROE has positive relationship with inflation which implies that, greater the inflation, higher is the return on equity. The positive relationship between ROE and the market concentration is highly significant since p-value is less than 5% i.e. 0.000.

4.3 Regression Analysis

In order to test the statistical significance and robustness of the results, this study also relies on secondary data analysis based on regression model specified in chapter 3. Regression analysis is a set of statistical procedure for describing, predicting and estimating the relationship between the interrelated dependent and independent variables. Regression analysis describes the scope of variables more than correlation analysis. The impact of independent variables is identified by linear regression model. It explains how much the independent variables will have impact on dependent variables. The regression analysis is carried out using SPSS version 25 software under multiple regression models. In this section, an attempt has also been made to test the validity of the model through statistical test of significance such as T-test, F-test and adjusted coefficient of determination (*Adj. R^2).*

4.2.1 Regression Analysis for ROA

Table 6

Regression Model Summary (ROA)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777	0.603	0.514	0.44205

a) Dependent Variable: ROA

b) Predictors: (Constant), INF, OME, CONC, LIQ, GDP, BS, CAR, IND, Bank Size

The result in Table 6 indicates that there is significant impact of the independent variables on ROA. The R value of 0.777 indicates strong relationship between ROA and independent variables as a whole. Similarly, the value of R^2 is 0.603 which means 60.3 % variation in ROA is explained by independent variables. The value of adjusted R^2 is 0.514 which means independent variable is accounted for up to 51.4% ROA. Remaining 48.6% can be achieved

through other factors outside these independent variables. Likewise, standard error of estimate 0.44205 indicates the variability of the observed value of ROA from regression line is 0.44205 units. Thus, it has shown that there is significant relationship between independent variables and ROA.

ANOVA Analysis

The appropriateness of regression is done by using ANOVA in case of reliable outcomes. The better model is obtained having confident level 95% and above.

Table 7

Anova Table (ROA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.886	9	1.321	6.758	0.000
	Residual	7.816	40	0.195		
	Total	19.702	49			

a. Dependent Variable: ROA

b. Predictors: (Constant), INF, OME, CONC, LIQ, GDP, BS, CAR, IND, SIZE

Results in Table 7 show the F-statistics of the regression model is 6.758, which shows that the regression model is fit and can be used in the study because it has significant p-value less than 5 percent level of significance. The regression model has a confidence level of above 95% i.e. our regression model and its results are reliable. The F-test is used to identify the existence of significant relationship between dependent variable and set of independent variables.

Regression Coefficient (ROA)

Here, ROA is the measure for analyzing the profitability and X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8 and X_9 represents the SIZE, CONC, CAR, LIQ, OME, BS, IND, GPD and INF respectively.

It is observed that the three variables are statistically significant at 5% significance level namely bank size, capital adequacy and operating management efficiency. This implies that

bank size, capital adequacy and operating management efficiency have statistically significant impact on ROA of commercial banks. In regression, t-value refers to quantification of difference between populations mean.

Table 8

Regression Coefficient (ROA)

Model	β	t-Value	Sig.
(Constant)	-0.371	-0.418	0.678
SIZE	-0.189	-2.078	0.044
CONC	0.110	1.999	0.052
CAR	0.070	3.108	0.003
LIQ	-0.140	-0.231	0.819
OME	1.195	3.014	0.004
BS	0.029	0.448	0.657
IND	-0.123	-0.588	0.560
GDP	-0.004	-0.130	0.897
INF	-0.063	-1.074	0.289

From the table 8, the estimated equation can be written by taking the values from the model:

$ROA = -0.371-0.189X_1+0.110X_2+0.070X_3-0.140X_4+1.195X_5+0.029X_6-0.123X_7-0.004X_8-0.063X_9$

The beta coefficient of SIZE is -0.189, which indicates that 1 percent increase in SIZE decreases ROA by 0.189 percent. The negative effect of SIZE on ROA is significant since p-value 0.2044 for the coefficient is less than significant level 5 percent.

Similarly, the beta coefficient of CONC is 0.110, which indicates there is positive relationship between ROA and CONC and 1 percent increase in CONC increases ROA by 0.110 percent. The positive effect of CONC on ROA is not significant since p-value 0.052 for the coefficient is higher than significant level 5 percent.

The beta coefficient of CAR is 0.070 which indicates that 1 percent increase in CAR increases ROA by 0.070 percent. The positive effect of CAR on ROA is significant since p-value 0.003 for the coefficient is less than significant level 5 percent.

However, it can be observed that the beta coefficient of LIQ is -0.140 which indicates that 1 percent increase in LIQ decreases ROA by 0.140 percent. The negative effect of LIQ on ROA is highly insignificant since p-value 0.819 for the coefficient is greater than significant level 5 percent.

On the other hand, the beta coefficient of OME is 1.195, which indicates that there highly positive relationship between OME and ROA. With the increase in OME by 1%, ROA increases by 1.195 percent. The positive effect of OME on ROA is highly significant since p-value 0.004 for the coefficient is less than significant level 5 percent.

Likewise, the beta coefficient of BS is 0.029, which indicates that there highly positive relationship between BS and ROA. With the increase in BS by 1 unit, ROA increases by 0.029 percent. The positive effect of BS on ROA is highly insignificant since p-value 0.657 for the coefficient is higher than significant level 5 percent.

In contrast, the beta coefficient of IND is -0.123, which indicates that 1 percent increase in IND decreases ROA by 0.123 percent. The negative effect of IND on ROA is insignificant since p-value 0.560 for the coefficient is greater than significant level 5 percent.

Similarly, the beta coefficient of GDP and INF is -0.004 and -0.063 respectively. This implies that 1 percent increase in GDP and INF decreases ROA by 0.004 and 0.063 percent respectively. The negative effect GDP and INF on ROA is not significant since p-value 0.897 and 0.289 for the coefficient are higher than significant level 5 percent.

4.2.2 Regression analysis for ROE

The appropriateness of regression is done by using ANOVA in case of reliable outcomes. The better model is obtained having confident level 95% and above.

Table 9

Regression Model Summary (ROE)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.713	0.508	0.397	5.57985

a) Dependent Variable: ROE

b) Predictors: (Constant), INF, OME, CONC, LIQ, GDP, BS, CAR, IND, SIZE

The result in Table 9 indicates that there is significant impact of the independent variables on ROE. The R value of 0.713 indicates strong positive relationship between ROE and independent variables as a whole. Similarly, the value of R^2 is 0.508 which means 50.8 % variation in ROE is explained by independent variables. The value of adjusted R^2 is 0.397 which means independent variable is accounted for up to 39.7% ROE. Remaining 60.3% can be achieved through other factors outside these independent variables. Likewise, standard error of estimate 5.57985 indicates the variability of the observed value of ROE from regression line is 5.57985 units. Thus, it has shown that there is significant relationship between independent variables and ROE.

ANOVA Analysis

The appropriateness of regression is done by using ANOVA in case of reliable outcomes. The better model is obtained having confident level 95% and above.

Table 10

Anova Table (ROE)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1285.188	9	142.799	4.586	0.000
	Residual	1245.389	40	31.135		
	Total	2530.577	49			

a. Dependent Variable: ROE

Results in Table 10 show the F-statistics of the regression model is 4.586, which shows that the regression model is fit and can be used in the study because it has significant p-value less than 5 percent level of significance. The regression model has a confidence level of above 95% i.e. our regression model and its results are reliable. The F-test is used to identify the existence of significant relationship between dependent variable and set of independent variables.

Regression Coefficient (ROE)

Here, ROE is the measure for analyzing the profitability and X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8 and X_9 represents the SIZE, CONC, CAR, LIQ, OME, BS, IND, GPD and INF respectively.

It is observed that one variable is statistically significant at 5% significance level namely operations management efficiency. This implies that operations management efficiency has statistically significant impact on ROE of commercial banks. In regression, t-value refers to quantification of difference between populations mean.

Table 11

Regression Coefficient (ROE)

Model	β	t-Value	Sig.
(Constant)	7.846	0.701	0.488
SIZE	-0.650	-0.567	0.574
CONC	0.093	0.134	0.894
CAR	-0.529	-1.873	0.068
LIQ	-1.923	-0.252	0.802
OME	13.525	2.703	0.010
BS	-0.739	-0.898	0.375
IND	0.012	0.005	0.996
GDP	0.024	0.061	0.952
INF	0.843	1.148	0.258

From the table 11, the estimated equation can be written by taking the values from the model:

$ROE = 7.846-0.650X_1+0.093X_2-0.529X_3-1.923X_4+13.525X_5-.739X_6+0.012X_7+0.024X_8-0.843X_9$

The beta coefficient of SIZE is -0.650, which indicates that 1 percent increase in SIZE decreases ROE by 0.650 percent. The negative effect of SIZE on ROE is insignificant since p-value 0.574 for the coefficient is greater than significant level 5 percent.

Similarly, the beta coefficient of CONC is 0.093, which indicates there is positive relationship between ROE and CONC and 1 percent increase in CONC increases ROE by 0.093 percent. The positive effect of CONC on ROE is not significant since p-value 0.894 for the coefficient is higher than significant level 5 percent.

The beta coefficient of CAR is -0.529 which indicates that 1 percent increase in CAR decreases ROE by 0.529 percent. The positive effect of CAR on ROE is insignificant since p-value 0.068 for the coefficient is higher than significant level 5 percent.

However, it can be observed that the beta coefficient of LIQ is -1.923 which indicates that 1 percent increase in LIQ decreases ROE by 1.923 percent. The negative effect of LIQ on ROE is highly insignificant since p-value 0.802 for the coefficient is greater than significant level 5 percent.

On the other hand, the beta coefficient of OME is 13.525, which indicates that there highly positive relationship between OME and ROE. With the increase in OME by 1%, ROE increases by 13.525 percent. The positive effect of OME on ROE is highly significant since p-value 0.010 for the coefficient is less than significant level 5 percent.

Likewise, the beta coefficient of BS is -0.739, which indicates that there highly negative relationship between BS and ROE. With the increase in BS by 1 unit, ROE decreases by 0.739 percent. The positive effect of BS on ROE is highly insignificant since p-value 0.375 for the coefficient is higher than significant level 5 percent.

In contrast, the beta coefficient of IND is 0.012, which indicates that 1 percent increase in IND increases ROE by 0.012 percent. The negative effect of IND on ROE is insignificant since p-value 0.996 for the coefficient is greater than significant level 5 percent.

Similarly, the beta coefficient of GDP and INF is 0.024 and 0.843 respectively. This implies that 1 percent increase in GDP and INF decreases ROE by 0.024 and 0.843 percent respectively. The positive effect GDP and INF on ROE is not significant since p-value 0.925 and 0.258 for the coefficient are higher than significant level 5 percent.

4.2 Discussion

It is evident from the results that there exists significant positive relationship between Capital Adequacy ratio (CAR) and return on equity (ROE) of the commercial banks. The results accommodate with the findings of study conducted by Santoso and Samboro (2022), Nguyen (2020), Teshome, Debela, and Sultan (2018), Gautam (2018) who concluded that, there exists a positive relationship between capital adequacy and financial performance of commercial banks. However, the result contradicts with the findings of Gurung and Gurung (2022), Alnajjar and Othman (2021), Sultan, Ahmed, Ameen, Kumar, and Singh, (2020) and Chalise (2019) whose findings indicated that there is statistically significant negative influence of capital adequacy on profitability of commercial banks in Nepal. However, the result aligns with the Buffer theory which emphasizes that banks strike a balance between meeting regulatory capital requirements and optimizing profitability.

Similarly, the result implies that operations management efficiency has significant positive relationship with Return on Assets and Return on Equity of the commercial banks in Nepal. The findings align with the Efficiency theory which implies that Banks that adhere to efficiency theories strive to minimize input costs while maximizing output, are able to achieve higher profitability. The finding accommodate the finding of study conducted by Jigeer and Koroleva (2023) and Gautam (2018) while it contradicts with the findings of study conducted by Rahman, Hamid, and Khan (2015).

The size of the commercial banks is found to have significant negative relationship with the return on assets of the commercial banks in Nepal opposing the results of study conducted by

Tharu and Shrestha (2019) which suggested that the profitability did not significantly influenced by size of the bank (assets). The finding opposes the Economies of Scale theory which implies that larger banks have cost advantage that may stem from the ability of larger banks to leverage their resources more efficiently and achieve greater profitability.

On the other hand, Operations management efficiency is the only independent variable that has significant impact on the return on equity of the commercial banks in Nepal. The findings align with the Efficiency theory, which implies that Banks that adhere to efficiency theories strive to minimize input costs while maximizing output, are able to achieve higher profitability. The finding accommodate the finding of study conducted by Jigeer and Koroleva, (2023) and Gautam (2018) while it contradicts with the findings of study conducted by Rahman, Hamid, and Khan, (2015).

CHAPTER V
SUMMARY AND CONCLUSION

This chapter wraps up the study by summarizing key findings and their implications for understanding the link between profitability and the various independent variables. . It concludes with potential avenues for future research in this area.

5.1 Summary

The objectives of the study were to determine the factors affecting the profitability of commercial banks, which included various independent factors as bank's size, capital adequacy, liquidity, Operations Management Efficiency, market concentration, board size, and number of independent directors. The research used secondary data of five selected commercial banks of Nepal over the period of ten-years analyzing its descriptive statistics, correlation and regression.

The study mainly focuses on the relationship between return on assets and return on equity as a dependent variable as an affect from independent variables as bank's size, capital adequacy, liquidity, Operations management efficiency , market concentration, board size, and number of independent directors. The results of this study are based on the descriptive and inferential statistics analysis of secondary data from the annual reports of commercial banks and Nepal Rastra Bank. Purposive sampling method has been administered to collect the data. Analysis of data collection and interpretation are done with the help of various statistical techniques.

The findings show that ROA demonstrates a negative association with bank size, liquidity and number of independent directors of the Nepalese commercial banks. Conversely, ROA has a positive correlation with market concentration, capital adequacy ratio, operations management efficiency, board size, GDP and inflation. Furthermore, the analysis of ROE reveals a negative relationship with bank size, capital adequacy ratio, liquidity, board size, number of independent directors and GDP while it has positive correlation with market concentration, operational management efficiency and inflation.

The regression analysis reveals that, Size (SIZE) demonstrates a significant negative relationship with ROA, indicating that as the size of the bank increases, ROA tends to decrease. Liquidity (LIQ) and the Number of independent directors (IND) also show negative relations with ROA, but these are not statistically significant. Gross Domestic Product (GDP) and Inflation (INF) display negative effects on ROA without statistical significance. Whereas, Market Concentration (CONC) exhibits a positive but statistically insignificant relationship with ROA. Capital Adequacy Ratio (CAR) and Operations management efficiency (OME) both positively and significantly influence ROA. Additionally, Board Size (BS) demonstrates a highly significant positive relationship with ROA.

On the other hand, Return on Equity (ROE) of the bank, reveals a negative relationship with Size (SIZE), Capital Adequacy Ratio (CAR), Liquidity (LIQ), and Board Size (BS). Market Concentration (CONC) exhibits a positive but statistically insignificant relation with ROE. Operations management efficiency (OME) demonstrates a significant positive impact on ROE. The Number of independent directors (IND) shows a negative influence on ROE without statistical significance. Additionally, Gross Domestic Product (GDP) and Inflation (INF) are found to have negative effects on ROE.

5.2 Conclusion

The study attempted to answer few questions relating to the determinants of the profitability of commercial banks in Nepal. The first question was about identifying the position of bank's size, capital adequacy, liquidity, Operations management efficiency, market concentration, Board Size, number of independent directors, ROA and ROE of commercial banks. In the same way, second question was about identifying the impact of bank's size, capital adequacy, liquidity, Operations management efficiency, market concentration, Board Size, number of independent directors on the ROA and ROE of the commercial banks. Similarly, the last question was to examine the relationship of bank's size, capital adequacy, liquidity, Operations management efficiency, market concentration, Board Size, number of independent directors and ROA and ROE of the commercial banks. This section is about providing conclusion to the study undertaken with the aim of fulfilling the research objectives.

ROA and ROE are taken as the tool to analyze the profitability of commercial banks. Return on assets ranges from a minimum of 0.49 percent to a maximum of 3.03 percent, leading to an average of 1.68 percent. The average return on equity of the Nepalese commercial banks during the study period ranges from a minimum of 5.33 percent to a maximum of 44.07 percent, leading to an average of 15.58 percent. Moreover, average bank size varies from a minimum of Rs. 1.20 billion to a maximum of Rs. 5.22 billion, leading to an average of Rs. 3 billion. The average concentration ranges from a minimum of 2.07 percent to a maximum of 8.11 percent, leading to an average of 4.59 percent. The average capital adequacy ratio ranges from minimum of -0.49 percent to maximum of 23.31 percent, leading to the average of 13.72 percent. Similarly, the average liquidity ranges from minimum of 0.09 to a maximum of 1.07 and an average of 0.82. Likewise, the average operational management efficiency ranges from minimum of 0.95 to a maximum of 1.92 percent, leading to an average of 1.29. Similarly, the average leverage ratio ranges from a minimum of 0.320 percent to a maximum of 3.360 percent, leading to an average of 1.019 percent. Likewise, the average board size varies from minimum of 5 to a maximum of 9, leading to an average of 6.88. Moreover, the average number of independent directors ranges from minimum of 0 to a maximum of 1, leading to an average of 0.46. In addition, the average GDP ranges from minimum of -3.26 percent to a maximum of 7.99 percent, leading to an average of 3.65 percent. Lastly, the average inflation ranges from minimum of 3.60 percent to a maximum of 9.92 percent, leading to an average of 6.54 percent.

The objective of the study was to examine the the impact of independent variables on the ROA and ROE of the commercial banks. The results disclosed that there is negative and insignificant relationship of liquidity, number of independent directors, GDP and inflation with ROA while there is negative and significant relationship of bank size with ROA. There is positive and significant relationship of operations management efficiency, and CAR with ROA whereas, Market concentration and board size has positive insignificant relationship with ROA.

The results also disclosed that there is negative and insignificant relationship of bank size, Capital adequacy ratio, liquidity and board size with ROE. Whereas, there is positive and insignificant relationship of market concentration, number of independent directors, GDP and

inflation with ROE. It was found that there is positive and significant relationship of operations management efficiency with ROE.

Lastly, the objective of the study was also to identify the relationship between independent variables with profitability of selected commercial banks. The result from correlation analysis revealed that there is positive relationship between Market concentration, capital adequacy ratio, operations management efficiency, board size, GDP and inflation with ROA. And, there is negative relationship of bank size, liquidity and number of independent directors with ROA.

On the other hand, there is positive relationship between Market concentration, operations management efficiency and inflation with ROE. And, there is negative relationship of bank size, Capital adequacy ratio, liquidity, board size, number of independent directors and GDP with ROE.

5.3 Implications

The study contains findings that show the significant impact of independent variables size, capital adequacy ratio and operating management efficiency on dependent variable ROA. Similarly, it shows the significant impact of independent variable operating management efficiency on dependent variable i.e. profitability ROE. These findings have impact on profitability of Nepalese commercial banks. So, the findings can be implied by commercial banks in use and also by researchers in further research purpose. The practical and research implication can be replicated for future references.

5.3.1 Research Implications

This study is conducted in presence of some constraint. Further research might be conducted in near future in order to analyze the determinants of profitability of commercial banks having more extended sample size. Generalizability of the findings can be more precise with the increased number of sample commercial banks and the period of the study. The researchers may conduct more researches in analyzing other factors that affect profitability other than the factors mentioned in the paper. Additionally, exploring other factors or

specific sub-sectors within the banking industry could enhance the comprehensiveness of future studies. In the same way, the researchers may undertake the study with other profit parameters like net interest margin, net profit as dependent variable for non-performing loan that may provide different findings. In the same way, other inferential analysis may also be conducted by researchers in their study. Furthermore, researchers can explore potential mediating factors that could influence the relationship between independent and dependent variables, leading to a more detailed understanding of the dynamics involved.

5.3.2 Practical Implications

The research provides valuable insights for strategic decision-making processes. Recognizing the impact of variables such as size, capital adequacy ratio, and operating management efficiency on Return on Assets (ROA) empowers banks to strategically optimize these factors, thereby enhancing overall profitability.

Additionally, the study highlights the importance of effective risk management and capital allocation. The influence of the capital adequacy ratio on ROA highlights the need for banks to accurately manage their capital structures. Maintaining a balance between risk and capital allocation becomes necessary for supporting a strong financial performance.

Furthermore, operational efficiency enhancement emerges as a key area for focus. Banks can proactively work towards improving their operations management efficiency, positively affecting both ROA and Return on Equity (ROE). Strategies for operational efficiency may be identified and implemented for gaining higher profitability.

Moreover, the findings suggest the importance of incorporating regular monitoring into banks' performance evaluation systems. Metrics related to size, capital adequacy, and operations management efficiency can be systematically integrated, enabling continuous assessment and adjustment of strategies. This adaptive approach ensures that banks align their actions with the identified factors influencing profitability, contributing to strong financial performance.

REFERENCES

Adams, R., Hermalin, B., & Weisbach, M. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature, 1*(48).

Al Manaseer, M., Al-Hindawi, R., Al-Dahiyat, M., & Sartawi, I. (2012). The impact of corporate governance on the performance of Jordanian banks. *European Journal of Scientific Research, 67*.

Alagoz, M., Akalın, U. S., & Ceylan, O. (2016). The relationship between concentration and profitability in Turkish banking sector. *Journal of Emerging Economies and Policy*.

Al-Homaidi, E., Tabash,, M., Farhan, N., & Almaqtari, F. (2018). Bank specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. *Cogent Economics & Finance, 6*(1), 1-26.

Ally, A. R. (2022). Influence of macro-economic factors on financial performance of commercial banks in Tanzania. *International Journal of Economics and Finance, 14*(7).

Alnajjar, A. Z., & Othman, A. H. (2021). The impact of capital adequacy ratio (CAR) on Islamic banks' performance in selected MENA countries. *International Journal of Business Ethics and Governance (IJBEG)*.

Al-Tamimi, H. (2010). Factors influencing performance of the UAE Islamic and conventional national banks. *Global Journal of Business Research, 4*, 1-9.

Andries, A., & Capraru, B. (2011). The determinants of bank efficiency and productivity growth in the central and Eastern European banking systems. *Eastern European Economics, 49*(6), 38-59.

Bhattarai, B. (2019). The determinants of profitability of commercial banks in Nepal. *International Journal of Accounting and Financial Management Research (IJAFMR), 9*(2).

Boone, J., Griffith, R., Harrison, R., & Vickers, J. (2007). The development of market power in the british electricity supply industry. *The Economic Journal, 117*(523). doi:https://doi.org/10.1111/j.1468-0297.2007.02042.x

Bourke, P. (1989). Concentration and other determinants of bank profitabilty in Europe, North America and Australia. *Journal of Banking and Finance, 13*(1), 65-79.

Chalise, S. (2019). The impact of capital adequacy and cost income ratio on performance of Nepalese commercial banks. *SSRG International Journal of Economics and Management Studies, 6*(7).

Dang, U. (2011). *The CAMEL Rating System in Banking Supervision: A Case Study*. Helsinki: Arcada University of Applied Sciences.

Davydenko, A. (2011). Determinants of bank profitability in Ukraine. *Undergraduate Economic Review, 7*(1).

Fibriyanti, Y., & Nurcholidah, L. (2020). Analysis of factors that affect the financial performance of banks. *Advances in Engineering Research*.

Gautam, R. (2018). Determinants of financial performance: An evidence from nepalese commercial banks. *Amity Journal of Strategic Management, 1*(2).

Gautam, S. (2019). Impact of capital adequacy and bank operational efficiency on profitability of Nepalese commercial bank. *SSRG International Journal of Economics and Management Studies, 6*(8).

Gurung, J., & Gurung, N. (2022). Factors determining profitability of commercial banks: Evidence from Nepali banking sector. *Prithvi Academic Journal, Centre for Research & Innovation Prithvi Narayan Campus*. doi:https://doi.org/10.3126/paj.v5i1.45044

Gwachha, K. (2019). Bank specific and macroeconomic determinants of banking profitability in Nepal. *SEBON Journal, 7*, 120-129.

Hassan, A. (2002). Determinants of credit risk on the performance of Nigerian banks. *Journal of Business Management, 2*(1).

Jaouad, E., & Lahsen, O. (2018). Factors affecting bank performance: Empirical evidence from Morocco. *European Scientific Journal, 14*.

Jha, S., & Hui, X. (2012). A comparison of financial performance of commercial banks: A case study of Nepal. *African Journal of Business Management, 6*(25).

Jigeer, S., & Koroleva, E. (2023). The determinants of profitability in the city commercial banks: Case of China. doi:https://doi.org/10.3390/risks11030053

Kunwar, K. (2018). Market structure and performance of commercial banks: Empirical evidence from Nepal. *The Journal of Business and Management, 5*(1).

Laeven, L., & Claessens, S. (2005). Financial dependence, banking sector competition, and economic growth. *Journal of the European Economic Association, 3*(1). https://doi.org/10.1162/jeea.2005.3.1.179

Liang, Q., Xu, P., & Jirapom, P. (2013). Board Characteristics and Chinese Bank Performance. *Journal of Banking & Finance, 37*(8), 2953-2968.

Margono, H., Wardani, M., & Safitri, J. (2020). Roles of capital adequacy and liquidity to improve banking performance. *The Journal of Asian Finance, Economics, and Business*.

Molyneux, P., & Thornton, J. (1992). Determinants of European bank profitability. *Journal of Banking & Finance, 16*(6), 1173-118.

Neupane, B. (2020). Profitability determinants of Nepalese commercial banks. *PressAcademia Procedia, 12*. http://doi.org/10.17261/Pressacademia.2020.1345

Nguyen, K. (2020). Bank capital adequacy ratio and bank performance in Vietnam. *Journal of Asian Finance, Economics and Business, 7*(6).

Pasiouras, F., & Kosmidou, K. (2007). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance,, 21*(2), 222-237.

Pradhan, D. R., & Shrestha, R. (n.d.). Impact of bank specific and macroeconomic variables on the performance of commercial banks of Nepal.

Pradhan, R., & Shrestha, D. (2016). Impact of liquidity on bank profitability in Nepalese commercial banks. *SSRN Electronic Journal*.

Rahman, M., Hamid, M., & Khan, M. (2015). Determinants of bank profitability: Empirical evidence from Bangladesh. *International Journal of Business and Management, 10*(8).

San, O., & Heng, T. (2013). Factors affecting the profitability of Malaysian commercial banks. *African Journal of Business Management, 7*(8).

Sangmi, & Nazir, T. (2010). Analyzing financial performance of commercial banks in India: Application of CAMEL model. *Pakistan Journal of Commerce and Social Sciences*.

Santoso, A., & Samboro, J. (2022). Islamic commercial banks: An analysis the determinants of profit distribution management. *Jurnal Keuangan dan Perbankan Syariah, 10*(1).

Sharma, G., & Singh, S. (2011). *Impact of macroeconomic variables on economic performance: An empirical study of India and Sri Lanka.* https://doi.org/10.2139/ssrn.1836542.

Shrestha, P. (2015). Explanatory power of bank specific and macroeconomic variables as determinants of bank performance: Evidence form Nepalese commercial banks. *International Journal of Business and Management, 52*(1), 456-463.

Shrestha, P. (2019). Determinants of financial performance of Nepalese commercial banks: Evidence from panel data approach. *NRB Economic Review*.

Siddique, A., Khan, M., & Khan, Z. (2022). The effect of credit risk management and bank-specific factors on the financial performance of the South Asian commercial banks. *Asian Journal of Accounting Research, 7*(2).

Solovjova, I., & Saksonova, S. (2011). Analysis of the quality and profitability of assets in the banking system and the impact of macroeconomic factors on its stability case of Latvia. *International Conference on Applied Economics*.

Sritharan, V. (2015). Does firm size influence on firm's profitability? Evidence from listed firms of Sri Lankan Hotels and Travels Sector. *Research Journal of Finance and Accounting*.

Staikouras, P., Staikouras, C., & Agoraki, M.-E. (2007). The effect of board size and composition on European bank performance. *European Journal of Law and Economics, 23*(1), 1-27.

Sultan, K., Ahmed, R., Ameen, F., Kumar, D., & Singh, M. (2020). The effect of macroeconomic & bank specific factors on banks profitability: An empirical evidence from banking industry of Pakistan. *Humanities & Social Sciences Reviews*.

Teshome, E., Debela, K., & Sultan, M. (2018). Determinant of financial performance of commercial banks in Ethiopia: Special emphasis on private commercial banks. *African Journal of Business Management, 12*(1), 1-10.

Tharu, N., & Shrestha, Y. (2019). The influence of bank size on profitability: An application of statistics. *International Journal of Financial, Accounting, and Management (IJFAM), 1*(2).

Wasiuzzaman, S., & Tarmizi, H. (2010). Profitability of Islamic banks in Malaysia: An empirical analysis. *Journal of Islamic Economics, Banking and Finance, 6*(4).

Yurttadur, M., & Celiktas, E. (2019). The Place of non-performing loans in the Turkish banking sector. *Procedia Computer Science*.

APPENDIX

A. Data Table

Year	Bank	ROA	ROE	SIZE	CONC	CA	LIQ	OME	BS	IND	GDP	INF
2012-13	NBL	0.01	0.27	1.20	0.06	0.00	0.60	1.03	6.00	0.00	0.02	0.10
2013-14	NBL	0.01	0.21	1.39	0.06	0.05	0.59	0.95	6.00	0.00	0.05	0.09
2014-15	NBL	0.01	0.13	1.68	0.05	0.08	0.65	1.06	6.00	0.00	0.03	0.07
2015-16	NBL	0.03	0.44	2.07	0.05	0.11	0.71	1.42	6.00	0.00	0.02	0.10
2016-17	NBL	0.01	0.08	2.52	0.05	0.14	0.82	1.59	6.00	0.00	0.08	0.04
2017-18	NBL	0.02	0.14	2.97	0.04	0.18	0.79	1.63	6.00	1.00	0.07	0.04
2018-19	NBL	0.02	0.09	3.55	0.05	0.17	0.82	1.49	5.00	1.00	0.06	0.05
2019-20	NBL	0.01	0.08	4.23	0.05	0.17	0.75	1.28	5.00	1.00	-0.03	0.06
2020-21	NBL	0.01	0.09	5.22	0.04	0.18	0.87	1.34	7.00	1.00	0.04	0.04
2021-22	NBL	0.01	0.08	5.18	0.05	0.15	0.91	1.23	6.00	0.00	0.05	0.06
2012-13	MBL	0.00	0.05	1.20	0.03	0.13	0.78	1.17	9.00	0.00	0.02	0.10
2013-14	MBL	0.01	0.14	1.39	0.03	0.10	0.78	1.19	8.00	0.00	0.05	0.09
2014-15	MBL	0.01	0.15	1.68	0.03	0.12	0.78	1.24	7.00	0.00	0.03	0.07
2015-16	MBL	0.02	0.17	2.07	0.03	0.12	0.83	1.38	9.00	0.00	0.02	0.10
2016-17	MBL	0.02	0.11	2.52	0.02	0.17	0.85	1.17	6.00	0.00	0.08	0.04
2017-18	MBL	0.02	0.10	2.97	0.02	0.16	0.88	1.16	6.00	0.00	0.07	0.04
2018-19	MBL	0.02	0.15	3.55	0.03	0.13	0.91	1.16	7.00	0.00	0.06	0.05
2019-20	MBL	0.01	0.11	4.23	0.03	0.13	0.91	1.12	6.00	1.00	-0.03	0.06
2020-21	MBL	0.01	0.12	5.22	0.03	0.12	0.89	1.14	7.00	1.00	0.04	0.04

2021-22	MBL	0.01	0.12	5.18	0.03	0.13	0.90	1.09	7.00	1.00	0.05	0.06
2012-13	SBL	0.01	0.19	1.20	0.03	0.12	0.81	1.24	9.00	0.00	0.02	0.10
2013-14	SBL	0.02	0.23	1.39	0.03	0.12	0.77	1.28	9.00	0.00	0.05	0.09
2014-15	SBL	0.02	0.20	1.68	0.03	0.11	0.81	1.24	9.00	0.00	0.03	0.07
2015-16	SBL	0.02	0.20	2.07	0.04	0.11	0.85	1.44	8.00	0.00	0.02	0.10
2016-17	SBL	0.02	0.13	2.52	0.04	0.13	0.87	1.24	5.00	0.00	0.08	0.04
2017-18	SBL	0.02	0.14	2.97	0.04	0.12	0.85	1.19	5.00	0.00	0.07	0.04
2018-19	SBL	0.02	0.15	3.55	0.04	0.12	0.94	1.17	6.00	1.00	0.06	0.05
2019-20	SBL	0.01	0.13	4.23	0.04	0.13	0.91	1.16	6.00	1.00	-0.03	0.06
2020-21	SBL	0.01	0.14	5.22	0.04	0.13	0.91	1.14	6.00	1.00	0.04	0.04
2021-22	SBL	0.01	0.13	5.18	0.05	0.13	0.97	1.13	6.00	1.00	0.05	0.06
2012-13	ADBL	0.03	0.15	1.20	0.07	0.18	0.91	1.30	8.00	0.00	0.02	0.10
2013-14	ADBL	0.02	0.12	1.39	0.06	0.15	0.87	1.08	9.00	0.00	0.05	0.09
2014-15	ADBL	0.03	0.16	1.68	0.06	0.13	0.09	1.30	9.00	0.00	0.03	0.07
2015-16	ADBL	0.02	0.14	2.07	0.05	0.13	0.91	1.28	9.00	0.00	0.02	0.10
2016-17	ADBL	0.02	0.13	2.52	0.05	0.20	0.94	1.35	8.00	0.00	0.08	0.04
2017-18	ADBL	0.03	0.13	2.97	0.05	0.20	0.96	1.25	7.00	1.00	0.07	0.04
2018-19	ADBL	0.03	0.15	3.55	0.04	0.20	0.93	1.31	7.00	1.00	0.06	0.05
2019-20	ADBL	0.02	0.12	4.23	0.04	0.20	0.86	1.19	7.00	1.00	-0.03	0.06
2020-21	ADBL	0.02	0.11	5.22	0.04	0.23	0.93	1.16	7.00	1.00	0.04	0.04
2021-22	ADBL	0.01	0.07	5.18	0.05	0.16	1.07	1.19	7.00	1.00	0.05	0.06
2012-13	NABIL	0.03	0.33	1.20	0.06	0.13	0.73	1.73	7.00	0.00	0.02	0.10
2013-14	NABIL	0.03	0.30	1.39	0.06	0.13	0.73	1.81	5.00	0.00	0.05	0.09

2014-15	NABIL	0.02	0.22	1.68	0.07	0.12	0.63	1.60	7.00	1.00	0.03	0.07
2015-16	NABIL	0.02	0.24	2.07	0.06	0.13	0.69	1.92	6.00	1.00	0.02	0.10
2016-17	NABIL	0.03	0.22	2.52	0.06	0.12	0.79	1.75	7.00	1.00	0.08	0.04
2017-18	NABIL	0.02	0.19	2.97	0.05	0.13	0.84	1.51	7.00	1.00	0.07	0.04
2018-19	NABIL	0.02	0.18	3.55	0.06	0.13	0.82	1.38	6.00	0.00	0.06	0.05
2019-20	NABIL	0.01	0.13	4.23	0.06	0.13	0.81	1.29	7.00	1.00	-0.03	0.06
2020-21	NABIL	0.02	0.13	5.22	0.06	0.13	0.92	1.25	7.00	1.00	0.04	0.04
2021-22	NABIL	0.01	0.08	5.18	0.08	0.13	0.95	1.23	7.00	1.00	0.05	0.06