

LIQUIDITY, LOAN PORTFOLIO AND PROFITABILITY COMMERCIAL BANKS IN NEPAL

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

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “LIQUIDITY, LOAN PORTFOLIO AND PROFITABILITY OF COMMERCIAL BANKS IN NEPAL”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes.

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

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REPORT OF RESEARCH COMMITTEE

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We, have examined the dissertation entitled "LIQUIDITY, LOAN PORTFOLIO AND PROFITABILITY OF COMMERCIAL BANKS IN NEPAL" presented by Surya Kumar Khatiwada, for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the dissertation is acceptable for the award of degree.

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TABLE OF CONTENTS

	Page No
<i>Cover Page</i>	<i>i</i>
<i>Certification of Authorship</i>	<i>ii</i>
<i>Report of Research Committee</i>	<i>iii</i>
<i>Approval Sheet</i>	<i>iv</i>
<i>Acknowledgements</i>	<i>v</i>
<i>Table of Contents</i>	<i>vi</i>
<i>List of Tables</i>	<i>viii</i>
<i>Abbreviations</i>	<i>ix</i>
<i>Abstracts</i>	

CHAPTER-I: INTRODUCTION

1.1 Background of the Study	1
1.2 Problem statement and research questions	3
1.3 Objectives of the study	5
1.4 Rationale of the study	5
1.5 Limitations of the study	5

CHAPTER-II: LITERATURE REVIEW

2.1 Introduction	7
2.1.1 Determinants of profitability of Commercial Banks.	7
2.1.2 Impact of liquidity on profitability	8
2.1.3 Relationship between liquidity and profitability	9
2.2 Theoretical review	11
2.2.1 Miller & Orr model,	14
2.2.2 Pecking order theory of liquidity	14
2.2.3 Dynamic theory of profit	15
2.2.4 Baumol's model	17
2.2.5 Liquidity preference theory	17
2.2.6 Theories of liquidity management	18

2.3	Empirical review	21
2.4	Research gap	28
CHAPTER-III: RESEARCH METHODOLOGY		
3.1	Research design	30
3.2	Population and sample	30
3.3	Sources of data	31
3.4	Data collection and processing procedure	31
3.5	Data analysis tools and techniques	31
	3.5.1 Financial analysis	32
	3.5.2 Statistical analysis	34
	3.5.3 Multiple regression analysis	35
3.6	Conceptual framework	36
CHAPTER – IV: RESULT AND DISCUSSION		
4.1	Liquidity Ratio	39
4.2	Total Loan and advance to total Assets	40
4.3	Total Deposit to Total Assets	42
4.4	Evaluation of Profitability Position of the Bank	44
	4.4.1 Return on Equity	44
	4.4.2 Return on Assets	45
4.5	Non-performing loan to Total Loan and Advance (CRR)	47
4.6	Descriptive Statistics	49
	4.6.1 Correlation Analysis	50
	4.6.2 Regression Analysis of variables	53
4.7	Major findings and Discussion	58
4.8	Discussion	60
CHAPTER – V: SUMMARY AND CONCLUSION		
5.1	Summary	62
3.1	Conclusions	63
3.2	Implications	64
REFERENCES		
APPENDIX		

LIST OF TABLES

Table No.	Title	Page No.
1	Liquidity Ratio	39
2	Total Loan and advance to total Assets	41
3	Total Deposit to Total Assets	43
4	ROE of Sample Banks	44
5	Return on Assets (ROA) of sample bank	46
6	Non-Performing loan to Total Loan and Advance	47
7	Descriptive Statistics	49
8	Correlations sample banks	51
9	Regression CRR, LR, TLTA, TDTA on ROA	53
10	Regression CRR, LR, TLTA, TDTA on ROE	56

ABBREVIATIONS

CRR	:	Credit Risk Ratio
CV	:	Coefficient of Variation
EBL	:	Everest Bank Limited
GBIME	:	Global IME Bank
HBL	:	Himalayan Bank Limited
LR	:	Liquidity Ratio
NIMB	:	Nepal Investment Mega Bank Limited
NPAT	:	Net Profit After Tax
NRB	:	Nepal Rastra Bank
ROA	:	Return on Assets
ROE	:	Return on Equity
SD	:	Standard Deviation
TA	:	Total Assets
TD	:	Total Deposit
TL	:	Total Loan and Advance

ABSTRACTS

This research focuses on the profitability and liquidity position of commercial banks in Nepal, examining the relationship between liquidity and profitability. Research methodology is a systematic approach to solving research problems, encompassing plan, design, sample description, instrumentation, data collection, validity, reliability, and analysis. The study analyzed the liquidity ratio (CRR) and loan loss (LR) data of five banks, revealing that GBIME consistently maintains a high proportion of loans to assets. The study also found a moderate return on equity (ROE) percentage for five banks, with GBIME having a moderate ROE and higher ROA values. The study highlights the importance of optimizing financial strategies, risk management procedures, and compliance initiatives to improve shareholder returns and overall financial performance. The study analyzes financial ratios of 5 banks to assess their operational performance and financial health. The Return on Assets (ROA) and Return on Equity (ROE) metrics indicate profitability, while the Loan-to-Deposit Ratio (LR) and Total Loans to Total Assets (TLTA) ratios show liquidity and risk exposure. The Credit risk ratio (CRR) reveals regulatory requirements affecting banks' profitability. The study also finds that CRR negatively impacts ROE, indicating stricter regulations. TLTA shows a negative relationship with ROE, suggesting higher exposure to loans reduces profitability. Future research could explore additional factors and economic environments to improve banks' financial performance.

Key: *ROA, ROE, LR, CRR, TL, TA, TD, sample banks.*

CHAPTER-I

INTRODUCTION

1.1 Background of the Study

Liquidity management, in most cases, are considered from the perspective of working capital management as most of the indices used for measuring corporate liquidity are a function of the components of working capital. The importance of liquidity management as it affects corporate profitability in today's business cannot be over emphasis. The crucial part in managing working capital is required maintaining its liquidity in day-to-day operation to ensure its smooth running and meets its obligation. Liquidity management is very important for every organization that means to pay current obligations on business, the payment obligations include operating and financial expenses that are short term but maturing long term debt. Liquidity ratios are used for liquidity management in every organization. That greatly effect on profitability of organization (Firoj, 2010).

The insurance sector plays a huge role in facilitating financial stability in an economy. In recent times, the interaction between various actors in the financial system-insurers, financial markets, banks and other intermediaries has been increasing. Additionally, these companies not only insure and safeguard the financial risk of houses and firms but also significantly contribute to the financial markets (European Central Bank, 2009). They thus become an important aspect of maintaining the financial stability of households, firms and the large number of investors who conduct transactions in the stock market. Consequently, earning profit has become a prerequisite for insurance companies. The sectors' profitability has been important for both micro and macro-level stability in the financial sector.

Liquidity is the ability to meet expected and unexpected demands for cash. Specifically, it is a company's ability to meet the cash demands of its policy and contract holders without suffering any (or a very minimal) loss. The liquidity profile of a company is a function of both its assets and liabilities. Liquidity risk is inherent in the financial services industry and one must understand, measure, monitor and manage this risk. There are different levels of liquidity management. There is day-to-day cash management, which is commonly a treasury function within a company. There is ongoing cash flow management, which typically monitors cash needs for the next six to twenty-four months. The third category of liquidity management addresses the stress liquidity risk, which is focused on the catastrophic risk.

Profitability is one of the major goals of any business. Without being profitable it is not possible for a business to survive and the business growth is difficult. To generate profit a business need short-term funds to fulfill its day to day needs in operations and other requirements. Business will be more profitable when this short- term need of funds is generated by business operation not through external debts.

Management can earn profit by making use of all the available resources in the market. Hayward and Upton say, “Profitability is the ability of a given investment to earn a return from its use.” However, the term ‘profitability’ is not synonymous to the term ‘Efficiency’. Profitability is an index of efficiency and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important indicator for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Profitability and liquidity are the most prominent issues that management of each organization should take studying and thinking about them into account as their most important duties.

Profitability and liquidity are two important variable which give information about the performance of any business entity. For long-term survival and healthy growth both profitability and liquidity should go parallel to each other. Liquidity refers to the ability of a firm to meet its short term obligations. Liquidity plays a crucial role in the successful functioning of a business firm. A study of liquidity is of major importance to both the internal and external analysts because of its close relationship with day to day operations of a business (Bhunia, 2010). A weak liquidity position poses a threat to the solvency as well as profitability of a firm and makes it unsafe and unsound. Profitability is a measure of the amount by which a firm’s revenues exceeds its relevant expenses.

Potential investors are interested in dividends and appreciation in market price of stock, so they pay more attention on the profitability ratios. Managers on the other hand are interested in measuring the operating performance in terms of profitability. Hence, a low profit margin would suggest ineffective management and investors would be hesitant to invest in the company.

The liquidity and profitability goals are contradictory to each other in most decisions which the finance manager takes. For example, the firm by following credit policy may be in a position to increase its sales, but its liquidity may tend to worsen. In addition to this, referring to the risk return theory there is a direct relationship between risk and return. Thus, firms with high liquidity may have low risk and then low profitability. Conversely, firm that has low liquidity may face high risk results to higher return. Consequently, a firm is required to maintain a balance between liquidity and profitability in its day-to-day operations.

According to Ross, Westerfield and Jordan (2007) there is a negative relationship between liquidity and profitability. It therefore becomes a dilemma for managers to balance the two hence the need for a tradeoff between high amounts of net working capital and maximizing profitability. This is referred to as the liquidity-profitability trade-off. This dilemma would be a consequence of the fact that high values used in current assets tend to generate costs for maintenance, not directly adding value to the company and thereby generating profitability. According to Panigrahi (2012) current assets are liquid so holding more current assets refer to high liquidity but on the other hand current assets include such items such as cash which diminish firm's profitability.

1.2 Problem statement

Maintaining a proper liquidity indicates that funds are confined to liquid assets thereby making them unavailable for operational use or for investment purposes for higher returns. Thus, there is an opportunity cost associated with the maintenance of those liquid assets and this might affect the overall profitability of the firm. In other words, increasing profitability would tend to reduce firm's liquidity and too much attention on liquidity would tend to affect the profitability (Smith, 1980). Therefore, firms should always strike to maintain a balance between conflicting objectives of liquidity and profitability. The firm's liquidity should not be too high or too low. Excessive dependence on liquidity indicates the accumulation of idle funds that don't fetch any profits for the firm (Smith, 1980). On the other hand, insufficient liquidity might damage the firm's goodwill, deteriorate firm's credit standings and that might lead to forced liquidation of firm's assets. Hence, the present study is initiated to identify the relationship between liquidity and profitability of listed insurance company in Nepal.

There is a trade-off between liquidity and profitability; gaining more of one ordinarily means giving up some of the other. For example if a company's balance sheet is listed in order of

liquidity with five items namely cash, marketable securities, accounts receivables, inventory and fixed assets it can be observed that moving from cash to fixed assets decreases liquidity. However, as you move from fixed assets to cash profitability increases.

Asset liability management increases overall net worth and maximizes organizational profitability by allowing the insurer, acting as a liability-driven intermediary, to guarantee that claims are paid when they become due (Ramlall, 2009; Tamiru, 2013). This is in addition to just protecting against risk. Choosing the right ALM mix requires taking into account a number of factors because the goal of ALM is to manage the financial risk exposures related to the assets supporting the liabilities. (Gilbert, 2016). These consist of determining which financial risk sources should be covered by ALM, how risk should be quantified and managed, and which assets and liabilities should be included and which, if any, should be left out. Identifying the assets and liabilities that should be included in the order that they should be investigated is a difficult order for any one paper.

Shrestha (2018) found out that there was a positive relationship between profitability and liquidity however, the coefficients from the study were not significant. Lartey, Antwi & Boadi (2013) found that there was a very weak positive relationship between the liquidity and the profitability of the listed banks in Ghana. Erasmus (2010) found liquidity affects profitability negatively. Eljelly (2004), empirically examined the relationship between profitability and liquidity showed that there exists a significant and negative relationship between them. The theoretical review on the relationship between liquidity and profitability is very clear that a negative relationship is expected between the two variables. However empirical evidence shows mixed results with some showing negative relationship and others showing positive or no relationship.

Hence, the present study is initiated to identify the relationship between liquidity and profitability of commercial banks companies in Nepal. So, following are the major problems that have been identified for the purpose of this study.

- I. What is the profitability, liquidity and loan portfolio position of Commercial banks in Nepal?
- II. What is the relationship between profitability, liquidity and loan portfolio of commercial bank in Nepal?
- III. Does liquidity affect the profitability of commercial banks in Nepal?

1.3 Objectives of the study

Every research study conducted with a view of achieving some objectives and this is of no exception. The main objective of this study are as follows;

- I. To measure the profitability, liquidity and loan portfolio position of commercial banks in Nepal.
- II. To examine the relationship between profitability, liquidity and loan portfolio of commercial banks in Nepal.
- III. To determine the effect of liquidity on profitability of commercial banks in Nepal.

1.4 Rationale of the study

The nature of the relationship exists between liquidity and performance may vary from or to sector, but the existence of a relationship cannot be ignored. Managerial perspective is very important for better profitability and efficient management of liquidity. The favorable liquidity and performance growth are helpful indicators to drive stakeholders' behaviors (Manyo & Ogakwu, 2013). A diminishing movement of profitability indicates a poor strategy of the liquidity management. This study will attempt to identify the nature of the relationship between liquidity and profitability variables. This identification will help to carefully devise trade policies. Further, this study will help management to know the most important factors to be in focus minutely to make sound decisions for better management of liquidity and profitability matters.

The study would be useful to the management of companies listed at commercial banks as it would provide information on alternative ways of managing liquidity to improve profitability. Many companies have collapsed due to inefficient management of liquidity. To the various sectors of companies listed at the commercial banks the study would also help re-emphasize the need for effective and efficient management of liquidity to improve profitability.

1.5 Limitations of the study

The limitations of the study are as follows:

- i. Only limited financial and statistical tool (i.e ratio analysis, mean, CV, correlations, as well as multiple regression).
- ii. In this study including profitability ratio (i. e ROA, ROE) and other liquidity ratio (i.e liquidity ratio, total loan and advance to total assets and credit risk ratio (CRR)).

- iii. In this study only 5 Commercial Banks are selected as a sample.
- iv. Its span of study period as only for 10 fiscal years i. e from 2013/14 to 2022/23
- v. Normality test and Multi collinearity test are not conducted to run multiple regression.

CHAPTER-II

LITERATURE REVIEW

This section deals with the brief review of existing and prior empirical studies, related to the subject of this study. The study of relationship between liquidity and profitability of Nepalese commercial banks has been a matter of interest for researchers for long time. Many studies have been carried out in developed as well as developing economies relating to this topic. Generally, the portion of literature review has divided into following parts:

2.1 Introduction

Under these parts of the research the identification of key concept and relationship among them. Determination of profitability of listed commercial banks are discussed in this topic. The relationship between liquidity and profitability is also be discussed.

2.1.1 Determinants of profitability of Commercial Banks.

Malik, (2011). the profitability of insurance companies can be affected by a number of factors such as age, size, leverage ratio, premium growth, capital growth, tangibility ratio, liquidity ratio, loss ratio, market share, GDP growth and inflation rate. Some of these factors might have a positive impact on the insurers' profitability while others could have a negative effect. Furthermore, some of these factors that affect insurers' profitability could be under the control of the insurers' management (internal factors) whereas others might be out of its control (external factors). Understanding the internal and external factors that can have an impact on the profitability of insurers is essential not only for the insurance managers and supervisors but also for policy makers and regulators.

Berhe and Kaur, (2017) the performance of any business firm in addition to playing the role of increasing the value of the specific firm, it also leads to growth of the whole sector of the economy. Assessing the determinants of performance of insurance companies has gained tremendous importance in the corporate finance literature. Insurance companies act as intermediaries in financial institutions and helps in channeling funds to support business activities in the economy. Every firm is most concerned with profitability. Financial ratio analysis is among the commonly used tool to determine a company's profitability (Lartey, Antwi & Boadi, 2013). Malik, K. (2011) observes that among the determinants of profitability of Insurance companies are; leverage, size, age of the company among others.

Liquidity ratio

Stolowy and Lebas, (2006) quick ratio is a measure of assets that can be easily converted in to cash. The quick ratio is a liquidity measure ratio. This ratio is calculated by the total of cash and cash equivalents, marketable securities and account receivables divided by current liabilities. Ahmed (2016) noted that ROA had statistically insignificant relationship with liquidity. Cheng and Wong (2004) found that liquidity is one of the important determinants of financial health of insurance companies. Companies with more liquid assets are less likely to fail because they can realize cash even in difficulty situations. Low liquidity ratio indicates that an insurer is facing difficulties in meeting its short term obligations on other hand, an extremely high ratio of liquidity could also mean that the insurer is keeping idle cash that could have generated income by investing in profitable areas.

Leverage ratio

Lartey, Antwi and Boadi (2013). defined leverage as total debts divided by total assets. Malik, (2011).the degree of financial leverage reflects insurance companies' ability to manage their economic exposure to unexpected losses. This ratio represents the potential impact on capital and surplus of deficiencies in reserves due to financial claims. There is an expected negative relationship between the return on assets and the insurance leverage.

Size

Malik, (2011) insurance company's size is measured in terms of premium volume. Economies of scale provide one theoretical basis for arguing that firm size is related to profitability. There is and expected positive relationship between firm size and profitability. The scale economy justification for a positive relationship between firm size and profitability is prominent in the works of Alexander

2.1.2 Impact of liquidity on profitability

The nature of liquidity – profitability relationship might be different. The results of most studies enable to conclude that the impact of liquidity on company profitability might be negative. This statement was verified for instance by Deloof (2003) who used cash conversion period to study the impact of liquidity on profitability. The liquidity is importance an company performance and might influence on it is profitability. Eljelly (2004), suggested that practically, profitability and liquidity are effective indicators of the corporate health and performance, effective liquidity management helps ensure a insurance ability to meet cash

flow obligations. It should be also emphasis that some researchers argue that relationship between liquidity and profitability might be both positive and negative. Lack of cash or liquid assets on hand may result in the firm not meeting its obligations to the suppliers of goods and services resulting in withdrawal of incentives to the firm. When the firm does not receive incentives from its suppliers it results in higher costs for goods and services which in turn affect the profitability of the business.

Niresh, (2012). Maintaining a proper liquidity indicates that funds are confined to liquid assets thereby making them unavailable for operational use or for investment purposes for higher returns. Thus, there is an opportunity cost associated with the maintenance of those liquid assets and this might affect the overall profitability of the firm. The firm's liquidity should not be too high or too low. Excessive dependence on liquidity indicates the accumulation of idle funds that don't fetch any profits for the firm. On the other hand, insufficient liquidity might damage the firm's goodwill, deteriorate firm's credit standings and that might lead to forced liquidation of firm's assets.

Operating cash flows generate by assets will affect continuing firm liquidity. It is not only because of the value of liquidation (Soenen, 1993). Firms with fewer current assets will having problem in continuing their operations while if the current assets are too much, it shows the return on investment is not in perfect condition. (Horne and Wachowicz, 2000). Since optimum cash levels are influenced by the factors outside the preventive concept of treasury, the company must think broad and take serious operational decisions on how to the profit opportunities that is available in cash flow process.

2.1.3 Relationship between liquidity and profitability

According to Ross, Westerfield and Jordan (2007) there is a negative relationship between liquidity and profitability. It therefore becomes a dilemma for managers to balance the two hence the need for a trade-off between high amounts of net working capital and maximizing profitability. This is referred to as the liquidity-profitability trade-off. This dilemma would be a consequence of the fact that high values used in current assets tend to generate costs for maintenance, not directly adding value to the company and thereby generating profitability. According to Panigrahi (2012) current assets are liquid so holding more current assets refer to high liquidity but on the other hand current assets include such items such as cash which diminish firm's profitability.

According to Gijare, Raul, and Panigrahi (2018) For every business to operate successfully, liquidity is essential. Maintaining liquidity on a daily basis is crucial to working capital management since it helps the company meet its obligations and run smoothly. As a result, it is critical to closely monitor the company's liquidity position because without it, it cannot survive. However, initiatives to boost profitability have a tendency to decrease a company's liquidity, and an excessive focus on liquidity has a tendency to negatively impact profitability. Without a question, every business seeks to retain liquidity in order to optimize profits. Nevertheless, boosting earnings at the expense of liquidity could put the company in danger of major issues, such as financial insolvency. It is crucial that the firm's liquidity is properly balanced because too much liquidity, on the one hand, suggests that idle funds are building up and aren't producing any profits for the company, and too little liquidity could harm the company's reputation and credit standing, which could result in the forced liquidation of the company's assets.

Between 2008 and 2014, Zainudin et al. (2018) investigated firm-specific internal determinants influencing the profitability performance of a subset of chosen life insurance firms in eight Asian countries (South Korea, Thailand, China, Hong Kong, Taiwan, Singapore, Japan, and Malaysia). The profitability of an Asian life insurance company, as determined by return on assets, is highly correlated with size, volume of capital, and underwriting risk, according to a random effect model. Growth in premiums, physical assets, and liquidity are not very reliable indicators of these life insurance companies' profitability.

The following variables are examined by Banerjee and Majumdar (2018): the age of the company, retention ratio, capital sufficiency, underwriting risk/loss ratio, financial leverage, reliance on reinsurance, and macroeconomic factors like GDP per capita and inflation rate that are taken into account as independent factors. The primary metric, return on asset, is considered the dependent variable for financial performance metrics. The data indicates that while the loss ratio, retention ratio, and financial leverage point to a significant negative link, the size, capital adequacy, and reinsurance dependency appear to have meaningful and positive relationships. There is no connection between inflation and GDP per capita.

Shavar and Siddiqui (2019) used a regression model to evaluate the data in order to determine the factors that influence Pakistani insurance companies' profitability. Representatives of financial performance were taken from sales profitability, investment income, and signature

profit; independent variables were gross written premium, claim, reinsurance, management expenditures, interest rate, size, leverage, and real GDP. In their 2019 study, Abebe and Abera sought to determine what factors influenced Ethiopian insurance businesses' financial performance from 2010 to 2015. Return on equity and return on assets were utilized as profitability ratios. The evaluation's findings indicated that the primary factors influencing financial performance were size, loss, leverage, liquidity, and capital sufficiency.

Deyganto (2019) samples 17 insurance businesses in Ethiopia from 2008 to 2018 in order to study the factors influencing the profitability of insurance companies. The study's findings demonstrated that, of the eight explanatory factors included in the model, five—underwriting risk, premium growth, solvency ratio, GDP growth rate, and inflation rate—had a major impact on the insurance companies' financial performance. Conversely, the insurance businesses' financial performance is not much impacted by the interest rate, company size, or reliance on reinsurance.

Dhiab (2021) looks at the factors that affect the Saudi insurance industry's profitability. Based on empirical evidence, it appears that the written premium growth rate, tangibility ratio, and fixed asset ratio are the primary determinants of Saudi insurance companies' profitability. Furthermore, while there exists a positive correlation between profitability and both firm size and liquidity ratio, this relationship is not statistically significant. Conversely, the profitability of Saudi insurance businesses is negatively impacted by the loss ratio, the ratio of liabilities, the ratio of insurance leverage, and to a lesser extent, the company's size.

2.2 Theoretical review

Theoretical Review of Profitability

A theoretical review of profitability entails looking at the many ideas, hypotheses, and elements that go into determining how profitable a business may remain financially viable and produce profits. One important indicator of a business's effectiveness, competitiveness, and general financial health is its profitability. We shall now examine a few theoretical stances on profitability:

Economic Theories:

Supply and Demand: Profitability can be influenced by the basic economic principles of supply and demand. If a product or service is in high demand with limited supply, a company may be able to command higher prices and, consequently, increase profitability.

Market Structure: Different market structures, such as perfect competition, monopolistic competition, oligopoly, and monopoly, can affect a firm's pricing power and thus its profitability. In competitive markets, profit margins may be slimmer, while monopolies may have more pricing flexibility.

Financial Theories:

Return on Investment (ROI): Profitability is often linked to the return a company generates on its investments. The ROI metric assesses how efficiently a company uses its capital to generate profits.

Risk and Return Trade-off: Theoretical models, such as the Capital Asset Pricing Model (CAPM), highlight the relationship between risk and return. Higher profitability is often associated with higher levels of risk.

Strategic Management Theories:

Porter's Five Forces: Michael Porter's framework analyzes the competitive forces in an industry, including the bargaining power of buyers and suppliers, the threat of new entrants, the threat of substitute products, and the intensity of competitive rivalry. Profitability can be influenced by a company's ability to navigate and leverage these forces.

Resource-Based View (RBV): According to RBV, a company's unique resources and capabilities can contribute to sustained competitive advantage and, consequently, higher profitability.

Marketing Theories:

Brand Equity: A strong brand can command premium prices and contribute to higher profitability. Theoretical frameworks like the Brand Equity Model explore how brand strength can influence consumer behavior and financial performance.

Product Life Cycle: Profitability may vary at different stages of a product's life cycle. Theoretical models in marketing help understand how products evolve and how companies can maximize profits at each stage.

Accounting Theories:

Financial Ratios: Various financial ratios, such as gross profit margin, net profit margin, and return on assets, provide insights into different aspects of a company's profitability. Accounting theories guide the interpretation of these ratios.

Innovation Theories:

Disruptive Innovation: Theoretical frameworks like Clayton Christensen's theory of disruptive innovation highlight how companies that innovate can disrupt established markets, potentially leading to increased profitability.

Corporate Governance Theories:

Agency Theory: Examines the relationship between principals (shareholders) and agents (management), suggesting that aligning the interests of these groups can contribute to improved profitability.

Globalization Theories:

International Business Theories: Profitability is often influenced by a company's ability to operate and compete globally. Theories in international business, such as the eclectic paradigm, provide insights into the factors contributing to profitability in the global context.

Measurements of Profitability

Banks' performance can be measured by stability and profitability, while stability is related to risk exposure and profitability concerns with banks' financial return. Bowman (1980), proposed risk and return theory, which led to the use of accounting ratios to quantitatively measure profitability. Banks' profitability is usually measured by ROE, ROA and Net profit margin. (Nickel & Rodriguez, 2002; Miller & Bromiley, 1990). ROA measures the efficiency of using total assets to produce profit, it was calculated as net income divided by total assets, the higher ROA indicates higher profitability of banks. $ROA = \text{Net Income} / \text{Total Assets}$ Another similar ratio for measuring profitability is ROE, unlike ROA, ROE measures the efficiency of using shareholder's equity to produce profit, which is the most concerned indicator for shareholders, banks with high ROE is normally viewed as profitable and promising by shareholders. $ROE = \text{Net Income} / \text{Shareholder's Equity}$ NPM (Net Profit Margin) measures the efficiency of translating revenue into profit, which indicates bank's management ability of cost control, higher NPM is viewed as a favourable signal for good capability of cost management of banks. $\text{Net Profit Margin} = \text{Net Profit} / \text{Revenue}$ Another ratio for measuring profitability is NIM, which measures how much net interest earnings gained from bank's business operations, it was calculated as the interest income minus expenses, then divided by average interest-bearing assets. Higher NIM represents higher profitability of bank operations. $NIM = \text{Interest Income} - \text{Expenses} / \text{average interest-bearing assets}$ While profitability is the most concerned consideration of financial managers, the importance of profitability varies depends on the role of stakeholders. The depositors would take stability of deposits as priority, while shareholders would view profitability as the most important indicator, and debt holders may consider in-time repayment of financial obligation at first.

2.2.1 Miller & Orr model,

Miller and Orr (1966) developed a model of demand for money. Under the model, the firm allows the cash balance to fluctuate between the upper control limit and the lower control limit, making a purchase and sale of marketable securities only when one of these limits is reached. The assumption is that the net cash flows are normally distributed with a zero value of mean and a standard deviation. This model provides two control limits – the upper control limit and the lower control limit as well as a return point. When the firm's cash limit fluctuates at random and touches the upper limit, the firm buys sufficient marketable securities to come back to a normal level of cash balance that is the return point. Similarly, when the firm's cash flows wander and touch the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level that is the return point.

2.2.2 Pecking order theory of liquidity

Myers and Majluf (1984) introduced very influential pecking order theory saying; manager prefers to finance deficit of capital by issuing safe security. The theory states that, in the event where retained earnings and other internal source of financing will be low to invest then manager will issue debt and only issue new equity with possibility of issuing junk debt (financial distress possibility). The theory emerges as a result of asymmetric information existing in the financial markets, that is, corporate managers often have better information about the health of their companies than outside investors. Apart from the transaction costs of issuing new securities, companies have to accept the information costs arising from asymmetric information. In this way, new securities issued on the financial market could be infra-valued because of informational asymmetries, and this is especially true in the case of new equities. Tradeoff and pecking order theories center the importance of the thought of liquid assets. Tradeoff advocates an inverse relationship between liquidity and profitability that center the cost and benefit of every decision. Whereas, pecking order advocate the positive relationship between liquid assets and performance.

1. Definition of Liquidity:

Liquidity can be understood as the degree to which an asset or security can be quickly and easily converted into cash or cash equivalents without causing a significant impact on its price. High liquidity implies a lower cost of trading and reduced price volatility.

2. Importance of Liquidity:

Market Efficiency: Liquidity is essential for the efficient functioning of financial markets. It ensures that buyers and sellers can transact without significant delays or disruptions.

Investor Confidence: Liquid markets instill confidence in investors, as they can enter or exit positions with ease, reducing the risk of being unable to sell an asset at a reasonable price.

3. Factors Affecting Liquidity:

Market Depth: The volume of buy and sell orders in the market.

Transaction Costs: The expenses associated with buying or selling an asset.

Information Asymmetry: Differences in information among market participants.

Market Structure: The organization and features of a particular market.

4. Theories of Liquidity:

Bid-Ask Spread Theory: The spread between the buying (bid) and selling (ask) prices reflects the cost of liquidity. Narrow spreads indicate higher liquidity.

Inventory Models: Traders and market makers manage inventories to provide liquidity, balancing the need to facilitate trades and minimize risk exposure.

Information-Based Models: Liquidity is affected by the availability and asymmetry of information. Adverse selection and moral hazard can impact liquidity.

5. Liquidity Measures:

Bid-Ask Spread: The difference between the highest price a buyer is willing to pay and the lowest price a seller is willing to accept.

Trading Volume: The total number of shares or contracts traded in a specific period.

Market Depth: The quantity of securities available for trading at different price levels.

6. Market Microstructure Models:

Roll Models: Analyze the trading process and how information is incorporated into prices.

Kyle Model: Examines the role of information asymmetry in determining bid-ask spreads.

Amihud Illiquidity Ratio: Measures the price impact of trading activity.

7. Financial Crises and Liquidity:

Liquidity is often severely tested during financial crises when market participants may become risk-averse, leading to a drying up of liquidity.

8. Policy Implications:

Central banks and regulatory bodies often employ policies to maintain market liquidity during periods of stress.

2.2.3 Dynamic theory of profit

According to Clark (1902) profit accrues because the society is dynamic by nature. Since the dynamic nature of society makes future uncertain and any act, the result of which has to come in future, involves risk. Thus profit is the price of risk taking and risk bearing. It arises

only in a dynamic society which means in a society where changes does not occur that is, it is static by nature the risk element disappears and hence the profit element does not exist there. A society is said to be dynamic when there is a change in its population, change in trends of the people, change in stock of the capital, change in the supply of entrepreneurs among others. When all these factors become constant, the future also becomes certain and the risk element disappears from the society.

According to Clark (1902), profit is the result of an adjustment, which is brought about by the entrepreneurs themselves. They may find new techniques of production by inventing new machines. Their use reduces the cost of production and reduces the course of time as well and gives the entrepreneur higher profits. But when the use of machinery and production becomes common and used by the other entrepreneur operating in the economy, the supply of goods increase and the prices fall. Hence the profit margin also goes down. Under this situation the profit is determined by the demand and supply of enterprise at a point where they are equal. This theory is also known as windfall theory of profits. This theory treats profits as a residue in price after deducting costs; hence it is a residual theory of profits.

Profitability is a key metric for businesses of all sizes and industries, and understanding how to optimize it is crucial for long-term success. One effective way to analyze and improve profitability is through the use of profitability models, which involve using historical data, an analytical approach, and an understanding of market trends. In this article, we will delve into the rationale behind using these three elements in profitability models and how they can help businesses make informed decisions that drive profitability.

Historical data: Analyzing a company's historical performance, including its financial statements and important metrics, can help spot patterns and trends that will guide decisions in the future. This information can be used to pinpoint the parts of the company that are currently making a profit as well as those that might be falling short and require development.

Analytic approach: A variety of characteristics and aspects that can affect a business's profitability should be considered in a well-designed profitability model. This can include things like market demand, price strategies, overhead costs, and cost of goods sold. The relative influence of these factors on profitability can be determined with the use of analytical techniques like data analysis or financial modeling, which enables companies to decide how best to maximize them.

Market trend: It's crucial to comprehend the broader market trends that can affect a company in order to make profitable judgments. This can include factors like the state of the economy, level of competition, and shifts in customer behavior. Businesses can more effectively predict and react to changes in the market by keeping abreast of these trends and incorporating them into a profitability model.

Overall, by using historical data, an analytical approach, and an understanding of market trends, businesses can create profitability models that help them make informed decisions about how to optimize their profitability and achieve long-term success.

2.2.4 Baumol's model

Baumol (1952) developed an inventory management model which was applicable in determining the level of cash to be held by the business firms. He described the holding costs and the ordering costs of cash in a fashion similar to those costs associated with inventory. His conclusion was that the rational individual will, given the price level, demand cash in proportion to the square root of the value of these transactions. The Baumol model assumes the cash manager invest excess fund in interest bearing securities and liquidates them to meet the firm's demand for cash. As investment return increase, the opportunity cost of holding cash increases and the cash manager decreases cash balance. As transaction cost (cost of liquidating short-term investment) increase, the cash manager decrease the number of times the liquidates securities, leading to higher cash balances. However as is the case with the Nevertheless, the economics order quantity model, Boumol's model has restrictions when using the assumptions of fixed and predictable demand, as well as instant supplies when applying for replacement cash.

2.2.5 Liquidity preference theory

The liquidity preference theory was postulated by John Maynard Keynes in his book "Money" in (1936) to explain determination of the interest rate by the supply and demand for money. The theory highlights three motives namely transactionary, speculative and precautionary behind holding cash. The demand for money as an asset was theorized to depend on the interest foregone by not holding bonds and other less liquid assets. Interest rates, he argues, cannot be a reward for saving as such because, if a person hoards his savings in cash, keeping it under his mattress say, he will receive no interest, although he has nevertheless refrained from consuming all his current income. Instead of a reward for saving, interest, in the

Keynesian analysis, is a reward for parting with liquidity. This theory is significant in the study of bank liquidity management because every DMBs needs to understand the motives for tying down liquid capital and the implications on the profitability.

Keynes (1936) was the first to develop the concept of liquidity in his book *The General Theory of Employment, Interest and Money* to explain determination of the interest rate by the supply and demand for money. Liquidity preference refers to the demand for money, considered as liquidity. The idea that investors demand a premium for securities with longer maturities, entail greater risk, because they would prefer to hold cash, which entails less risk. The more liquid an investment, the easier it is to sell quickly for its full value. Because interest rates are more volatile in the short term, the premium on short- versus medium-term securities will be greater than the premium on medium- versus long term securities. For example, a three-year Treasury note might pay 1% interest, a 10-year treasury note might pay 3% interest and a 30-year treasury bond might pay 4% interest.

2.2.6 Theories of liquidity management

Diamond and Rajan (2001) postulated that liability management theory focuses in banks issuing liabilities to meet liquidity needs. Liquidity and liability management are closely related. It is one of the essential tools for decision making that sets out to maximize stakeholder value. Asset liability management (ALM) is the management of the total balance sheet dynamics and it involves quantification of risks and conscious decision making with regard to asset liability structure in order to maximize the interest earnings within the framework of perceived risks. The primary objective of ALM is not to eliminate risk, but to manage it in such a way that the volatility of net interest income is minimized in the short run and economic value of the organization is protected in the long run.

Shiftability Theory

This theory was developed by Harold G, Moulton in 1915. This theory states that, for an asset to be perfectly shiftable, it must be directly transferable without any capital loss when there is a need for liquidity. This is specifically used for short term market investments, like treasury bills and bills of exchange which can be directly sold whenever there is a need to raise funds by banks. But in general circumstances when all banks require liquidity, the shiftable theory need all banks to acquire such assets which can be shifted on to the central bank which is the lender of the last resort. This theory maintains that banks could effectively protect themselves against massive deposit withdrawals by holding, as a form of liquidity

reserve, credit instruments for which there existed a ready secondary market. Included in this liquidity reserve were commercial paper, prime bankers acceptances and, most importantly as it turned out, treasury bills. Under normal conditions all these instruments met the tests of marketability because of their short terms to maturity.

The shiftability theory will be important to this study because it has some positive elements of truth. Now banks obtain sound assets which can be shifted on to other banks. Shares and debentures of large enterprises are welcomed as liquid assets accompanied by treasury bills and bills of exchange. This has motivated term lending by banks.

Schumpeter Theory of Profitability

Following on the method of Clark, Schumpeter developed the „circular flow model“ in which a profit-less economy is described where perfect competition extinguishes surpluses of monopoly and friction. The analyses of the „circular flow“ economy differ in detail from the „static state“ model of Clark. So departures between an ideally competitive environment and actual economies yield the causes of profit. Schumpeter, however, is far more selective in his approach than Clark. Schumpeter identifies the single notion of innovation as paramount, so that changes based upon innovation are the cause of profit. Gradual changes in population and capital would easily be anticipated by the market and hence present no opportunity for the entrepreneur. This theory will be significant to this study because the five conditions that result to profit making as suggested by Schumpeter are observed by deposit money banks as profit making is the main reason for setting up any bank.

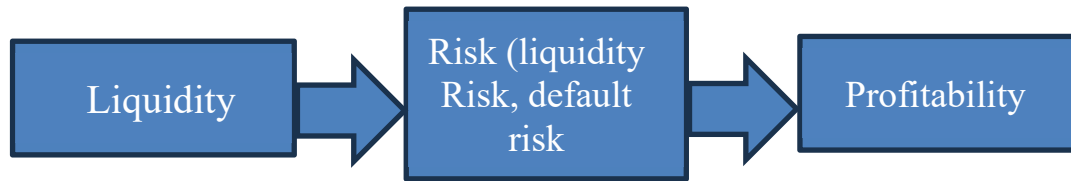
Buffer's Theory of Capital Adequacy

Capital adequacy theory was postulated by Berger and DeYoung (1997). The view of Berger and DeYoung (1997) is that banks may hold large capital to explore future unforeseen investment opportunities. According to Berger and DeYoung (1997), banks can opt to have a capital buffer to reduce the likelihood of their capital dropping below the statutory requirement, mainly if the ratio is very unsteady. Another possible reason for holding buffer capital is related to the level of risk of the bank's total capital. Buffer's theory postulates that banks with their capital marginally above the regulatory minimum ratios should always increase the capital ratio and cut risk to avoid compliance penalty by the regulator. According to Milne and Wiley (2001), buffer is a term used to show the excess capital held by the bank beyond the minimum requirement. This implies that banks are forced to raise

the level of their capital ratio when coming close to the required minimum level assets. According to Milne and Wiley (2001), compared to banks with lower portfolio risk, banks with a highly risky portfolio hold a higher level of buffer capital because their capital is likely to fall below the statutory minimum requirement. During financial crises, banks with small amount of capital may escalate systemic risk and hence hamper financial stability. Conversely, if banks have already complied with the regulatory minimum capital as well as have buffer capital, then any changes in capital requirements will have less impact on bank behavior. Banks may prefer to hold a „buffer“ of excess capital to reduce the probability of falling under the legal capital requirements, especially if their capital adequacy ratio is very volatile. Capital requirements constitute the main banking supervisory instrument in Nigeria. This theory is relevant to this study because adequate capital helps DMBs in discharging effectively their primary function of preventing banking failure by absorbing losses. It is also seen as a way of providing the ultimate protection against insolvency arising from the risk in banking sector. It is the least amount necessary to inspire and sustain confidence in the banks, keep it open and operating so that time and earnings can absorb losses without being forced into costly liquidation and enable banking industry to take full advantage of its profitable growth opportunities.

Theory About Relationship Between Liquidity and Profitability

For the relationship between liquidity and profitability, a lot of researches mentions the trade-off between them. Due to the modern portfolio theory proposed by Markowitz (1985). The return of one financial instruments is determined by its risk, in other words, the higher the risk it bears, the higher profitability it will gain, there is a positive relationship between risk and profitability. While the liquidity of one company influences negatively on the risk, as we mentioned before, efficient liquidity management enhances the efficiency of investments and other business operations, reduces extra cost caused by lack of liquidity, thus reduces liquidity directly and other risk like default risk. By discussing the role of risk on profitability and the relationship between risk and liquidity, we connect the concept of liquidity and profitability. It can be assumed that there exists a negative relationship between them, the high liquidity will result in low profitability. Figure 3 shows the impact of liquidity on profitability:



(Adapted by the authors)

Although trade-off theory is well accepted by most researchers, some researches argue that profitability can be enhanced by efficient liquidity management, which shows the positive relationship between them. Although current assets are less profitable than fixed assets, holding proper liquidity may prevent companies from other extra cost, thus improve the profitability through this way. For example, promising investment opportunities requiring in-time money inputs can be seized by banks with adequate liquidity reserves, sudden financial needs due to mismatch of cash outflows and inflows can be met through enough liquidity reserves, otherwise the company will face risk of default and other costs from generating liquidity.

2.3 Empirical review

Hamal (2020) examined Factors Affecting Profitability of Nepalese Non-Life Insurance Companies. The study examines the impacts of liquidity ratio, leverage ratio, firm size, age of the firm and total debt on the profitability of non-life insurance companies in Nepal. The dependent variable in the study is the return on asset (ROA), which is used as a measure of profitability. The study is based on secondary data of nine non-life insurance companies studied over a period of ten years, from 2066/67 to 2075/76. The data were collected from the financial statements published annually by the selected non-life insurance companies. Descriptive statistics, correlational analysis and regression models have been employed in order to test the impacts as well as the significance of the selected independent variables on ROA. The study concludes that the profitability of Nepalese non-life insurance companies increases with the increase in liquidity but decreases with the increase in leverage. However, the study establishes the insignificant relationship of firm size, firm age and total debt with profitability for the sector. The study thus suggests that non-life insurance companies should focus on the proper management of capabilities to pay liabilities to enhance profitability and also try to maintain a smaller value of leverage ratio to handle the above-average losses.

Eladly (2021) analyzed Working Capital Management on Profitability and Earning Assets of Insurance Industry in Egypt. This paper is an attempt to investigate the effect of working

capital management, measured by (Current Ratio, Quick Ratio and Liquidity) on dependent variables (Return on Assets, Return on Equity and Earning Assets (Asset Quality) of insurance firms in Egypt, the study sample is 49% from total insurance firms working of the insurance market in Egypt in 1999- 2019. A structural equation modelling was selected to construct of the model of this study, The evidences show that There is a positive significant effect on construct of the independent variables, current ratio (x1), quick ratio (x2), and liquidity (x3) on construct of the dependent variables in terms of Return on Equity (Y1), at a probability level less than (0.001). This validates the first hypothesis; the independent variables Current Ratio(x1), Quick Ratio(x2), and Liquidity(x3) have a significant effect on the dependent variables Return on Equity (Y1), There is a positive significant effect on the construct of the independent variables, Current Ratio (x1), Quick Ratio (x2), and Liquidity (x3) on the construct of the dependent variables in terms of Earning Assets (Asset Quality) (Y3), probability level less than (0.001). This validates of the third hypothesis; the independent variables in terms of Current Ratio (x1), Quick Ratio (x2), and Liquidity (x3) have a significant effect on (Earning Assets) Asset Quality (Y3).

Kariuki, Muturi and Njeru (2021) assessed Influence of Liquidity on Financial Performance of Insurance Companies in Kenya. Liquidity is the capacity of a company to satisfy its current financial obligations after they fall due. A firm may incur extra costs if it fails to honor its short term financial obligations. The aim of the study was to determine the influence of liquidity on the financial performance of insurance companies in Kenya. The research applied a correlational research design. A correlational study design is administrated to debate the connection between variables. The target population for this study was the fifty-three insurance companies in Kenya that were operational in 2018. The investigation found that liquidity had an enormous positive effect on financial performance (Return on assets and return on equity). The study concludes that the greatest threat to liquidity may occur in an insurance firm during a catastrophe when a large number of claims are received directly or there could even be prospects of a significantly large claim which insurance companies should have optimal liquidity for such situations. The review recommends that Insurance firms should monitor liquidity in their firms and adopt corrective actions in instances of high liquidity risk.

Sah and Magar (2021) examined Factors affecting the profitability of Nepalese insurance companies. This study looks at the variables influencing profitability in the setting of

insurance businesses in Nepal. The dependent variables chosen are return on equity and return on assets. The independent variables that have been chosen include firm age, firm size, premium growth, tangibility, and liquidity. The study's foundation is secondary data from 21 insurance firms, totaling 168 observations during 2011–12–2018–19. The information is gathered from selected insurance firms' annual reports as well as those released by Beema Samiti. The factors influencing the profitability of insurance businesses in Nepal are tested through the estimation of regression models. The study demonstrated that return on equity and return on assets are positively impacted by firm size. It suggests that higher returns on equity and assets are correlated with greater firm sizes. Similarly, return on equity and return on assets both benefit from premium growth. It suggests that the return on equity and the return on assets would increase with the premium increases. Additionally, return on assets is positively impacted by business age. It suggests that a higher business age is associated with a higher return on equity and assets. Furthermore, return on equity and return on assets both benefit from the tangibility of assets. It implies that the more tangibility an asset has, the higher the Liquidity ratios also have a detrimental effect on return on equity and return on assets. It implies that a rise in the liquidity ratio causes the return on equity and assets to decline.

Olowokudejo (2021) analyzed Asset Liability Management and the Profitability of the Life Insurance Industry in Nigeria. The asset liability management and its impact on the profitability of life insurance businesses in Nigeria are the subjects of this panel data analysis study. The organization's profitability may suffer from an unsuitable asset-liability combination. This study aims to evaluate the relationship between life insurance businesses' assets, liabilities, and profitability in Nigeria. Cross-sectional data covering the years 2008–2019 is obtained from ten life insurance firms using the ex post facto research design. Inferential statistics and descriptive analysis are used to evaluate if the data are appropriate for the investigation. Regressions with both fixed and random effects are applied to the data. The random effect model's null hypothesis is disproved using the Hausman test. The findings show that while some liabilities are considerable, assets generally have a statistically significant association with profitability. This shows that balance sheet items are related to profitability and that effective asset liability management directly affects the life insurance industry's total profitability. Therefore, it is advised that insurers use sound asset liability management procedures and allocate a larger portion of their funds to those liabilities and assets that have the greatest potential to increase profitability.

Msimi (2022) assessed Evaluating the influence of leverage and liquidity on the financial performance of general insurance companies in Sub-Saharan Africa. The factors of the insurance industry's business performance are of concern to a variety of participants in any economy, such as the government, politicians, policyholders, and speculators. There has been very little research on this issue in Sub-Saharan Africa, with the majority focusing on specific factors that influence the performance of insurance businesses. The purpose of this paper was to evaluate the influence of leverage and liquidity on financial performance of general insurance companies in Sub-Saharan Africa. The study used descriptive correlational techniques to obtain panel data across 113 general insurers operating in Sub-Saharan Africa as of December 31, 2019, for 11 years (2008–2019). The pooled OLS, fixed effects and random effects models were estimated with the financial performance measures (proxied by ROA) as the dependent variables where the Hausman test was employed to test the hypothesis. The study found that there is a negative negligible link between leverage and financial performance, whereas there is a positive association between liquidity and financial performance. The study suggested that proper liquidity management is critical for insurance businesses to enhance a company's value as well as financial success. The focus should be on establishing a proper asset-liability mix, in which a company's total liabilities do not exceed its total assets. Furthermore, organizations require cash flow policy recommendations to optimize profit potential while limiting liquidity risk in the financial statement.

Abbas and Mahdi (2023) examined Assessment of the financial performance of insurance companies in Iraq. Insurance companies play an important role in providing services and supporting the state's economy, and they participate in achieving the goals of development plans in the economic field, in addition to realizing many social and economic benefits. Therefore, it has become important to continuously evaluate the performance of insurance companies' activity in Iraq to know the level of their performance. One of the most important of these assessments is financial analysis. It helps in analyzing and interpreting data in a way that helps management determine the level of performance and give an image and personality to it, so that strengths and weaknesses are identified. Various analytical tools have been identified through which it is possible to determine and evaluate the level of performance, and the study has reached a set of important findings , There are some legislative problems in the company's activity, Liquidity declined in 2010 and 2011 due to the lack of additional

financial analysis, and recommendations, Draft a law that helps in activating the insurance sector, Emphasis on the use of modern technology to rotate the company's activity to help develop insurance services and enhance its national economic activity.

Nosirov et al (2023) reviewed Ensuring the financial stability of insurance companies in the innovative development of the economy. This article shows you how to ensure the financial stability of insurance companies in the innovative development of the economy. The macroeconomic models used to ensure financial stability were also analyzed and used as structural models developed with microeconomic optimization risks. In addition, general indicators necessary to accurately describe the financial stability of insurance companies have been developed, and these indicators have been used to assess the level of financial stability of the guarantor insurance company. The financial results of the activities of the joint-stock company "Kafolat Insurance Company" were assessed using an econometric model. conclusions and recommendations on ways to ensure the financial stability of insurance companies in the innovative development of the economy.

Khadka (2023) analyzed Effect of firm specific and macroeconomic factors on profitability of Nepalese insurance companies. This study examines the effect of firm specific and macroeconomic factors on profitability of Nepalese insurance companies. Return on asset and return on equity are selected as the dependent variables. Similarly, firm size, liquidity, tangibility, dividend per share; premium growth, inflation, gross domestic product and money supply are selected as the independent variables. This study is based on secondary data of 16 insurance companies with 124 observations for the study period from 2013/14 to 2020/21. The data were collected from reports published by the insurance board of Nepal, annual reports of respective insurance companies and World Bank database. The correlation coefficients and regression models are estimated to test the significance and importance of firm specific and macroeconomic factors on the profitability of Nepalese insurance companies. The result showed that firm size have the negative impact on return on assets and return on equity. It indicates that the increase in the firm size leads to decrease the return on assets and return on equity. Similarly, the studies showed that liquidity rate have also the negative impact on return on assets and return on equity. It indicates that the increase in the liquidity leads to decrease the return on assets and return on equity. On the other hand, the studies found that tangibility have the positive impact on return on assets and return on equity. It shows that the increase in the tangibility leads to increase the return on assets and

return on equity. Likewise, the studies found that dividend per share have the positive impact on return on assets and return on equity. It shows that the increase in the dividend per share leads to increase the return on assets and return on equity. Similarly, the studies found that premium growth have the positive impact on return on assets and return on equity. It shows that the increase in the premium growth leads to increase the return on assets and return on equity. Furthermore, gross domestic products have the positive impact on return on assets and return on equity. It means that increase in the gross domestic product have leads to increase the return on assets and return on equity. Moreover, inflation has the negative impact on return on assets and return on equity. It shows that increase in the inflation leads to decrease the return on assets and return on equity. Likewise, money supply has the negative impact on return on assets and return on equity. It indicates that the increase in the money supply leads to decrease the return on assets and return on equity of Nepalese insurance companies.

Siopi and Poufinas (2023) examined Impact of Internal and External Factors on the Profitability and Financial Strength of Insurance Groups. This paper studies the impact of internal and external factors on the profitability and financial strength of insurance groups across the European Union, focusing on the effect of the European sovereign debt crisis and the Solvency II Directive, which has not been addressed by the literature. The findings reveal that the efficiency of accounts receivable management and the state of the economy have a significant positive impact, whereas the underwriting risk and size have a significant negative impact on profitability and financial strength. Furthermore, long-term interest rates exert a significant positive influence, whereas the purchase of reinsurance, size of the domestic market, market structure, and inflation exert a significant negative influence on profitability. The European sovereign debt crisis has a significant negative impact on profitability and a positive but insignificant impact on financial strength. Solvency II has no statistically significant impact either on profitability or on financial strength. This paper contributes to the literature through the identification of the impact of the European sovereign debt crisis and Solvency II, which has not been depicted so far, as well as the impact of a series of internal and external factors on profitability and, for the first time, on financial strength.

Ahmeti and Iseni (2023) assessed Factors Affecting Profitability of Insurance Companies. Evidence from Kosovo. The ability to turn a profit from all of the company's business endeavors is expressed by profitability. It demonstrates how well management uses all of the

resources at its disposal to create profit. In order to determine how certain company factors affect profitability as measured by return on assets (ROA) and net profit margin (NPM), this paper looked at independent variables like liquidity, company size, company age, tangible asset, leverage, company capital, and company growth. For the years 2015 through 2020, eleven insurance firms make up the study's sample. The regression's findings show that the company's age, size, and leverage all significantly affect ROA. Meanwhile, firm development and size have a big impact on the NPM of insurance businesses in Kosovo.

Upadhyaya et al (2023) examined Determinants of financial performance in Nepalese nonlife insurance companies: A panel data analysis. The way insurance businesses operate financially is a major factor in propelling the economy as a whole toward growth and development. The purpose of the study is to investigate how financial performance metrics affect nonlife insurance businesses' Return on Equity (ROE) and Return on Assets (ROA). Thirteen nonlife insurance companies were taken into account in the study's methodology, and panel data covering a 14-year period (2008–2021) was examined. The E-Views software package was utilized to estimate the fixed effects model. The results of the panel data analysis indicate a significant and positive influence on ROA, accounting for 92.75% of its variance. The findings demonstrate a robust positive correlation between ROA and the following four critical variables: combined ratio, expense ratio, retention ratio, and gross premium. This emphasizes how crucial it is to improve components such as the gross premium, retention ratio, expense ratio, and combination ratio in order to increase ROA. The study's conclusion offers helpful information for raising the nonlife insurance industry's competitiveness and financial performance in Nepal. The report identifies the critical success elements influencing the insurance industry's efficiency and profitability. This implies that by concentrating on raising gross premium, retention ratio, expense ratio, and combined ratio, nonlife insurance businesses in Nepal can increase their profitability. The results hold significant ramifications for improving the nonlife insurance sector's competitiveness and overall performance in Nepal.

Mengstie et al. (2024) analyzed Impact of working capital management on profitability of private commercial banks in Ethiopia. An essential financial management choice for commercial banks' viability is working capital management. This study aims to investigate how working capital management affects the profitability of commercial banks. The study made use of secondary data from five private commercial banks' audited financial statements

in Ethiopia, which covered the years 2011 through 2020. Convenience played a role in choosing the banks. The impact of the current ratio, bank size, loans and advances to total asset ratio, current liabilities to total assets ratio, and current ratio on profitability were all assessed using the financial data provided by the banks. Descriptive and inferential statistics were used by the researchers. The Stata data processing package was used to analyze the data. The effect of working capital management on the profitability of commercial banks is investigated using an econometric model. Using a random effect model, the results showed that the ratio of loans and advances to total assets as well as bank size had a significant effect on the profitability of banks. It was discovered that the current ratio, the ratio of current assets to total assets, and the ratio of current liabilities to total assets had no bearing on the bank's capacity to make profits. Since working capital management determines a bank's profitability, variables influencing the profitability of commercial banks should receive careful consideration.

2.4 Research gap

From the studies reviewed it is evident that liquidity plays a significant role in better performance of business entities. The review highlights the effects of the various components of liquidity management on profitability. Most of the studies indicate that there is a significant relationship between liquidity and profitability. Above literature indicated that there was a trade of between liquidity and profitability in the financial sector and two variable are reinforced each other. There was also observed varying results depending on the industry in which the research was conducted. Whereas the studies have been mainly conducted in life insurance sectors, this study established the relationship between liquidity and profitability in life insurance sectors in Nepal.

The previous research is only limited few variables, it has not explained the specific determinant of profitability. The previous research has been incomplete to so the impact of profitability over the maintained liquidity. It has become incomplete to explain the impact over the operational efficiency and specific problem faced by the insurance due to conflicting impact of profitability.

The Previous research is only limited to financial and statistical tools. These study has been used only descriptive research design. Most of the study has been used correlations, simple regression, and panel regression analysis. Different financial and statistical analysis have

been used in this study. Among them ratio analysis correlation analysis and multiple regression analysis. In this study have been used descriptive and analytical research design. From the above studies cover the period 2014 to 2023. In this study cover the period 2013/14 to 2022/23.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology is the way to solve systematically about the research problem. study which includes various sections describing research plan and design, description of the sample, instrumentation, data collection procedure and time frame, validity and reliability of the study and analysis plan. In the absence of methodology, it is likely that the conclusions drawn Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go through their work of describing, explaining and predicting phenomena are called research methodology. This chapter therefore explains the methodology that is employed in this may be misunderstood.

Research methodology describes the method and process applied in the entire aspects of study and helps to resolve the systematic problems. Research methodology is used to collect information and data and sets out overall plan associated with a study.

3.1 Research design

The study uses descriptive and casual comparative research design. Descriptive research design is a research design concerned with finding out who, what, where, or how of the research. It describes a population with respect to important variables. Descriptive research design is use for various purposes one of which is to determine relationships between variables. A descriptive research design is adopted in the study to explain the relationship between liquidity and profitability. Descriptive research design is use to determine financial position because descriptive research consists of surveys and fact-finding inquiries of different types. Analytical research design is an impact measurement research design. The study adopted an casual comparative model to analyze the result of this study by determining the effect of liquidity on profitability of commercial banks in Nepal. Analytical research designs are use to facts or information already available, and analyze these to make a critical evaluation of the subject.

3.2 Population and sample

The NRB reports that 20 commercial banks are active in Nepal. Owing to temporal and resource limitations, the convenience sampling approach is intended for implementation.

The sample of commercial banks is selected using the judgmental sampling approach of non-probability sampling from among the various commercial banks. Thus, it is based on the convenience sampling.

The following are some examples of commercial banks:

S. No.	Name of sample Banks
1	Global IME Bank Limited (GBIME)
2	Everest Bank Limited (EBL)
3	Himalayan Bank Limited (HBL)
4	Nepal Investment Mega Bank Limited (NIMB)
5	NABIL Bank Limited (NABIL)

(Sources: NRB website)

3.3 Sources of data

The paper will be based on published literature and secondary data. Data are obtained from the annual reports of insurance companies and Insurance Board. Data are taken from annual reports (statement of financial position and income statement) of commercial banks website for the five financial period. The total number of commercial banks in operation is taken from the website of the insurance Board. Insurance Act, Regulation, Directives, Guidelines and Circulars are also consulted for literature review. Most of the information were available from the official websites NRB.

3.4 Data collection and processing procedure

The study employed secondary data and the variables were deduced from the audited financial statements of the 5 registered commercial banks firm for ten financial periods 2013/14 to 2022/23. This was influenced by the availability of the audited financial reports. The required information collection from annual report, journal, article, research report as well as NRB websites.

3.5 Data analysis tools and techniques

Ratio analysis will chose to measure the position of liquidity and profitability of the life insurance companies on the basis of income statement and balance sheet. Profitability will be measure by ROA, ROE, while liquidity measure by liquidity ratio, Credit risk ratio, total loan and advance to total assets, total deposit to total assets. The factor liquidity Influence

on profitability indicators will be expressed through correlations analysis. Multiple linear regression will be used to determine the relationship between liquidity (independent variable) and profitability (dependent variable). The collected data will be analyzed using descriptive statistics which employ tools such as percentages, mean, and standard deviation to help the researcher describe data. The collected data was analyzed by the use of descriptive statistics using SPSS. While the analytical statistic is used to get to conclusions about a specific sample data.

3.5.1 Financial analysis

A widely used tool for the financial analysis is ratio analysis. Ratio analysis is a technique of analysis and interpretation of financial statement. Ratio analysis is widely used tools for financial analysis, which establishes the numerical or quantitative relationship between two items. Under the ratio analysis, the following ratios can be analyzed to determine financial position of a companies.

Profitability ratio

The main objective of each and every business concern is to earn maximum profit. The position of the profitability of the company is analyzed with the help of this ratio. The profitability ratio is used to measure the operating performance of the companies. The profitability of the firms is measured by return on assets (ROA) and return on equity (ROE).

Return on assets

Return on assets manifest the efficiency of the companies in transforming the money utilized to purchase assets into net income. Therefore the higher return on assets shows the firms are more profitable. It is an important indicator of the overall productivity of the company, and shows the percentage of profit, company earns in relative to its total resources. It is determined by the following was.

$$\text{Return on assets} = \frac{\text{Net Profit After Tax}}{\text{Total Assets}} \times 100\%$$

Return on equity

Return on assets manifest gauge the capacity of the companies to yield profit from it is owners' investment. This ratio is considered from the investors perspectives. Higher is the ROE higher efficiency of management in optimize the equity revealed. It is determined by the following was.

$$\text{Return on Equity} = \frac{\text{Net Profit After Tax}}{\text{Total Equity}} \times 100\%$$

Liquidity ratio

Liquidity ratios measure the ability of the firm to meet its current obligations. This refers to the ability of an insurer to meet its short term obligations when it is due. It also shows the ability of an insurer to convert its assets in to cash as quickly as possible. In financial parlance, liquidity ratio generate than one manifest that the firms to be in good financial position.

Liquidity ratio

The liquidity ratio is calculated by dividing current assets by current liabilities. This shows the solvency and financial strength of the firm. It is basic yardstick of measuring the solvency and liquidity position of the firm. It is determined by the following was

$$\text{Liquidity Ratio (LR)} = \frac{\text{Current Assets (CA)}}{\text{Current Liabilities (CL)}}$$

The higher ratio indicates the position of the company is in liquid and able to pay its bills. Generally, the liquidity ratio of 2:1 is considered to be satisfactory. Higher ratio indicates the greater amount of working capital and less ratio vice-versa.

Total Loans and Advances to Total Assets Ratio

The Total Loans and Advances to Total Assets Ratio (TLTA) is a financial metric that evaluates a bank's risk exposure and leverage in relation to its total assets.

$$\text{Total Loans and Advances to Total Assets Ratio} = \frac{\text{Total laons and advances}}{\text{Total Assets}} \times 100$$

Total Deposits to Total Assets

The TLTA ratio is a crucial financial metric that evaluates a bank's lending activity in relation to its asset base, offering insights into risk exposure and profitability potential.

The TDTA ratio measures a bank's total assets funded by customer deposits, a stable funding source, crucial for assessing liquidity risk.

$$\text{Total Deposits to Total Assets} = \frac{\text{Total Deposits}}{\text{Total Assets}} \times 100$$

The TDTA ratio is a crucial indicator of a bank's funding structure, liquidity position, and stability, indicating strong deposit mobilization and better liquidity management.

Credit Risk Ratio (CRR)

The NPL to Total Loans ratio is a crucial indicator of a bank's credit risk exposure and loan portfolio quality, aiding stakeholders in assessing financial health and potential economic vulnerabilities.

$$\text{Credit Risk Ratio} = \frac{\text{Non-performing Loans}}{\text{Total Loans and Advances}} \times 100$$

3.5.2 Statistical analysis

Descriptive statistics are used to describe and discuss characteristics of a data set more generally and orderly than using raw data alone. Under the primary and secondary data analysis the percentage, mean, median, standard deviation maximum and minimum results i.e. each variables have been described in clear way for the detail analysis about its significance. The help of statistical tools is essential to measure the relationship of two or more variable. In this study, the following statistical tools are used.

I. Standard deviation (SD)

The standard deviation is the square root of the average of the square distances of the observation from the mean. The standard deviation enables us to determine, with a great deal of accuracy, where the values of a frequency distribution are located in relation to the mean. Different formulae are used to calculate standard deviation; among them following formulae has been use here:

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

II) Co-efficient of variation (CV)

The relative measure of dispersion based on the standard deviation is known as the coefficient of standard deviation. The percentage of measure of co-efficient of standard deviation is called co-efficient of variation.

$$\text{C.V} = \frac{\text{SD}}{\text{Mean}} \times 100$$

It is used for comparing the homogeneity and the uniformity of two or more distributions.

III) Correlation analysis

The study uses Pearson correlation analysis to define the association between liquidity on company's profitability. There is a majority of previous researches have chosen to employ

correlation analysis to first see the correlation between variables before conducting regression analysis. However, one of the shortcomings of correlation analysis is that it cannot identify a cause-and-effect relationship. Correlation co-efficient is defined as the association between the dependent variable and independent variable. It is a method of determining the relationship between these two variables. To calculate the Pearson correlation analysis SPSS version 25.0 database is used for tabulation and data analysis. Simple statistical tools like mean, standard deviation were analyzed.

3.5.3 Multiple regression analysis

Multiple regression analysis was carried out to identify the relationship between liquidity and profitability. Here liquidity is the independent variable, profitability is the dependent variable it can be represented as follows:

$$P = f(L)$$

Which show profitability is the function of liquidity

Where:

P = liquidity

L = profitability

In the present study, profitability is measured by using two ratios namely net return on assets and return on equity whereas liquidity is measured by using current ratio, quick ratio and leverage Ratio. The following two models are formulated to measure the impact of Liquidity and Profitability.

$$ROE = \beta_0 + \beta_1 LR + \beta_2 TLTA + \beta_3 TDTA + CRR + e \text{ ----- (1)}$$

$$ROA = \beta_0 + \beta_1 LR + \beta_2 TLTA + \beta_3 TDTA + CRR + e \text{ ----- (2)}$$

Where,

$\beta_0, \beta_1, \beta_2, \beta_3$ are the regression co-efficient

e → Error term

ROE → Return on equity

ROA → Return on assets

LR → Liquidity ratio

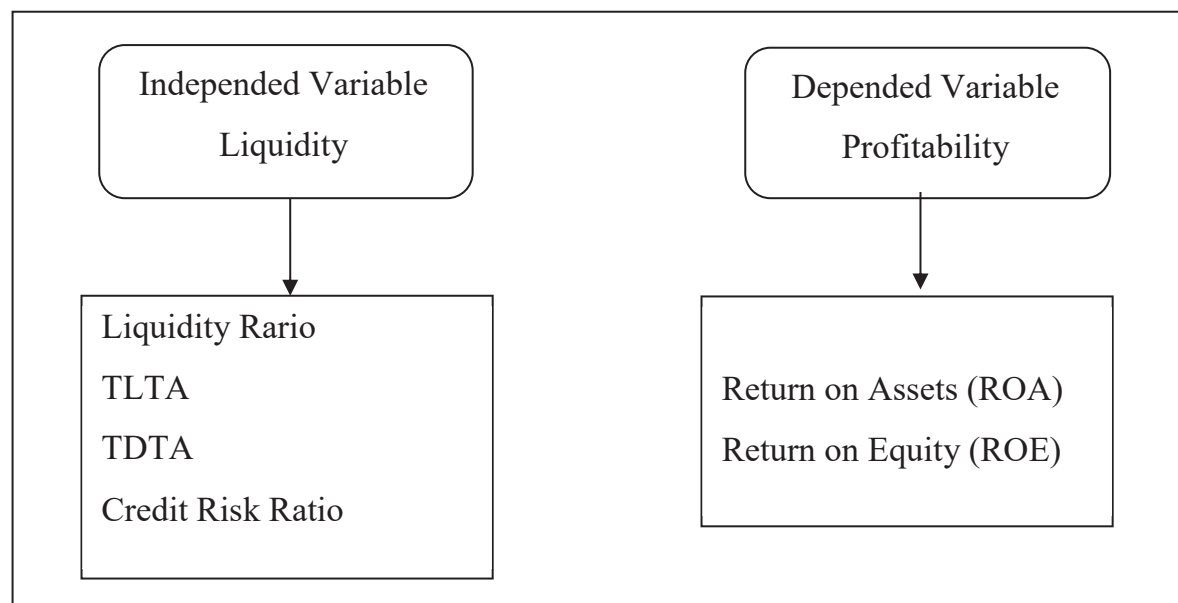
TLTA → Total Loan and advances to Total Assets

TDTA → Total Deposit to Total Assets

CRR → Cash Reserve Ratio

3.6 Conceptual framework

Conceptual framework of the study describes the systematic explanations of the relationship among the dependent and independent variables for the purpose of clarifying the relationship between liquidity and profitability variables of life insurance companies in Nepal. This section provide the conceptual framework of study and describes about variables that have been in study. In this study, dependent variables is return on equity and return on assets. Where current ratio, quick ratio and leverage ratio are the independent variables. Thus, the following conceptual model is framed to summarize the main focus and scope of this study.



Source Eljelly (2004)

Depended Variable

Return on Assets (ROA)

Return on assets manifest the efficiency of the companies in transforming the money utilized to purchase assets in to net income. Therefore the higher return on assets shows the firms are more profitable. It is an important indicator of the overall productivity of the company, and shows the percentage of profit, company earns in relative to its total resources.

Return on Equity (ROE)

Return on assets manifest gauge the capacity of the companies to yield profit from it is owners' investment. This ratio is considered from the investors perspectives. Higher is the ROE higher efficiency of management in optimize the equity revealed.

Independed Variable

Liquidity Ratio

A business's ability to maintain liquidity is essential. A company needs liquidity in order to pay its short-term debts. The ability of a business to settle its short-term debt is gauged by liquidity ratios. The speed at which a business may convert its assets and use them to pay off outstanding debts is measured by its liquidity ratio. The easier it is to pay off debts and stay out of default, the greater the ratio. Before giving short-term loans to a business, creditors look at this crucial condition. Failure to pay bills on time has an effect on an organization's creditworthiness and lowers the company's credit rating.

Total Loan and advances to Total Assets

The amount of a bank's assets that are allocated to providing loans and advances to consumers is indicated by the TLTA ratio. It displays the bank's approach to lending and its emphasis on making money from such loans. A more aggressive lending strategy, where a greater percentage of the bank's assets are devoted to loans, is generally indicated by a higher TLTA ratio. This raises credit risk in the event that borrowers miss payments, but it also has the potential to improve revenue if loans perform well. Since loans and advances frequently generate interest income for banks, profitability measures like return on equity (ROE) and return on assets (ROA) are impacted by the TLTA ratio. If loans are handled carefully, greater TLTA ratios can lead to higher ROA and ROE.

Total Deposit to Total Assets

The total assets of a bank that are financed by client deposits are shown by the TDTA ratio. This ratio is essential for evaluating liquidity risk because deposits are typically regarded as reliable funding sources in comparison to other funding options (such as borrowing from other financial institutions or issuing bonds). Strong client confidence and successful bank deposit mobilization tactics are generally indicated by higher TDTA ratios. It implies that the bank finances its assets primarily through deposits rather than from outside sources. Regulators frequently keep an eye on TDTA ratios to make sure banks have enough liquidity to cover demand for deposit withdrawals as well as legal obligations. Higher TDTA ratio banks typically have better liquidity levels.

Non-performing loan to total loan and advances (CRR)

A loan that is nonperforming (NPL) is regarded as being in default or almost in default. The likelihood that a debtor will return a loan in full drops significantly after it becomes nonperforming. Even if the debtor hasn't made up for all of the missing payments, an NPL becomes a reperforming loan (RPL) if the debtor starts making payments on it once more. If the debtor is 90 days past due or has not made any interest or principle payments within that time, the commercial loan is deemed nonperforming in the banking industry. A consumer debt becomes an NPL when it is 180 days past due.

CHAPTER - IV

RESULT AND DISCUSSION

This chapter's objective is to accomplish the stated goals by presenting and analysing data. This section is divided into five separate subsections. Of them, the first section presents the evaluation of the banks' liquidity situation. The second section displays the banks' profitability positions throughout the long and short terms. The final section discusses the banks' resource usage in a similar manner. The fourth section examines the linear relationship between a group of dependent and independent variables related to the liquidity and profitability of the banks. In a similar vein, the analysis produces the key findings.

4.1 Liquidity Ratio

The liquidity ratio is 6.0%. It illustrates how well the banks have adhered to the NRB's rules. This is how the liquidity ratios for GBIME, EBL, HBL, NIMB, and NABIL have been determined.

Table 1

Liquidity Ratio in (%)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	31.11	16.91	37.52	19	11.32
2014/15	30.12	24.27	30.32	12	14.15
2015/16	35.14	16.61	28.74	7.2	11.73
2016/17	33.54	16.52	26.64	10.5	12.42
2017/18	25.34	17.75	23.05	8.2	10.05
2018/19	22.13	18.56	26.25	5.5	4.78
2019/20	24.58	14.43	31.39	8.7	11.2
2020/21	29.89	18.15	26.51	4.4	3.66
2021/22	23.55	6.5	23.48	3.1	4.13

2022/23	30.34	7.11	27.38	3.5	6.89
Mean	28.57	15.68	28.13	8.21	9.03
S.D.	4.40	5.32	4.22	4.80	3.82
C.V.	15.42	33.93	15.01	58.48	42.31

Sources: Appendix I

The table gives information on the liquidity ratio for the fiscal years 2013–14 through 2022–23 for five distinct banks: GBIME, EBL, HBL, NIMB, and NABIL. This is an overview and analysis based on the data that was given. Both GBIME and NIMB exhibit erratic trends in CRR; for example, GBIME began at 31.11% in 2013–14 and dropped to 23.55% by 2022–2023 before rising once more. NIMB was 19% at the beginning, dropped to 3.1% in 2021/22, and then slightly increased. Less variation is often seen in EBL and HBL, which vary between 16.52% and 24.27% and 23.05% and 37.52%, respectively. With a range of 3.66% to 14.15% and a starting point of 11.32%, NABIL has a reasonably steady LR. The examination of the loan loss (LR) data reveals different patterns for each bank over time, with certain banks having greater LR volatility than others. Comprehending these patterns is crucial in evaluating the liquidity management tactics of individual banks and their reactions to shifts in regulations and the economy. The range of average loan rates for banks is 28.57% (GBIME) to 9.03% (NABIL). Standard deviations show variation around the mean; NIMB has the biggest standard deviation (4.80%) and GBIME has the lowest (4.40%). Relative variability is measured by CV, and it reveals that, when it comes to LR over time, NIMB (58.48%) and NABIL (42.31%) have the largest variability, showing less stability than the other banks.

4.2 Total Loan and advance to total Assets

The ratio of loans and advances to total assets shows how many loans and advances there are relative to all assets. The bank has been able to mobilize its funds through lending if the ratio is high.

Table 2

Total Loan and advance to total Assets In (%)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	82.27	71.82	71.90	70.46	61.51
2014/15	83.47	75.39	75.37	73.06	62.84
2015/16	81.47	73.52	79.12	78.68	69.02
2016/17	79.31	81.27	85.10	83.25	75.59
2017/18	87.67	81.53	88.31	87.16	83.56
2018/19	91.98	86.45	88.01	85.11	81.25
2019/20	88.80	82.95	82.73	82.93	79.72
2020/21	86.03	84.37	90.11	90.25	92.46
2021/22	94.99	89.76	90.37	89.19	92.03
2022/23	85.21	84.62	86.44	90.22	83.44
Mean	86.12	81.17	83.75	83.03	78.14
S.D.	4.87	5.84	6.37	6.99	10.89
C.V.	5.65	7.19	7.61	8.42	13.94

Sources: Appendix I

The table shows information on the percentage of total loans and advances to total assets for five banks (GBIME, EBL, HBL, NIMB, and NABIL) during the fiscal years 2013–14–2022/23. This is an examination of the data that was supplied. GBIME: began in 2011–12 at 82.27%, varied from 79.31% to 94.99%, and averaged 86.12%. fluctuates, but it consistently keeps a high proportion of loans to assets. EBL had a mean of 81.17% and ranged from 71.82% to 89.76%. exhibits reduced variability in contrast to GBIME. HBL had a mean of 83.75% and ranged from 71.90% to 90.37%. shows a modest degree of fluctuation throughout time. NIMB had a mean of 83.03% and varied from 70.46% to 90.22%. Variability comparable to that of HBL.

NABIL started at 61.51% in 2011/12, increased to 92.46% in 2018/19, then decreased to 83.44% in 2020/21, with a mean of 78.14%. demonstrates notable fluctuations, possessing a comparatively lower average in contrast to other institutions. The Total Loans and Advances to Total Assets ratio research sheds light on the lending practices of individual banks as well as their capacity to handle credit risk over time. In order to evaluate each bank's financial health and resilience in changing economic circumstances, it is imperative that these trends be understood. The range of mean values is 78.14% for NABIL and 86.12% for GBIME. Standard deviations show variation around the mean; GBIME has the lowest standard deviation (4.87%) and NABIL has the greatest (10.89%). Relative variability is highlighted by CV, where GBIME has the lowest (5.65%) and NABIL has the highest (13.94%). Greater variability in the loan-to-assets ratio over time is indicated by higher CVs.

4.3 Total Deposit to Total Assets

This ratio is significant because it shows how much a bank depends on deposits to finance its assets. A larger ratio typically indicates that the bank's funding source is more reliant on consumer deposits. To guarantee liquidity and stability in their business operations, banks frequently strive to keep this ratio balanced.

Table 3

Total Deposit to Total Assets (In%)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	87.13	86.56	86.56	85.68	86.38
2014/15	86.98	86.59	86.77	86.86	89.87
2015/16	85.16	82.31	86.28	83.70	86.62
2016/17	86.44	81.62	84.97	83.32	84.72
2017/18	82.67	79.77	84.25	80.65	84.30
2018/19	82.09	76.18	83.64	80.39	81.72
2019/20	82.75	77.58	83.32	83.15	81.22
2020/21	82.03	75.46	82.53	78.71	76.78
2021/22	79.48	76.64	79.29	75.60	77.71
2022/23	83.39	79.17	82.83	77.41	82.47
Mean	83.81	80.19	84.04	81.55	83.18
S.D.	2.52	4.04	2.28	3.63	4.05
C.V.	3.01	5.04	2.71	4.45	4.87

Sources: Appendix I

For five banks (GBIME, EBL, HBL, NIMB, and NABIL), data on the percentage of Total Deposits to Total Assets is shown in Table 3 for the fiscal years 2013–14 through 2022–23. Below is a data analysis. GBIME: Began at 87.13% in 2011–12, varied from 79.48% to 83.81%, and averaged 83.81%. demonstrates some fluctuation but, on average, keeps a high proportion of deposits to assets. EBL had a mean of 80.19% and ranged from 75.46% to 86.59%. demonstrates greater variability than GBIME. HBL had a mean of 84.04% and varied from 79.29% to 86.77%. displays moderately mean tendencies that are rather stable. NIMB had a mean of 81.55% and ranged from 75.60% to 83.70%. Variability akin to EBL is displayed. NABIL ranged from 76.78% to 89.87%, with a mean of 83.18%. Exhibits

significant variability, with the highest mean among the banks. The range of mean values is 83.81% (GBIME) to 80.19% (EBL). With EBL having the highest standard deviation (4.04%) and GBIME having the lowest (2.52%), standard deviations show variability around the mean. CV values for NABIL are 4.87%, whereas values for GBIME and EBL vary from 3.01% to 5.04%. Greater unpredictability in the deposit-to-assets ratio over time is indicated by higher CVs. Total Deposits to Total Assets ratio research sheds light on each bank's deposit mobilization tactics and how well they work to sustain steady funding sources over time. Comprehending these patterns is essential for evaluating the banks' overall financial well-being, funding stability, and liquidity levels.

4.4 Evaluation of Profitability Position of the Bank

The word "profitability" refers to how successfully a business operates. The following ratio has been used to gauge the banks' profitability position. These ratios are presented and thoroughly analyzed in this section.

4.4.1 Return on Equity

The ratio of NPAT to equity capital indicates the banks' operational efficiency. This ratio indicates the return on equity. The bank's ratios fluctuate, thus it is necessary to look into how much money was made through the utilization of the equity fund. Another term for it is the NPAT to book net worth ratio.

Table 4

ROE of Sample Banks in (%)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	15.90	15.77	15.77	24.47	30.26
2014/15	13.12	15.25	15.98	20.00	22.09
2015/16	15.45	20.61	21.93	15.66	24.32
2016/17	16.65	17.50	17.67	18.10	25.85
2017/18	15.47	16.00	13.26	2.13	19.60
2018/19	16.91	17.33	17.28	1.79	18.28

2019/20	10.04	13.50	14.70	1.19	13.40
2020/21	12.73	9.38	14.89	15.62	13.37
2021/22	13.14	10.88	10.75	11.17	8.03
2022/23	11.34	13.25	4.64	6.69	11.25
Mean	14.08	14.95	14.69	11.68	18.65
S.D.	2.34	3.31	4.59	8.36	7.11
C.V.	16.61	22.15	31.24	71.60	38.12

The Return on Equity (ROE) percentages for the five banks (GBIME, EBL, HBL, NIMB, and NABIL) during the fiscal years 2013–14–2022–2023 are displayed in the table. This analysis is based on the information that was given. The GBIME ROE has a mean of 14.08% and a range of 10.04% to 16.91%. Although it varies, it usually keeps its ROE at a moderate level. The EBL ROE has a mean of 14.95% and a range of 9.38% to 20.61%. demonstrates variability with a mean that is higher than GBIME. HBL ROE has a mean of 14.69% and a range of 4.64% to 21.93%. exhibits notable fluctuations, being the highest average value among the banks. The NIMB ROE has a mean of 11.68% and a range of 1.19% to 18.10%. shows a significant degree of variability, having the lowest mean of the banks. NABIL ROE ranges from 8.03% to 30.26%, with a mean of 18.65%. Shows variability with the highest mean among the banks. The range of mean ROE values is 11.68% (NIMB) to 18.65% (NABIL). The standard deviations show the range of values around the mean; GBIME has the lowest standard deviation (2.34%), while NIMB has the greatest (8.36%). The range of CV values, from 16.61% (GBIME) to 71.60% (NIMB), shows significant variation in ROE between banks. Greater volatility in such banks' profitability performance over time is indicated by higher CVs. Understanding each bank's financial performance and effectiveness in producing returns for shareholders is possible through the analysis of ROE. Comprehending the patterns and fluctuations in return on equity (ROE) facilitates the evaluation of the banks' overall financial well-being and risk profile across time.

4.4.2 Return on Assets

To determine the effectiveness of an investment on total assets relative to net profit, the NPAT to assets is computed. The banks' return on assets is shown in Table 5.

Table 5

Return on Assets (ROA) of sample bank (%)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	1.62	1.28	1.28	2.25	2.7
2014/15	1.39	1.29	1.31	1.88	1.8
2015/16	1.58	1.52	1.91	1.96	2.2
2016/17	1.75	1.72	1.99	2.06	2.6
2017/18	1.63	1.78	1.58	2.13	2.5
2018/19	1.82	1.80	2.04	1.79	2.1
2019/20	1.06	1.36	1.63	1.19	1.5
2020/21	1.21	0.92	1.66	1.56	1.6
2021/22	1.38	1.10	1.09	1.55	1.0
2022/23	1.27	1.34	0.47	0.83	1.3
Mean	1.47	1.41	1.50	1.72	1.93
S.D.	0.25	0.29	0.48	0.44	0.58
C.V.	16.83	20.76	32.00	25.86	30.12

Sources: Appendix I & II

The Return on Assets (ROA) percentages for the five banks (GBIME, EBL, HBL, NIMB, and NABIL) over the fiscal years 2013–14 through 2022–23 are shown in the table. This analysis is based on the information that was given. With a mean of 1.47%, GBIME ROA varies from 1.06% to 1.82%. varies, but keeps a moderate ROA most of the time. EBL ROA has a mean of 1.41% and a range of 0.92% to 1.80%. demonstrates variability with a mean that is comparatively lower than GBIME. HBL ROA has a mean of 1.50% and a range of 0.47% to 2.04%. exhibits notable fluctuations, being the highest average value among the banks.

The NIMB ROA has a mean of 1.72% and a range of 0.83% to 2.25%. shows variability in comparison to GBIME and EBL, with a larger mean. NABIL ROA has a mean of 1.93% and a range of 1.0% to 2.7%. displays the highest mean among the banks in terms of variability. The range of mean ROA values is 1.41% for EBL and 1.93% for NABIL. The standard deviations show the degree of variability around the mean; GBIME has the lowest standard deviation (0.25%) and HBL the most (0.48%). The range of CV values, 16.83% (GBIME) to 32.00% (HBL), shows a significant variation in ROA between banks. Greater fluctuation in profitability as indicated by ROA over time for those banks is suggested by higher CVs. The return on assets (ROA) of any bank gives information on how profitable its assets can be made. It is easier to evaluate the overall financial performance and risk profile of the banks over time when one is aware of the trends and variations in ROA.

4.5 Non-performing loan to Total Loan and Advance (CRR)

When a borrower defaults on a loan and fails to make monthly principle and interest payments for a predetermined amount of time, the loan is considered non-performing (NPL). When debtors are unable to make their loan payments due to financial difficulties or run out of money, the loan becomes non-performing. Depending on the conditions of the loan arrangement, banks typically designate loans as non-performing when principle and interest repayments are past due by more than 90 days. Once a loan is labeled as non-performing (NPL), there is far less chance that it will be repaid.

Table 6

Non-Performing loan to Total Loan and Advance (in %)

Fiscal Year	GBIME	EBL	HBL	NIMB	NABIL
2013/14	2.55	0.97	1.96	1.77	2.23
2014/15	2.23	0.66	1.23	1.25	1.82
2015/16	1.89	0.38	0.85	0.68	1.14
2016/17	1.6	0.25	0.85	0.83	0.8
2017/18	0.77	0.2	1.4	1.36	0.55
2018/19	0.55	0.16	1.12	2.78	0.74

2019/20	1.74	0.22	1.01	2.91	0.98
2020/21	1.41	0.12	0.48	2.46	0.84
2021/22	1.28	0.12	1.59	1.49	1.67
2022/23	3.15	0.79	4.93	4.54	3.39
Mean	1.72	0.39	1.54	2.01	1.42
S.D.	0.79	0.31	1.26	1.18	0.88
C.V.	45.94	79.53	81.80	58.71	62.16

Sources: Appendix I & II

The percentage of Non-Performing Loans (NPL) to Total Loans and Advances for five banks (GBIME, EBL, HBL, NIMB, and NABIL) during the fiscal years 2013–14–2022–2023 is displayed in the table. This analysis is based on the information that was given. The GBIME NPL ratio has a mean of 1.72% and a range of 0.55% to 3.15%. demonstrates variation, with a notable high around 2020–2021. The EBL NPL ratio has a mean of 0.39% and a range of 0.12% to 0.79%. shows comparatively low and consistent NPL ratios over time. The HBL to NPL ratio has a mean of 1.54% and a range of 0.48% to 4.93%. demonstrates notable fluctuations, with a particularly high ratio in 2020–21.

The NIMB NPL ratio has a mean of 2.01% and a range of 0.68% to 4.54%. demonstrates fluctuation, with a notable uptick in 2020–2021. The NABIL NPL ratio has a mean of 1.42% and a range of 0.8% to 3.39%. varies, usually keeping the NPL ratio at a modest level. The range of mean NPL ratio values is from 2.01% (NIMB) to 0.39% (EBL). The standard deviations show the degree of variability around the mean; EBL has the lowest standard deviation (0.31%) and HBL the greatest (1.26%). With a range of 45.94% (GBIME) to 81.80% (HBL), CV values show significant variation in NPL ratios between banks. Greater volatility in asset quality and credit risk management strategies over time for such banks is indicated by higher CVs.

The NPL ratios shed light on the asset quality and credit risk management practices of each bank. Assessing the overall risk exposure and longevity of the banks' loan portfolios over

time is made easier by having a thorough understanding of the patterns and variations in NPL ratios.

4.3 Descriptive Statistics

The descriptive data are displayed in the table. It displays the standard deviation of each variable along with the lowest, maximum, and mean values for the following: return on assets, return on equity, liquidity ratio, total loan and advance to total assets ratio, total deposit to total assets ratio, and credit risk ratio.

Table 7

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	50	.47	2.70	1.6056	.45333
ROE	50	1.19	30.26	14.8072	5.84177
LR	50	3.10	37.52	17.9252	9.98835
TLTA	50	61.51	94.99	82.4414	7.49084
TDTA	50	75.46	89.87	82.5540	3.57246
CRR	50	.12	4.93	1.4138	1.06315
Valid N (listwise)	50				

The dataset provided provides an extensive overview of important financial ratios for a sample of fifty banks. These include metrics like Cash Reserve Ratio (CRR), Total Loans to Total Assets (TLTA), Total Deposits to Total Assets (TDTA), Loan-to-Deposit Ratio (LR), and Return on Assets (ROA) plus Return on Equity (ROE). The profitability and leverage strategies of banks can be understood by looking at ROA, ROE, and LR. Banks earn an average return of 1.61% on their total assets, according to the average ROA of 1.6056%; variances in this figure may imply disparities in operational efficiency and asset utilization. The return on equity (ROE), which has an average of 14.8072%, shows the profitability from shareholders' equity. Its substantial variety (standard deviation of 5.84177%) indicates that banks have different levels of risk management and financial performance. With a wide range (from 3.10% to 37.52%) suggesting different approaches to loan portfolio management and deposit acquisition, the LR, with an average of 17.9252%, illustrates how dependent banks are on loans in comparison to deposits.

Furthermore, the makeup of banks' balance sheets is highlighted by TLTA and TDTA measurements. A significant amount of banks' assets are made up of loans, as indicated by the TLTA average of 82.4414%, which reflects the banks' lending activity and possible

exposure to credit risk. An even funding basis, mostly derived from deposits, is indicated by a TDTA average of 82.5540%, which is crucial for operational sustainability and liquidity. Last but not least, the CRR, which averages 1.4138%, specifies the percentage of deposits that banks have to hold as reserves, impacting regulatory compliance and liquidity management. Standard deviations and coefficients of variation highlight the variability across these ratios, which highlights the different risk profiles and financial approaches used by the sampled banks.

4.6.1 Correlation Analysis

Correlation analysis is a statistical method for ascertaining the strength of the relationship between two quantitative variables. Return on assets (ROA), return on equity (ROE), liquidity ratio, total loan and advance to total assets ratio, total deposit to total assets ratio, and credit risk ratio are all linked in this section. So, it makes sense to expect some kind of relationship between these variable pairs. A high correlation suggests that two or more variables have a substantial link, whereas a weak correlation shows little or no association between the variables. Therefore, using fifty observations (N) from 2070–2079–2080, this section attempts to explain how these factors connect to one another for 10 sample hydropower businesses. Signs "*" and "**" indicate statistically significant associations at the 2-tailed 5-percentage and 1-percentage levels, respectively. The Pearson correlation coefficients for every pair of variables are shown in the correlation matrix.

Table 8

Correlations sample banks

		ROA	ROE	LR	TLTA	TDTA	CRR
ROA	Pearson	1					
	Correlation						
	Sig. (2-tailed)						
	N	50					
ROE	Pearson	.684**	1				
	Correlation						
	Sig. (2-tailed)	.000					
	N	50	50				
LR	Pearson	-.160	.130	1			
	Correlation						
	Sig. (2-tailed)	.267	.370				
	N	50	50	50			
TLTA	Pearson	-	-	-.067	1		
	Correlation	.412**	.631**				
	Sig. (2-tailed)	.003	.000	.646			
	N	50	50	50	50		
TDTA	Pearson	.356*	.493**	.484**	-	1	
	Correlation				.686**		
	Sig. (2-tailed)	.011	.000	.000	.000		
	N	50	50	50	50	50	
CRR	Pearson	-	-	.023	.045	.136	1
	Correlation	.373**	.399**				
	Sig. (2-tailed)	.008	.004	.871	.757	.348	
	N	50	50	50	50	50	50

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

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

Important information about the relationships between important financial metrics, such as Return on Assets (ROA), Return on Equity (ROE), Liquidity Ratio (LR), Total Loan and Advance to Total Assets Ratio (TLTA), Total Deposit to Total Assets Ratio (TDTA), and Credit Reserve Ratio (CRR), is provided by the correlation analysis performed on the

sample of 50 banks. At 0.684**, the Pearson correlation coefficient shows a substantial positive relationship between ROA and ROE. This suggests a strong and positive correlation between a bank's profitability as determined by ROA and its profitability as determined by ROE with regard to equity. According to this, banks that have greater ROA also typically have higher ROE, indicating that they have made effective use of equity capital to produce returns. The association between ROA and LR is weakly negative and not statistically significant ($p = 0.267$), as indicated by the correlation coefficient of -0.160. This implies that a bank's loan-to-deposit ratio and profitability have little to no correlation, meaning that the amount of loans relative to deposits has little bearing on profitability (ROA).

The correlation between TLTA and ROA is -0.412**, indicating a statistically significant ($p = 0.003$) moderately unfavorable connection. This shows that banks with larger ratios of total loans to total assets typically have lower return on assets (ROA), suggesting possible risks associated with increased loan exposures that could negatively impact profitability. The correlation coefficient between ROA and TDTA is 0.356*, suggesting a statistically significant ($p = 0.011$) moderately positive association. This suggests that banks with greater ROAs typically have larger ratios of deposits to total assets, underscoring the stabilizing influence of deposit funding on profitability. The correlation between ROA and CRR is -0.373**, indicating a statistically significant ($p = 0.008$) moderately unfavorable association. This suggests that higher cash reserve ratios, while required for regulatory compliance, may restrain profitability as they reduce the funds available for lending and investment.

ROE and LR, TLTA, TDTA, and CRR, ROE and these variables exhibit comparable patterns of connection, with correlations indicating their individual effects on profitability in relation to equity capital. Compared to ROA, ROE shows a more marked negative association (-0.631**) with TLTA, suggesting that larger loan-to-asset ratios have a greater effect on return on equity. The relationship between important financial measures (LR, TLTA, TDTA, and CRR) and profitability measurements (ROA and ROE) among banks is highlighted by this correlation analysis. It draws attention to the ways that asset quality, regulatory compliance, and liquidity management impact banks' bottom lines. In order to maximize profitability while preserving financial stability, strategic decision-making in banking operations, risk management, and regulatory compliance is critical.

4.6.2 Regression Analysis of variables

Finding the statistical link between two or more variables and making predictions about one variable based on the others are two uses of regression analysis. In this study, multiple regression analysis has been done. The technique of using multiple independent variables to determine the appropriate regression line for predicting the value of the dependent variable is known as numerous regression analysis. In this analysis, Return on Assets (ROA) and Return on Equity (ROE) as dependent variable and four independent variables are Credit risk ratio , Liquidity Ratio (LR), total loan, advances to total assets (TLTA) and Total deposit to total assets The availability of the data has been taken for the last ten years.

$$ROA = \beta_0 + \beta_1 CRR + \beta_2 LR + \beta_3 TLTA + \beta_4 TDTA + e$$

$$ROE = \beta_0 + \beta_1 CRR + \beta_2 LR + \beta_3 TLTA + \beta_4 TDTA + e$$

Where, a = point of intercept on Y-axis = The value of X1 when X2 =0

b1 = Slope of X1 with variable Y holding variable X2 constant.

b2= Slope of X2 with variable Y holding variable X1 constant.

Y = Dependent variable (ROA) and (ROE)

X1= CRR

X2= LR

X3 = TLTA

X4 = TDTA

ei = Error term

Table 9

Regression CRR, LR, TLTA, TDTA on ROA

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685 ^a	.469	.422	.34472

a. Predictors: (Constant), CRR, LR, TLTA, TDTA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.722	4	1.181	9.935	.000 ^b
	Residual	5.347	45	.119		
	Total	10.070	49			

a. Dependent Variable: ROA

b. Predictors: (Constant), CRR, LR, TLTA, TDTA

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.978	2.653		-1.876	.067
	LR	-.021	.006	-.473	-3.424	.001
	TLTA	.002	.010	.039	.229	.820
	TDTA	.085	.025	.673	3.462	.001
	CRR	-.194	.048	-.455	-4.029	.000

a. Dependent Variable: ROA

Regression analysis on the variables that together affect ROE for the sample of 50 banks is provided by the following variables: Cash Reserve Ratio (CRR), Loan-to-Deposit Ratio (LR), Total Loans to Total Assets Ratio (TLTA), and Total Deposits to Total Assets Ratio (TDTA). The predictors (CRR, LR, TLTA, TDTA) and ROE have a significant connection ($F = 14.622$, $p = .000$) according to the regression model. With a R Square of .565, the model explains 56.5% of the variation in ROE, meaning that CRR, LR, TLTA, and TDTA together account for over half of the variation in banks' profitability as determined by ROE. After adjusting for the number of predictors, the Adjusted R Square comes out at .527. With four degrees of freedom, the regression model's Sum of Squares for Regression is 945.076, yielding a Mean Square of 236.269. At least one of the variables significantly contributes to explaining the variance in ROE, as indicated by the highly significant F-statistic of 14.622 ($p = .000$). With 45 degrees of freedom and a residual sum of squares of 727.111, the mean square is 16.158. The standard error is 30.937 and the intercept (Constant) is 11.935. It can be observed from the t-value of 0.386 and the p-value of 0.701 that the constant term is not statistically meaningful. With a standard error of 0.073, the coefficient for LR is -0.008. -

0.013 is the standardized coefficient (Beta). With a t-value of -0.105 and a p-value of 0.917, the model suggests that LR is not a statistically significant predictor of ROE. TLTA's coefficient is -0.342, and its standard error is 0.119. -0.438 is the standardized coefficient (Beta). With a p-value of 0.006 and a t-value of -2.867, TLTA is shown to have a statistically significant negative impact on ROE.

TDTA's coefficient is 0.417, and its standard error is 0.288. 0.255 is the standardized coefficient (Beta). With a t-value of 1.449 and a p-value of 0.154, the model suggests that TDTA is not a statistically significant predictor of ROE. CRR's coefficient is -2.271, and its standard error is 0.561. -0.413 is the standardized coefficient (Beta). The data suggests that there is a statistically significant negative impact of CRR on ROE, as indicated by the t-value of -4.045 and the p-value of 0.000. The non-significant p-value (0.917) of the Loan-to-Deposit Ratio (LR) in this model suggests that it has no significant effect on ROE. ROE is negatively impacted by the Total Loans to Total Assets Ratio (TLTA) in a statistically significant way ($p = 0.006$). This implies that banks with larger loan-to-asset ratios typically have lower return on equity (ROE), which may be a reflection of increased credit risk or decreased loan profitability. The non-significant p-value (0.154) of the Total Deposits to Total Assets Ratio (TDTA) in this model suggests that it has no significant effect on ROE. ROE is negatively impacted by the Cash Reserve Ratio (CRR) in a statistically significant way ($p = 0.000$). This suggests that regulatory requirements for increased CRR limit the amount of money available for lending and investment, which lowers profitability as indicated by ROE.

The different effects of regulatory compliance (CRR) and liquidity management (TLTA) on banks' profitability as determined by ROE are highlighted by the regression analysis. To improve shareholder returns and overall financial performance, banks must optimize their financial strategies, risk management procedures, and compliance initiatives. This requires a thorough understanding of these relationships. Changes to these ratios may result in higher ROE, which would be advantageous to the banks and other stakeholders.

Table 10

Regression CRR, LR, TLTA, TDTA on ROE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.752 ^a	.565	.527	4.01970

a. Predictors: (Constant), CRR, LR, TLTA, TDTA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	945.076	4	236.269	14.622	.000 ^b
	Residual	727.111	45	16.158		
	Total	1672.187	49			

a. Dependent Variable: ROE

b. Predictors: (Constant), CRR, LR, TLTA, TDTA

Coefficients^a

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	11.935	30.937		.386	.701
	LR	-.008	.073	-.013	-.105	.917
	TLTA	-.342	.119	-.438	-2.867	.006
	TDTA	.417	.288	.255	1.449	.154
	CRR	-2.271	.561	-.413	-4.045	.000

a. Dependent Variable: ROE

Regression analysis on the variables that together affect ROE for the sample of 50 banks is provided by the following variables: Cash Reserve Ratio (CRR), Loan-to-Deposit Ratio (LR), Total Loans to Total Assets Ratio (TLTA), and Total Deposits to Total Assets Ratio (TDTA). The predictors (CRR, LR, TLTA, TDTA) and ROE have a significant connection ($F = 14.622$, $p = .000$) according to the regression model. With a R Square of .565, the model explains 56.5% of the variation in ROE, meaning that CRR, LR, TLTA, and TDTA together account for over half of the variation in banks' profitability as determined by ROE. After adjusting for the number of predictors, the Adjusted R Square comes out at .527. With four degrees of freedom, the regression model's Sum of Squares for Regression is 945.076,

yielding a Mean Square of 236.269. At least one of the variables significantly contributes to explaining the variance in ROE, as indicated by the highly significant F-statistic of 14.622 ($p = 0.000$). With 45 degrees of freedom and a residual sum of squares of 727.111, the mean square is 16.158.

The standard error is 30.937 and the intercept (Constant) is 11.935. It can be observed from the t-value of 0.386 and the p-value of 0.701 that the constant term is not statistically meaningful. With a standard error of 0.073, the coefficient for LR is -0.008. -0.013 is the standardized coefficient (Beta). With a t-value of -0.105 and a p-value of 0.917, the model suggests that LR is not a statistically significant predictor of ROE. TLTA's coefficient is -0.342, and its standard error is 0.119. -0.438 is the standardized coefficient (Beta). With a p-value of 0.006 and a t-value of -2.867, TLTA is shown to have a statistically significant negative impact on ROE. TDTA's coefficient is 0.417, and its standard error is 0.288. 0.255 is the standardized coefficient (Beta). With a t-value of 1.449 and a p-value of 0.154, the model suggests that TDTA is not a statistically significant predictor of ROE. CRR's coefficient is -2.271, and its standard error is 0.561. -0.413 is the standardized coefficient (Beta). The data suggests that there is a statistically significant negative impact of CRR on ROE, as indicated by the t-value of -4.045 and the p-value of 0.000.

The non-significant p-value (0.917) of the Loan-to-Deposit Ratio (LR) in this model suggests that it has no significant effect on ROE. ROE is negatively impacted by the Total Loans to Total Assets Ratio (TLTA) in a statistically significant way ($p = 0.006$). This implies that banks with larger loan-to-asset ratios typically have lower return on equity (ROE), which may be a reflection of increased credit risk or decreased loan profitability. The non-significant p-value (0.154) of the Total Deposits to Total Assets Ratio (TDTA) in this model suggests that it has no significant effect on ROE. ROE is negatively impacted by the Cash Reserve Ratio (CRR) in a statistically significant way ($p = 0.000$). This implies that higher CRR, mandated for regulatory purposes, reduces funds available for lending and investment, thereby lowering profitability measured by ROE.

The different effects of regulatory compliance (CRR) and liquidity management (TLTA) on banks' profitability as determined by ROE are highlighted by the regression analysis. To improve shareholder returns and overall financial performance, banks must optimize their financial strategies, risk management procedures, and compliance initiatives. This requires

a thorough understanding of these relationships. Changes to these ratios may result in higher ROE, which would be advantageous to the banks and other stakeholders.

4.7 Major findings

The major findings of the study are noted out as follows:

- The table presents data on the liquidity ratio (LR) for five banks: GBIME, EBL, HBL, NIMB, and NABIL. GBIME and NIMB show erratic trends, with GBIME starting at 31.11% and NIMB at 19%. EBL and HBL show less variation, while NABIL has a steady LR. Loan loss (LR) data reveals different patterns for each bank, with NIMB having the largest variability and GBIME having the lowest. Understanding these patterns is crucial for evaluating banks' liquidity management strategies.
- The study examines the total loans and advances to total assets ratios of five banks (GBIME, EBL, HBL, NIMB, and NABIL) from 2013-2014 to 2022/23. GBIME consistently maintains a high proportion of loans to assets, while EBL and HBL show reduced variability. NABIL, with a lower average, shows notable fluctuations. The research helps evaluate each bank's financial health and resilience in changing economic circumstances. GBIME has the lowest standard deviation and highest relative variability, with higher CVs indicating greater variability in the loan-to-assets ratio over time.
- The data analysis shows the percentage of Total Deposits to Total Assets for five banks (GBIME, EBL, HBL, NIMB, and NABIL) from 2013-2014 to 2022-23. GBIME's average is 83.81%, while EBL's mean is 80.19%. HBL's mean is 84.04%, while NIMB's mean is 81.55%. NABIL's mean is 83.18%, with the highest mean among the banks. The study reveals the banks' deposit mobilization tactics and their ability to sustain steady funding sources.
- The table displays the Return on Equity (ROE) percentages for five banks (GBIME, EBL, HBL, NIMB, and NABIL) during the fiscal years 2013–14–2022–2023. GBIME's ROE is moderate, while EBL's ROE is higher. HBL's ROE is the highest average value, while NIMB's ROE is the lowest. NABIL's ROE ranges from 8.03% to 30.26%, with a mean of 18.65%. The standard deviations show the variability in ROE values, with GBIME having the lowest standard deviation. Understanding these patterns helps evaluate banks' financial well-being and risk profile.
- The table presents the Return on Assets (ROA) percentages for five banks (GBIME, EBL, HBL, NIMB, and NABIL) from 2013-2014 to 2022-23. The mean ROA is

1.47%, with GBIME having the lowest standard deviation (0.25%) and HBL the most (0.48%). The mean ROA values range from 1.41% for EBL to 1.93% for NABIL. The standard deviations show variability around the mean, with higher CVs suggesting greater profitability fluctuations. Understanding these trends and variations helps evaluate the overall financial performance and risk profile of banks over time.

- The table displays the percentage of Non-Performing Loans (NPL) to Total Loans and Advances for five banks (GBIME, EBL, HBL, NIMB, and NABIL) during fiscal years 2013–14–2022–2023. The GBIME NPL ratio is 1.72%, with a high peak around 2020–2021. The EBL NPL ratio is 0.39%, with a low and consistent ratio. The HBL to NPL ratio is 1.54%, with a high peak in 2020–21. The NIMB NPL ratio is 2.01%, with a notable increase in 2020–2023. Understanding these NPL ratios helps assess risk exposure and loan portfolio longevity.
- The dataset provides a comprehensive analysis of financial ratios for fifty banks, including Cash Reserve Ratio (CRR), Total Loans to Total Assets (TLTA), Total Deposits to Total Assets (TDTA), Loan-to-Deposit Ratio (LR), and Return on Assets (ROA) plus Return on Equity (ROE). The average return on assets (ROA) is 1.61%, while ROE is 14.8072%. The LR is 17.9252%, indicating banks' dependence on loans. The TLTA and TDTA measurements reveal a significant portion of banks' assets, with loans being the primary source of funding. The CRR indicates the percentage of deposits held as reserves.
- The study reveals a strong positive correlation between financial metrics like Return on Assets (ROA), Return on Equity (ROE), Liquidity Ratio (LR), Total Loan and Advance to Total Assets Ratio (TLTA), Total Deposit to Total Assets Ratio (TDTA), and Credit Reserve Ratio (CRR), suggesting that banks with higher ROA typically have higher ROE.
- The regression analysis of 50 banks reveals a significant connection between the Cash Reserve Ratio (CRR), Loan-to-Deposit Ratio (LR), Total Loans to Total Assets Ratio (TLTA), and Total Deposits to Total Assets Ratio (TDTA) and return on equity (ROE). The model explains 56.5% of the variation in ROE, indicating that CRR, LR, TLTA, and TDTA collectively account for over half of the variation in banks' profitability. The model also shows that the constant term is not statistically meaningful. The coefficients for LR, TLTA, TDTA, and CRR all have a negative impact on ROE. The non-significant p-value of LR suggests no significant effect on

ROE. The model also shows that ROE is negatively impacted by the Total Loans to Total Assets Ratio (TLTA),

- The regression analysis of 50 banks reveals a significant connection between the Cash Reserve Ratio (CRR), Loan-to-Deposit Ratio (LR), Total Loans to Total Assets Ratio (TLTA), and Total Deposits to Total Assets Ratio (TDTA) and return on equity (ROE). The model explains 56.5% of the variation in ROE, indicating that CRR, LR, TLTA, and TDTA collectively account for over half of the variation in banks' profitability. The model also shows that the constant term is not statistically meaningful. The coefficients for LR, TLTA, TDTA, and CRR all have a statistically significant negative impact on ROE. The non-significant p-value of LR suggests no significant effect on ROE. The study highlights the importance of optimizing financial strategies, risk management procedures, and compliance initiatives to improve shareholder returns and overall financial performance. Changes to these ratios may lead to higher ROE, benefiting banks and stakeholders.

4.8 Discussion

A thorough financial analysis was conducted on five banks (GBIME, EBL, HBL, NIMB, and NABIL) using a range of financial metrics, including non-performing loans (NPL), total loans to total assets ratio (TLTA), total deposits to total assets ratio (TDTA), liquidity ratio (LR), return on equity (ROE), and return on assets (ROA). The main ideas and interpretations are listed below. With GBIME beginning at 31.11% and NIMB at 19%, both metrics exhibit unpredictable movements in LR. This unpredictable behavior suggests that these banks' capacity to fulfill short-term obligations varies, which may have an impact on how well they manage liquidity risk (Bhunia,2010). Maintaining a high ratio of loans to assets is a consistent feature of GBIME, indicating a strategy that mainly depends on lending activities to drive asset growth (Khadka,2023). EBL and HBL, on the other hand, exhibit less variation in their TLTA, pointing to more consistent loan portfolio management procedures. Different banks use different strategies for mobilizing deposits, according to the report. EBL and NIMB have somewhat lower mean TDTA values than GBIME, HBL, and NABIL, which all have values above 80%. This indicator shows how banks go about finding reliable sources of finance. Among the banks, HBL has the greatest average ROE; GBIME and NIMB have lower figures. With a range of 8.03% to 30.26%, NABIL's ROE exhibits significant swings that suggest shifting levels of profitability over time. With the greatest mean ROA (1.93%), NABIL appears to be utilizing its assets efficiently in order to create earnings. When

compared to other banks, GBIME exhibits the lowest standard deviation in ROA, indicating more stable profitability. The NPL ratio is highest at 2.01% for NIMB, and it has been rising noticeably over the last few years (2020–2023). This pattern draws attention to possible problems with NIMB's credit risk management and loan quality.

In general, the significance of these financial ratios in evaluating the profitability, risk management strategies, and financial health of banks (Mengstie et al., 2024). By guiding strategic decisions and risk mitigation initiatives, stakeholders may assess each bank's performance and resilience in various economic conditions by having a clear understanding of these measures (Panigrahi,2013).

CHAPTER – V

SUMMARY AND CONCLUSION

5.1 Summary

Commercial banks are one of the vital aspects of this sector, which deals with the process of channeling the available resources into the needed sector. It is the intermediary between the deficit and surplus of financial resources. Today, banks are under great pressure to meet the objectives of their stockholders, employees, depositors, and borrowing customers while somehow keeping government regulators satisfied that the bank's policies, loans, and investments are sound. The majority of the needs of the stakeholders are related to the profitability of the banks. Thus, the foremost objective of the bank is profit maximization. As with other types of business entities, commercial banks are also inspired by profit. In this age of great competition, only profitable banks can sustain themselves for a long time. Financial policies of any concern are directly or indirectly influenced by their profitability. Thus, it is a base for a bank's survival, growth and expansion. This research, 'Analysis of Liquidity and Profitability of Commercial Banks in Nepal with Reference to Global IME, Everest Bank Limited, Himalayan Banks Limited, Nepal Investment Mega Bank Limited, NABIL bank Limited.' presents the financial mirror, showing the strengths and weaknesses of the banks. Under it, the credit management, profitability position, and credit risk of sample banks have been analyzed. The main objective of the study is to measure the profitability and liquidity position of Commercial banks in Nepal, to examine the relationship between liquidity and profitability of Commercial banks in Nepal, to determine the effect of liquidity on profitability of Commercial banks in Nepal.

The study examines the liquidity ratio (CRR) and loan loss (LR) data of five banks, GBIME, EBL, HBL, NIMB, and NABIL, from 2013-2014 to 2022/23. GBIME consistently maintains a high proportion of loans to assets, while EBL and HBL show reduced variability. NABIL shows notable fluctuations, with a lower average. The study also examines the percentage of Total Deposits to Total Assets for five banks, revealing their deposit mobilization tactics and ability to sustain steady funding sources. Return on Equity (ROE) percentages for five banks are moderate, with GBIME's moderate ROE and higher ROA values. The study also examines the percentage of Non-Performing Loans (NPL) to Total Loans and Advances for five banks, showing a strong positive correlation between

financial metrics like ROA, ROE, Liquidity Ratio, Total Loan and Advance to Total Assets Ratio, Total Deposit to Total Assets Ratio, and Credit Reserve Ratio.

The regression analysis of 5 banks reveals a significant connection between CRR, Loan-to-Deposit Ratio, Total Loans to Total Assets Ratio, and Total Deposits to Total Assets Ratio and return on equity (ROE). The model explains 56.5% of the variation in ROE, indicating that CRR, LR, TLTA, and TDTA collectively account for over half of the variation in banks' profitability. The study emphasizes the importance of optimizing financial strategies, risk management procedures, and compliance initiatives to improve shareholder returns and overall financial performance. Changes to these ratios may lead to higher ROE, benefiting banks and stakeholders.

5.2 Conclusions

The analysis of financial ratios for the sample of 50 banks reveals several critical insights into their operational performance and financial health. The Return on Assets (ROA) and Return on Equity (ROE) metrics provide a gauge of profitability, with average ROA at 1.6056% indicating modest returns on total assets and ROE at 14.8072% reflecting varying levels of profitability relative to shareholders' equity. The Loan-to-Deposit Ratio (LR) averaging 17.9252% indicates how banks balance loan issuance against deposit levels, crucial for assessing liquidity and risk exposure.

Additionally, the Total Loans to Total Assets (TLTA) and Total Deposits to Total Assets (TDTA) ratios, both hovering around 82%, highlight the substantial role of loans and deposits in banks' balance sheets. TLTA underscores banks' lending activities and potential credit risk, while TDTA reflects their reliance on stable deposit funding. The Cash Reserve Ratio (CRR), averaging 1.4138%, illustrates compliance with regulatory requirements for maintaining reserves against deposits, influencing liquidity management strategies.

The regression analysis of Return on Equity (ROE) using Cash Reserve Ratio (CRR), Loan-to-Deposit Ratio (LR), Total Loans to Total Assets Ratio (TLTA), and Total Deposits to Total Assets Ratio (TDTA) provides valuable insights into factors influencing banks' profitability. The findings reveal that CRR has a significant negative impact on ROE, highlighting the stringent regulatory requirements that limit banks' ability to deploy funds for more profitable activities. In contrast, LR and TDTA do not significantly affect ROE,

suggesting that variations in these ratios do not strongly influence profitability in the context of this study. However, TLTA demonstrates a significant negative relationship with ROE, indicating that higher exposure to loans relative to assets reduces profitability, possibly due to higher credit risk or lower returns on loan portfolios. Overall, these findings underscore the importance for banks to carefully manage their liquidity reserves while optimizing asset allocation strategies to enhance profitability and meet regulatory requirements effectively. Future research could explore additional factors and consider different economic environments to further refine these insights and strategies for improving banks' financial performance.

5.3 Implication

Following are some recommendations based on major findings of the study:

- GBIME and NIMB exhibit erratic trends in liquidity ratios, indicating potential challenges in managing short-term liquidity needs compared to EBL, HBL, and NABIL, which show more stable trends.
- Banks like HBL consistently maintain high levels of deposits relative to their assets, suggesting strong deposit mobilization strategies.
- NIMB and GBIME experience higher fluctuations in their NPL ratios, indicating varying levels of credit risk management effectiveness compared to banks with lower and more stable NPL ratios like EBL and HBL.
- HBL consistently shows the highest average ROE among the banks, reflecting potentially superior efficiency in generating returns for shareholders. GBIME, despite stable performance, exhibits moderate ROE, while NIMB has the lowest ROE, suggesting challenges in profitability.
- GBIME maintains a high proportion of loans to assets, indicating an aggressive lending strategy compared to other banks.
- NABIL consistently shows higher ROA compared to other banks, indicating efficient asset utilization and profitability.
- Understanding these trends helps in evaluating each bank's financial resilience, risk appetite, and strategic focus. Banks with stable and efficient ratios (e.g., HBL in ROE and ROA) may be perceived as more robust and capable of weathering economic fluctuations.

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ABSTRACT This research focuses on

the profitability and liquidity position of commercial banks in Nepal, examining **the relationship between liquidity and profitability**

. Research methodology is a systematic approach to solving research problems, encompassing plan, design, sample description, instrumentation, data collection, validity, reliability, and analysis. The study analyzed the liquidity ratio (CRR) and loan loss (LR) data of five banks, revealing that GBIME consistently maintains a high proportion of loans to assets. The study also found a moderate return on equity (ROE) percentage for five banks, with GBIME having a moderate ROE and higher ROA values. The study highlights the importance of optimizing financial strategies, risk management procedures, and compliance initiatives to improve shareholder returns and overall financial performance. The study analyzes financial ratios of 5 banks to assess their operational performance and financial health. The Return on Assets (ROA) and Return on Equity (ROE) metrics indicate profitability, while the Loan-to-Deposit Ratio (LR) and Total Loans to Total Assets (TLTA) ratios show liquidity and risk exposure. The Credit risk ratio (CRR) reveals regulatory requirements affecting banks' profitability. The study also finds that CRR negatively impacts ROE, indicating stricter regulations. TLTA shows a negative relationship with ROE, suggesting higher exposure to loans reduces profitability. Future research could explore additional factors and economic environments to improve banks' financial performance. Key: ROA, ROE, LR, CRR, TL, TA, TD, sample banks. CHAPTER-I INTRODUCTION 1.1 Background of the Study Since the majority of the indices used to measure corporate liquidity are functions of the components of working capital, liquidity management is typically seen through the lens