IMAPCT OF LIQUIDITY ON THE FINANCIAL PERFORMANCE OF NEPALESE DEVELOPMENT BANKS

A Dissertation Submitted to Office of the Dean in Partial Fulfillment of the Requirements for the Degree of Masters of Business Studies (MBS)

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CERTIFICATION OF AUTHORSHIP

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

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

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REPORT OF RESEARCH COMMITTEE

Niraj Regmi has defended research proposal entitled "**Impact of Liquidity on the Financial Performance of Nepalese Development Banks**" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidance of supervisor Asst. Prof. Bhoj Raj Ojha and submit the dissertation for evaluation and Viva-Voce examination.

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APPROVAL SHEET

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ABBREVIATIONS

AD	:	Annon Domini
ANOVA	:	Analysis of Variances
CAR	:	Capital Adequacy Ratio
CDR	:	Credit Deposit Ratio
Coeff.	:	Coefficient
CRR	:	Cash Reserve Ratio
CS	:	Collateral Security
e	:	Error Term
EXC	:	Excel Development Bank Ltd.
F-Value	:	Fishers Value
FY	:	Fiscal Year
GAR	:	Garima Bikash Bank Ltd.
JYO	:	Jyoti Bikash Bank Ltd.
KAMA	:	Kamana Bikash Bank Ltd.
LUM	:	Lumbini Bikash Bank Ltd.
MAHA	:	MahaLaxmi Development Bank Ltd.
MBS	:	Master's in Business Studies
MUK	:	Muktinath Bikash Bank Ltd.
NPLR	:	Non-performing Loan Ratio
P-Value	:	Probability Value
ROA	:	Return on Assets
ROE	:	Return on Equity
Rs.	:	Rupees
S.D.	:	Standard Deviation
SHI	:	Shine Resunga Bikash Bank Ltd.
SIN	:	Sindhu Bikash Bank Ltd.
SNG	:	Sangrila Bikash Bank Ltd.

ABSTRACT

This study investigates the impact of capital adequacy ratio (CAR), credit deposit ratio (CDR), non-performing loan ratio (NPLR), and liquidity (cash reserve ratio, CRR) on the profitability of Nepalese development banks, measured through return on equity (ROE) and return on assets (ROA). The primary objectives include analyzing the patterns of these variables, examining their relationships with profitability, and assessing their impacts on bank performance. Using a descriptive and correlational research design, the study incorporates data from ten development banks with the highest market capitalization, covering the fiscal years 2013/14 to 2022/23. Data analysis employed descriptive statistics, correlation analysis, and multiple regression models. Findings reveal that CAR positively influences profitability, highlighting the critical role of capital adequacy in sustaining financial stability and performance. Conversely, NPLR exhibits a negative impact, indicating that poor asset quality and high levels of non-performing loans erode profitability. CDR demonstrates mixed impacts, emphasizing the importance of maintaining an optimal balance between loans and deposits. Liquidity, as measured by CRR, has a significant but varied relationship with profitability, underscoring the need for impassive liquidity management.

The implications are threefold. Practically, banks should focus on enhancing their capital base, reducing non-performing loans, and optimizing liquidity management to sustain profitability. Theoretically, the study reinforces existing theories of financial stability, risk management, and their linkages with profitability in the banking sector. For future research, it opens avenues to explore additional determinants of profitability, comparative studies across banking systems, and the integration of macroeconomic factors and non-financial variables. This study contributes to understanding the dynamics of profitability in Nepalese development banks, providing insights for practitioners, policymakers, and researchers to enhance the banking sector's resilience and efficiency in a competitive financial environment.

Keywords: *Capital Adequacy Ratio, Non-Performing Loan Ratio, Liquidity, Profitability, Development Banks.*

CHAPTER-I
INTRODUCTION

1.1 Background of the Study

The major purpose of the study is as regard to impact of bank liquidity impact on profitability of development banks in Nepal. Specifically, it examines the impact of capital ratio, investment ratio, liquidity ratio and quick ratio to return on assets and return on equity of development banks of Nepal. Liquidity handling to development banks is a challenging job since higher and lower cash holding nature may bring liquidity crisis which ultimately may led to poor image and reputation of banks. Thus, it is necessary to banks to hold adequate but proper amount in cash vault to fulfil the requirements of banks' customers. In this particular study, cash reserve ratio is a proxy for liquidity measure whereas return on assets is major proxy for financial performance or profitability in development banks.

The banking sector plays a crucial role in the economic development of any country, and the profitability of banks is often influenced by various internal and external factors. Among these factors, liquidity stands out as a critical determinant of bank profitability. Liquidity, which refers to a bank's ability to meet its short-term obligations without incurring significant losses, is essential for maintaining operational stability and supporting lending activities. However, an optimal level of liquidity must be maintained, as both excessive and insufficient liquidity can have detrimental effects on profitability. The global financial environment, including crises like the COVID-19 pandemic, has further emphasized the importance of liquidity management. For instance, Chandra et al. (2024) highlighted how liquidity risk, along with credit risk, negatively affected the profitability of banks during the pandemic, with liquidity risk being the most significant. Similarly, studies in other regions, such as Madonsa et al. (2024) in Indonesia, showed a positive relationship between liquidity and profitability, though excess liquidity could reduce returns. Olofin et al. (2024) found that liquidity risk had a negative impact on bank profitability, reducing income generation capacity. These global insights highlight the complexity of liquidity management and its varying effects on profitability across different banking systems. This research seeks to explore these dynamics within the context of Nepal's development banks, examining how liquidity, alongside other financial indicators like capital adequacy, non-performing loans, and credit deposit ratios, influences

profitability. Understanding these relationships will provide valuable insights for policymakers and bank managers in Nepal to opt

The capacity of a bank to guarantee the constant availability of funds to meet financial commitments or maturing obligations at a reasonable price is referred to as bank liquidity. Bank liquidity implies a bank having cash where they need it especially to fulfill the withdrawal needs of the clients (Wasiuzzaman & Tarmizi, 2010). The quantity of capital that is available for investment is referred to as liquidity in the financial industry. Today, the greater part of this capital is credit reserve. This is as a result of the large financial institutions' preference for borrowing money (Felix & Claudine, 2008). Productivity and liquidity are successful signs of the corporate wellbeing and execution of the business banks, yet all benefit situated adventures (Eljelly, 2004). These exhibition markers are vital to the investors and contributors who are significant publics of a bank.

Liquidity risk management is the responsibility of a financial institution. A bank should implement robust liquidity risk management to ensure that it maintains sufficient liquidity to withstand a variety of stress events, including those involving the loss or impairment of both unsecured and secured funding sources. This liquidity cushion should include unencumbered, high-quality liquid assets. Bosses ought to survey the sufficiency of both a bank's liquidity risk the executives and its liquidity position and ought to make a brief move in the event that a bank is lacking in one or the other region to safeguard contributors and to restrict likely harm to the monetary framework (Kumar & Yadav, 2013).

Internal and external factors can have an impact on development banks' performance (Kosmidou, 2008). These factors can be divided into macroeconomic and bank-specific (internal) variables. The inside factors are individual bank attributes which influence the bank's exhibition. The internal decisions made by management and the board have an impact on these factors. The banks' profitability is impacted by external factors, which are sector- or countrywide factors beyond the company's control. However, the focus of this study is on the connection between bank performance and customer satisfaction. Return on Asset, Return on Equity, and Net Interest Margin are the most common ratios used to assess a development bank's profitability (Murthy & Sree, 2003).

Thus, the primary JVB, Nepal Middle Easterner Bank Restricted was laid out in 2041 (1985) under the Business Bank Act 2031 (1974) and the Organizations Act 2021 (1965). So, structure, it is called NABIL Bank. Nepal entered another period of improvement

following the Source worthy political changes with the reclamation of parliamentary arrangement of government in view of multi-party a vote based system in 1991 A.D. As a significant system in asset preparation, majority rule chose government has given high need for unfamiliar speculation, confidential area support and financial advancement. In this setting, the liberal economic policy and attractive incentives offered by the government in Nepal encouraged foreign investment. The new constitution clearly reflected the significance of foreign investment. It is stated in the directive principles of the constitution that a strategy to attract foreign technology and capital will be implemented. The number of JVBs has risen rapidly since the liberalization and open economic policy that a democratically elected government implemented. In addition to JVBs, a number of additional financial institutions emerged in the nation.

It is evident that Nepal's banks are expanding at a satisfactory rate. Unquestionably, it isn't sufficient fulfillment in contrast with different nations. First, there aren't enough banks. Furthermore, the opposition isn't found in financial capabilities. Thirdly, only urban areas are seeing an increase in the number of banks. Rural areas do not have any joint investment banks or modern ones. Consequently, the provincial individuals are not getting banking administrations.

Liquidity concerns present two primary challenges for banks. Banks are answerable for overseeing liquidity creation and liquidity risk. Liquidity creation assists investors and organizations with remaining fluid, for organizations particularly when different types of funding become troublesome. Overseeing liquidity risk is to guarantee the banks own liquidity with the goal that the bank can keep on serving its capability (Vossenand & Ness, 2010). Despite adequate capital, many banks still struggled during the financial crisis's early "liquidity phase," which began in 2007, because they did not prudently manage their liquidity. The crisis demonstrated how crucial liquidity is to the efficient operation of financial markets and the banking industry. Preceding the emergency, resource markets were light and subsidizing was promptly accessible for minimal price.

It is said that liquidity risk kills banks. This chance can unfavorably influence both bank's income and the capital. Thusly, it turns into the first concern of a bank's administration to guarantee the accessibility of adequate assets to satisfy future needs of suppliers and borrowers, at sensible expenses. This assertion is supported by numerous instances of conventional bank failure, both in the past and in the present. For instance, in order to

maintain the financial system, central banks were required to provide unprecedented levels of liquidity support during the peak of the United States/U.S. subprime mortgage crisis in 2008 and 2009. A number of banks failed, were forced into mergers, or required resolution despite receiving such extensive support. A decrease in financing liquidity then, at that point, caused critical misery. The European Central Bank and the United States Federal Reserve injected billions of dollars' worth of overnight credit into the interbank market in response to the market's freezing. Additional liquidity support was required by some banks (Longworth, 2010; Bernanke, 2008).

Liquidity and liquidity risk are unquestionably a hotly debated and significant topic. Subsequently, banks and controllers are quick to keep a control on liquidity position of banks. However, efficiency comes from this fragility as well. Jewel and Rajan (2001) contend that the monetary intermediation structure is proficient in that it disciplines banks while doing their loaning capability. The danger of a run is a motivator for the bank to pick projects with exceptional yield. In a broader sense, this also suggests that the financial system's efficiency may not always require an "even more liquid" bank. Consequently, compelling liquidity risk the executives guarantees a bank's capacity to meet income commitments, which are questionable as they are impacted by outer occasions and other specialists' way of behaving and to keep their ideal benefit.

This study aims to examine the impact of liquidity on the profitability of development banks in Nepal, with a particular focus on key financial ratios such as the capital adequacy ratio (CAR), credit deposit ratio (CDR), non-performing loan (NPL) ratio, and cash reserve ratio (CRR). The research investigates the patterns and structures of these ratios to understand their influence on profitability, measured by return on equity (ROE) and return on assets (ROA). Additionally, the study explores the relationships between these variables and analyzes how they affect the profitability of development banks in Nepal. By doing so, it provides valuable insights into the dynamics of liquidity management and its role in shaping the financial performance of development banks, offering practical implications for policymakers and bank management in optimizing their liquidity strategies.

1.2 Problem Statement

Liquidity is a critical component of the banking industry, acting as its lifeblood, ensuring smooth day-to-day operations and the ability to meet customer demands. Banks and financial institutions (BFIs) are required to maintain adequate liquidity to comply with

central bank regulations and manage operational needs effectively. Insufficient liquidity can lead to significant operational challenges, including a loss of market opportunities, diminished goodwill, and potential regulatory penalties (Kumar & Yadav, 2013; Madonsa et al. (2024)). Therefore, it is essential for banks to strike a balance in liquidity management to not only avoid crises but also to seize market opportunities and enhance their reputation.

The performance of development banks is influenced by both internal and external factors. Internal factors, such as management decisions, capital adequacy ratio (CAR), credit deposit ratio (CDR), non-performing loan (NPL) ratio, and liquidity ratios, are crucial determinants of a bank's financial health (Kosmidou, 2008; Olofin et al. (2024)). External macroeconomic factors, however, can impact the broader banking industry. According to Chandra et al. (2024), the management of liquidity risk, in particular, plays a significant role in maintaining profitability, especially in challenging periods like the COVID-19 pandemic.

Profitability is a key indicator of a bank’s efficiency and its ability to generate returns for investors. Liquidity, while necessary for smooth operations, can negatively affect profitability if it is excessive, as idle cash in the vaults becomes unproductive (Felix & Claudine, 2008). The Return on Assets (ROA) and Return on Equity (ROE) are widely used indicators to assess profitability. ROA measures how effectively a bank utilizes its assets to generate earnings, while ROE indicates how efficiently it uses shareholders' equity to generate profit (Murthy & Sree, 2003).

This study examineS the pattern and structure of key financial ratios—capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio, and profitability (ROE and ROA). Specifically, the study aims to investigate the relationships between these variables and analyze their impact on the profitability of development banks in Nepal. By addressing these questions, the research aims to provide insights into how liquidity management and other financial ratios contribute to the performance and profitability of development banks in Nepal.

i) What is the pattern and structure of capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio and profitability (ROE and ROA)?

ii) Is there relationship between capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio on profitability (ROE and ROA)?

iii) What is the impact of capital adequacy ratio, credit deposit ratio, non-performing loan ratio and liquidity ratio on profitability?

1.3 Objectives of the Study

The major objective of the research is to examine the impact of liquidity on profitability of development banks in Nepal. The specific objectives of research are as follows:

i) To analyze the pattern and structure of capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio and profitability (ROE and ROA).

ii) To examine the relationship between capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio on profitability (ROE and ROA).

iii) To investigate the impact of capital adequacy ratio, credit deposit ratio, non-performing loan ratio and liquidity ratio on profitability.

1.4 Research Hypothesis

A hypothesis is a question which has been reworded into a form that can be tested and scientifically proved (Gangaram, 2019). Hypotheses are formulated as possible answer for the research question. The proposed research tentative assumptions will be as under:

$H_1$1: There is significant impact of capital adequacy ratio on return on equity.
$H_1$2: There is significant impact of liquidity (cash reserve ratio) on return on equity.
$H_1$3: There is significant impact of credit deposit ratio on return on equity.
$H_1$4: There is significant impact of non-performing loan ratio on return on equity.
$H_1$5: There is significant impact of capital adequacy ratio on return on assets.
$H_1$6: There is significant impact of liquidity (cash reserve ratio) on return on assets.
$H_1$7: There is significant impact of credit deposit ratio on return on assets.
$H_1$8: There is significant impact of non-performing loan ratio on return on assets.

1.5 Rationale of the Study

The findings of this study hold significant importance in facilitating informed decision-making regarding the management of liquidity crises. This knowledge is crucial for achieving higher profitability and fostering the growth of shareholders' wealth. Additionally, these findings prove beneficial for researchers currently engaged in literature reviews within this domain. The key insights derived from this study play a pivotal role in guiding strategic decisions, with a focus on enhancing the overall health and prosperity of the sampled banks. Managing both profitability and liquidity emerges as a central

responsibility for organizational management, exerting a profound impact on operational success and sustainability.

Liquidity, which Sources a firm's ability to meet short-term obligations, holds a crucial position in ensuring the smooth functioning of a business entity. The study of liquidity is deemed highly significant by both internal and external analysts due to its close correlation with day-to-day business operations (Bhunia, 2010). Understanding liquidity becomes paramount as it signifies a financial firm's adeptness in maintaining a delicate balance between inflows and outflows over time (Vento & La Ganga, 2009).

1.6 Limitations of the Study

The following are the limitations of the study as every study is bounded with some limitations.

i) All 17 Nepalese development banks are considered as the total population, out of them 10 development banks have been selected as on the basis of highest paid-up capital.
ii) The last 10 years published data have been incorporated in this study from fiscal year 2013/14 to 2022/23 (10 years').
iii) This study is only focused on liquidity and profitability and related matters.
iv) Limited tools and techniques have been employed in order to get major findings and conclusion for this study.
v) The findings may not be applicable to international context development banks.

CHAPTER-II

LITERATURE REVIEW

The literature review section includes theoretical review, conceptual review, empirical review and research gap.

2.1 Theoretical Review

2.1.1 Theories of Banks' Profitability

The development banks are an essential part of the economy and financial systems. Business banks have contributed to a great extent in the monetary improvement of the economy of the locale. The distribution of funds to organizations and individuals in need is the responsibility of banks. They store the excess funds of organizations and individuals in a bank account. As a result, they are in charge of raising funds. Capital allocation, firm expansion, industry economic growth, and economic growth are all influenced by the banks' financial performance. The development banks as well as the macroeconomic level are impacted by the banks' profitability. The banks' profits are a reflection of their financial performance in the current environment. If the profitability index of development banks is maintained, banks will remain stable and generate substantial profits (Goddard et al., 2004). Subsequently, productivity turns into the significant piece of the exhibition of the banks which influences numerous areas. As a result, a lot of academics, bank managers, and financial markets have been paying attention to the factors that affect how banks perform in the financial sector. Between 1970 and 1980, researchers began investigating the banks' performance. They used efficient structure theory and market power theory, respectively (Athanasoglou et al., 2006).

Balanced Portfolio Theory

The balanced portfolio theory an additional theory is helpful in determining bank profits. Additionally, it has been utilized in the study of banks' profitability (Nzongang & Atemnkeng, 2006). The presentation of the banks is impacted by the market design of the business expressed by market power hypothesis which was given by Tregenna (2009). The two distinct approaches of market power theory are the SCP theorem and the RMP theorem. SCP approach expresses that banks in high fixation market can possibly bring benefits than firms up in low focus market as banks get the opportunity to get stores at lower financing costs and apportion credits at higher loan fees because of the presence of monopolistic

climate (Tregenna, 2009). The RMP approach expresses that benefits got by the banks are impacted by their portions in market. According to Tregenna (2009), this method assumes that banks with differentiated products can set prices and enjoy greater market power.

Efficiency Theory

According to another theory, the efficiency theory, banks are more profitable because they are more efficient than other businesses. Scale efficiency hypothesis and X efficiency are the names of the two distinct approaches that this theory employs. X productivity expresses that proficient firms have lower cost subsequently; they generate more revenue than others. Scale efficiency, on the other hand, emphasizes large-scale production and disregards management and production technology differences. The economies of scale that large businesses enjoy result in low product costs per unit and high profits. As a result, they have a large share of the market, which results in greater profits (Athanasoglou et al., 2006). According to the balanced portfolio theory (Nzongang & Atemnkeng, 2006), decisions regarding the policy have an impact on the optimal presence of each asset in the shareholder's investment. This theory also plays a crucial role in the study of banks' performance. These choices are impacted by various factors, for example, pace of return, size of the portfolio and dangers related with the holding of every resource. High benefits can be accomplished by conceivable arrangement of liabilities and resources which are perceived by the executives and costs brought about by banks. Signaling, the balance sheet ratio, bankruptcy costs, and the risk-return trade-off all have an impact on the banks' performance. Subsequently, value to resource proportion likewise plays a significant capability in deciding the exhibition of the banks.

Modigliani and Mill operator (1958) hypothesis expresses that capital design of the bank isn't impacted by the market worth of the bank. The financing theory holds that a high level of debt and a low equity-to-asset ratio lead to high risk and high rates of return. The risk-return trade-off theory is also explained by this (Van Ommeren, 2011). A few researchers have likewise made sense of that higher benefits can be gotten by high value to resource proportion. As per Berger, these clarifications are result of utilization of flagging and chapter 11 costs theory. According to the signaling hypothesis (Berger, 1995), a high equity ratio causes the bank's market value to rise. However, according to the bankruptcy cost hypothesis, banks hold a large amount of equity in order to avoid financial debt (Berger, 1995).

2.1.2 Theories of Liquidity

The Real Bills Doctrine

The real bills doctrine, also known as the commercial loan theory, emphasizes that business banks should only extend short-term self-liquidating productive loans to businesses. These loans are designed to finance the production and movement of goods through stages of production, storage, transportation, and distribution, ensuring liquidity upon the sale of goods. For instance, a loan provided to finance inventory is expected to self-liquidate as the proceeds from inventory sales repay the loan. This theory advocates that central banks should only lend to banks against such short-term loans, thereby maintaining appropriate liquidity for individual banks and the economy as a whole. By rediscounting these loans, the central bank adjusts the supply of reserves based on business activity. The volume of rediscounting bills and overall bank reserves increase during business expansions and decrease during economic contractions, ensuring a balanced credit and money supply (Moulton, 1918).

The Shift-Ability Theory

H.G. Moulton's shift-ability theory argues that banks should maintain substantial assets that can be quickly transferred to other banks without significant loss to ensure liquidity during financial crises. According to this theory, assets such as short-term investments, treasury bills, and bills of exchange are ideal, as they can be sold or shifted to meet liquidity needs. In times of systemic crises, the central bank acts as the lender of last resort, accepting transferable assets from banks. This approach has influenced modern banking practices, as banks increasingly accept sound assets like shares and debentures of large companies alongside treasury bills and commercial papers as liquid assets. This has also encouraged term lending by banks, promoting flexibility and resilience in financial systems (Moulton, 1918).

The Anticipated Income Theory

Developed by H.V. Prochanow in 1944, the anticipated income theory addresses term loans extended by banks. This theory emphasizes that the borrower’s anticipated future income is the primary source of loan repayment, regardless of the borrower's business type or nature. Term loans, typically lasting between one and five years, are provided against the hypothecation of assets such as machinery, inventory, or fixed property. Banks assess both the borrower’s expected income and collateral while imposing restrictions on financial

activities to ensure repayment. These loans are repaid in installments from future income rather than as a lump sum, making them a structured approach to long-term financing (Prochanow, 1944).

The Liabilities Management Theory

Emerging in the 1960s, the liabilities management theory posits that banks do not need to maintain excessive liquid assets or focus solely on self-liquidating loans, as they can acquire reserve funds from the money market. Banks create liabilities to secure reserves through various means, including issuing time certificates of deposit (TCDs), borrowing from other banks, raising capital, borrowing from the central bank, and reinvesting profits. TCDs, often negotiable in the money market, are a significant source of liquidity, but their reliability depends on market conditions and interest rate structures. Borrowing from other banks provides short-term liquidity but is feasible only under normal economic conditions. Borrowing from the central bank is another option, albeit costlier, as it involves rediscounting bills. Banks may also raise capital by issuing shares or debentures, although the attractiveness of this option depends on competitive interest and dividend rates. Finally, reinvesting profits offers an internal liquidity source, favoring larger banks with higher profitability and stable dividend policies (Johnson, 1968).

2.2 Conceptual Review

In this section of study the concept about key factor such as liquidity and profitability of banks have been elaborated. It is tried to present the core and major aspects of liquidity and profitability of development banks.

2.2.1 Concept of Liquidity

Liquidity is a fundamental concept in financial management, yet its definition and interpretation vary across contexts. Liquidity is often categorized into two primary approaches: asset liquidity, which examines the characteristics of assets, and market liquidity, which assesses the availability of assets for trade without significantly impacting their value. Additionally, liquidity risk, arising from the inability to meet obligations due to insufficient cash flow, is integral to this concept. According to Bhandari (2003), liquidity is the relationship between readily available cash resources and the risk of payment obligations. This is critical as it determines an entity's ability to fulfill commitments effectively. Liquidity ratios provide a quick assessment of this capability by comparing cash and other liquid assets to current liabilities. However, maintaining excessive or

insufficient liquidity can lead to adverse consequences, such as financial inefficiency or a loss of creditors' trust (Panday, 2000).

For financial institutions, particularly banks, liquidity is essential to sustaining public confidence. Depositors trust banks to fulfill their obligations promptly, and any delay in repayment could lead to a crisis of confidence. A lack of liquidity is often the first sign of financial distress in a bank, leading to deposit outflows and a need to liquidate assets at unfavorable prices. This can result in a vicious cycle of reduced earnings and an inability to secure funds from other banks or investors without offering higher interest rates or additional collateral. Singh (2005) highlights the importance of liquidity management, emphasizing that banks should prioritize investments in high-quality, government-backed securities due to their stability and marketability. Failure to maintain adequate liquidity can undermine a bank's solvency, even if it remains technically solvent, leading to its potential closure.

Effective liquidity management involves strategic investments and maintaining a balance between liquid assets and operational needs. Government securities and the shares and debentures of reputed corporations are preferred due to their high liquidity. Banks are encouraged to invest in such instruments to ensure they can meet obligations without significant value loss. Moreover, a firm's liquidity position is deemed satisfactory when it can meet its short-term liabilities, typically within a year, using its liquid assets. This is evident through liquidity ratios, which are crucial for credit analysis by banks and other providers of short-term loans. Ensuring an optimal liquidity position fosters financial stability and enhances an organization's reputation among creditors and investors (Singh, 2005).

2.2.2 Importance of Liquidity

Liquidity is indispensable for the functioning of banks, as it ensures their ability to meet obligations and sustain trust among stakeholders. The Nepal Rastra Bank (NRB) periodically revises the legal requirements for liquidity, emphasizing its significance. Development banks and financial institutions are required to maintain cash reserves in various funds as stipulated by NRB regulations, which are periodically updated to align with the economic environment. Failure to comply with these liquidity requirements results in fines, demonstrating the strict enforcement of these provisions. Singh (2005) highlights

that banks must hold liquid assets proportional to their deposit liabilities, as mandated by regulatory authorities, to mitigate risks and maintain operational stability.

Maintaining liquidity is essential for banks to fulfill several key functions. Liquidity enables the payment of deposits, including current, savings, fixed, and call accounts, and supports daily administrative operations (Bhandari, 2003). It ensures compliance with the statutory liquidity ratio and facilitates the advancement of loans. Additionally, liquidity is necessary for banks to pay dividends, withstand economic fluctuations, and foster public trust. Panday (2000) emphasizes that sufficient liquidity is crucial for maintaining healthy competition among banks and upholding public confidence, which forms the foundation of banking operations. The ability to preserve liquidity safeguards the stability of financial institutions and their role in the economy.

2.2.3 Concept of Profitability

Profitability refers to an investment's capacity to generate a return on investment and is integral to assessing a business's financial health. Profitability is derived from the combination of "profit" and "ability," where profit is the surplus obtained after deducting total costs from sales revenue, and ability refers to the organization's capacity to earn. This capacity, often termed earning power or operating performance, underscores an organization's operational efficiency. According to Pandey (2005), the primary objective of any business is to achieve a satisfactory return on investments while maintaining a sound financial position. The level of return depends on various factors, including the nature of business risks. A consistent failure to earn profits can erode the invested capital, potentially leading to the business's cessation over time.

Profitability serves as an indicator of a company’s financial stability and its ability to generate income. Its analysis plays a pivotal role in financial statement interpretation across developed and developing nations alike. External stakeholders such as bondholders, shareholders, investors, and governmental agencies rely on profitability metrics to evaluate a firm's economic well-being (Bhandari, 2003). Tools such as common-size statements facilitate profitability analysis, enabling the study of financial positions and operating results across industries and timeframes. This analysis is crucial for setting profit-oriented goals that guide managers and employees, ultimately ensuring sustained growth and competitive advantage in the marketplace.

2.2.4 Importance of Profitability

Bank profitability plays a vital role in ensuring financial stability, serving as the first line of defense against potential losses from credit weaknesses. Retained earnings, as a significant source of capital, enable banks to build substantial buffers, ensuring their ability to provide financial services even amid adverse economic conditions (Claessens et al., 2018). These buffers smooth the effects of negative economic shocks on the broader economy rather than amplifying them. Profitability ratios, a set of quantitative measures, help assess a company's ability to generate revenue relative to costs, assets, or equity during a specified period. These ratios are indispensable for stakeholders, including investors, creditors, and financial institutions, as they evaluate financial performance and the organization's annual productivity (Pandey, 2005). Ratios like the gross profit margin offer insights into cost management effectiveness and profitability per dollar spent compared to industry averages, highlighting areas for improvement in purchasing or production efficiency.

Key profitability ratios such as net profit margin, return on equity (ROE), and return on assets (ROA) provide critical insights into a company's overall performance and investment attractiveness. The net profit margin, crucial for managerial decision-making, helps identify inefficiencies in operating expenses or financing strategies, which may affect profitability (Bodie et al., 2014). ROE, which measures the percentage return for investors on their invested capital, reflects the organization's ability to attract investors through higher returns. Similarly, ROA gauges the earnings generated from each dollar of assets, helping management optimize asset utilization. Return on capital employed (ROCE) complements these metrics by measuring operational efficiency, ensuring resource optimization in comparison to industry standards (Ross et al., 2021). Together, these ratios enable comprehensive evaluation and strategic enhancement of a company’s financial health and competitive standing.

2.3 Empirical Review

Shahchera (2012) broke down the productivity of recorded banks involving lopsided board information for the period 2002-2009, and utilized the liquidity resource and liquidity resource square for assessing fluid resource and benefit relationship. The estimated relationship between bank profitability and liquid assets is also predictable. The square, business cycle, regulation, and interaction product of business cycle and regulation coefficients for the liquid assets ratio are all statistically significant. Profitability and liquid

asset holdings were found to have a non-linear relationship, according to the study. Bank profits are significantly influenced by the business cycle, according to this study. Significantly negative is the coefficient of regulation. Consequently, assuming controllers limit the requirements forced on banks, banks get benefit.

Sthapit and Maharjan (2012) discovered that Standard Chartered Bank Nepal (SCBN) and NABIL's overall liquidity ratio trend is not smoothing. In any case, variety in liquidity proportions as well as productivity in SCBN is lower than NABIL. The banks' ability to grow their profitability is hampered by the fluctuating trend of their liquidity ratios. Therefore, SCBN appears to be more stornger than NABIL in terms of liquidity and profitability. There is a massive impact of LFTDR, NRBTDR and CHTDR on productivity in SCBN in particular. This demonstrates that expansion in these liquidity proportions help the bank productivity as well as the other way around. Be that as it may, there are no huge impacts of the liquidity proportions on productivity in NABIL. This demonstrates that these liquidity ratios have no bearing on profitability. The insignificance of the hypotheses may be caused by the high degree of fluctuation in liquidity ratios. SCBN has a lower coefficient of variation (C.V.) than NABIL, despite having a similar overall average ROA. This implies that productivity position is more reliable in SCBN. Thusly, SCBN is better in productivity position with regards to low variety. As a result, SCBN's liquidity performance is superior to NABIL's.

Alshatti (2014) came to the conclusion that liquidity management has an impact on profitability in Jordanian development banks as measured by ROE or ROA. The researcher believes that this negative impact is due to the increased volume of untapped deposits at Jordanian development banks, and that the impact of the investment ratio and quick ratios on profitability is positive when measured by ROE, and that the impact of the capital ratio on profitability is positive when measured by ROA.

According to Pradhan and Shrestha (2016), the investment ratio has a positive correlation with return on equity. This demonstrates that higher the speculation proportion higher would be the profit from resources and return on value. Essentially, connection between capital proportion and ROA and ROE is viewed as sure demonstrating higher the capital proportion, higher would be ROA and ROE. However, it was discovered that there is a negative correlation between the liquidity ratio and return on equity, indicating that a bank

with greater liquidity would have a lower return on equity. In addition, the correlation between the quick ratio and return on equity is found to be negative.

Bwacha and Xi (2017) led an exploration work to inspect the connection between that liquidity and benefit was estimated utilizing the LDR, DAR and CDR while productivity ROE and ROA. It was discovered that LDR had no significant impact on profitability as measured by ROE or ROA. This is because banks would borrow more money from depositors at higher interest rates in order to meet their liquidity requirements and offset their marginal interest income from investments in assets like loans. As measured by ROE, DAR was found to have a significant impact on profitability, but not ROA. This is because banks were able to earn more interest from investing in assets than they could from paying interest to depositors. DAR may not have a significant impact on ROA because this higher interest income is almost insignificant when compared to the large amount of assets held by banks. It was discovered that CDR, like LDR, had no significant impact on profitability for its proxies ROE or ROA. This is for the explanation that the expansion in fluid resources in the result of the emergency implied an expansion in the open door cost of holding fluid resources and the exorbitant loan fees on stores neutralized the interest pay on fluid resources.

Shrestha (2018) observed that liquidity the executives and benefit in business banks are two touchy issues in the activities of business banks and of which data on them are truly accumulated. The main pressing issue of his review was to accommodate the clashing prerequisites of bank liquidity and bank productivity emerging from the clashing cravings of the two significant suppliers of the bank assets to be specific the investors and the contributors. The investors want most extreme productivity as a profit from their capital, while the contributors decide on a greatest liquidity as an assurance for security and capacity to pay their cash on request. The study's authors came to the conclusion that illiquidity and excess liquidity are both "financial diseases" that can easily undermine a bank's ability to achieve high profitability. High illiquidity can result from the pursuit of high profits without taking into account the level of liquidity, which in turn reduces customer patronage and loyalty. Accordingly, any bank that has the point of amplifying its benefit level should take on successful liquidity the board. Viable liquidity the board additionally requires sufficient liquidity level which will assist business saves money with assessing the extent of investor's subsidizes that will be requested at any period and orchestrate on the most proficient method to fulfill the need.

Muiruri (2017) concluded that Kenya's development banks' profitability and liquidity are positively correlated. The bank should not only concentrate on profitability but also ensure that management is efficient and impassive. The expansion of Kenyan development banks will benefit from this. In addition, banks shouldn't have too much liquidity, but they should also have other ways to keep liquidity, like borrowing overnight or discounting bills. To get a better return on investment, the excessive liquidity ought to be invested in short-term instruments.

Khan and Ali (2018) demonstrated through examination that liquidity has positive relationship with benefit, and significantly affects the productivity of business banks in Pakistan. The profitability also rises as the level of liquidity needed to determine a limit rises. There is no negative relationship between any of the variables. Each proportion of liquidity shows positive connection with every one of the proportions of liquidity. As a result, this study suggests that profitability is positively correlated with liquidity. As a result, it is suggested that banks hold onto a significant portion of their liquid assets in order to achieve a higher profit rate.

Charmler and co. (2018) discovered that bank profitability is influenced by liquidity. They uncovered that there is positive relationship between bank liquidity and productivity predictable with the review speculation. These outcome anyway ought to be deciphered with alert as past investigations have proposed that there is a breaking point to bank liquidity further develops productivity. This implies that despite the fact that bank liquidity further develops productivity, at some stage expansion in liquidity could be counterproductive and will diminish the productivity of banks. Their review suggests that banks should accept basic glance at their liquidity to work on their presentation regarding productivity. Their outcomes uncovered that factors, for example, net revenue edge, capital sufficiency proportion, the size of the banks and unfamiliar proprietorship have positive relationship with bank benefit. Their findings have a number of repercussions for the sector's regulators as well as managers and banks.

Mohanty and Mehrotra (2018) presumed that liquidity affects the benefit as estimated by ROA in light of banks having exorbitant liquidity as opposed to putting away the cash to produce benefit. However, regardless of the type or form of development banks in India, there is no statistically significant relationship between ROE and liquidity measures. This prompts the end that the business banks can zero in on expanding their benefit without

influencing their liquidity as well as the other way around. Nonetheless, this isn't ensured in light of the fact that the circumstance could change, particularly changes in the macroeconomic climate that are outside the control of the business banks.

Gopali (2019) conducted research to measure development banks' liquidity and profitability. The researcher discovered that the solvency position of NABIL bank is higher than that of Sanima bank. The review results uncovered that liquidity position of the two banks were sound in the event of activated the assets of investors productively into benefit creating projects likewise, Sanima bank doesn't assembled and NABIL has been impassively in giving more pace of return.

Oduro et al. (2019) studied on impact of credit risk on corporate financial performance: Evidence from listed banks on the Ghana stock exchange. A bank’s financial performance and survival can be threatened when there is an increased exposure to credit risk. On this basis, this study seeks to identify the factors that determine the level of bank credit risk and further estimates the impacts of bank credit risk on corporate financial performance using financial data from banks on the Ghana Stock Exchange over a 15-year period from 2003 to 2017. Using the method of 2SLS, it was observed variables such as capital adequacy, operating efficiency, profitability, and net interest margin are inversely related to credit risk. Conversely, bank size and financing gap tend to relate positively with credit risk. In addition, annualized changes in inflation tend to positively affect credit risk. Again, it was observed that, increase in bank credit risk negatively affects corporate financial performance which is consistent with Basel accord. Thus, for banks to survive in their industry, critical attention needs to be paid to management of its credit risk exposure.

Butola (2022) explored the relationship between credit risk, liquidity risk, and bank profitability in Middle East and North Africa (MENA) countries. We selected data related to a sample of conventional banks observed in the period 2004-2012 and applied the empirically unrelated regression method (SUR). Overall results suggest that banks in MENA have negative profitability and are highly sensitive to increases in credit and/or liquidity risk. This adverse impact was confirmed either through the separate impacts of these two risks or through the interaction impacts. Furthermore, the results show that bank profitability significantly reduces credit and liquidity risks. We also found that law and order as an institutional quality enhances MENA bank profitability and reduces both credit and liquidity risk.

Sharifi et al. (2021) examined the impact of bank size, profitability and ownership on excess credit risk management (CRM) capital held by Indian banks. The model is estimated by panel regression using data on 34 Indian banks from 2009 to 2021. This result suggests that the size of Indian banks is related to the excess capital they hold to manage credit risk. A positive relationship means that large banks have higher levels of excess capital, above the minimum required by the Basel criteria. The study is of increasing importance against the backdrop of significant changes in the institutional and regulatory framework of the Indian financial system.

Anwer et al. (2023) revealed there is a high danger of insolvency and financial troubles for banks because of this method of loan origination. As shown by high levels of nonperforming loans, the KRG banking system's Development Bank Supervision Report found that most banks failed due to poor credit risk management. Due to the high level of non-performing loans, the profitability of the bank was damaged. The study developed five research hypotheses to measure the role of credit risk management in performance of development banks in Erbil. It was decided to use a quantitative approach to investigate the impact credit risk management has on the financial performance of development banks. 88 people from the Credit Risk Management departments of several development banks around the nation were selected as a convenience sample. These respondents included senior, intermediate, and practical level personnel. The study found that development banks with lower levels of nonperforming loans and capital adequacy ratios had higher returns on assets, indicating more impassive methods of credit risk management. Total loans divided by the loan loss reserve ratio is the amount set aside for losses. The quality of a loan portfolio degrades as the ratio rises. The study recommended to improve credit risk identification, measurement, monitoring and controlling at selected development banks in Erbil.

Akhtar et al. (2023) conducted an empirical study in Pakistan to investigate the impact of capital adequacy, liquidity, and profitability on the stability of development banks. Through quantitative analysis, they examined the relationships between these key financial indicators and the overall stability of the banking sector. Their findings shed light on the crucial role of these factors in ensuring the robustness of banks in a dynamic economic environment, offering valuable insights into the factors influencing the stability of development banks.

Chandra et al. (2024) examined how critical financial factors, including credit risk, liquidity risk, and bank capital, affected bank profitability during the COVID-19 pandemic. By employing regression analysis, the study found that liquidity and credit risks negatively influenced profitability, with liquidity risk exerting the most significant adverse effect. In contrast, adequate bank capital had a stabilizing effect, mitigating the negative impacts of liquidity risk. The authors emphasized the importance of effective liquidity management and capital buffers for banks to remain resilient in times of economic distress, suggesting that maintaining robust liquidity and capital levels is crucial for profitability during crises.

Madonsa et al. (2024) explored the relationship between liquidity and profitability in the Indonesian People's Bank (Persero) Tbk over a period spanning 2015 to 2023. Using empirical data and regression models, they found a positive and significant relationship between liquidity measures, such as the liquidity ratio and cash reserve ratio, and profitability indicators like return on assets (ROA) and return on equity (ROE). However, they also Sourced that excessive liquidity could result in diminishing returns. The study highlighted the importance of maintaining a balanced approach to liquidity management to optimize profitability and sustainability, particularly in periods of financial volatility.

Olofin et al. (2024) investigated the influence of liquidity risk on the profitability of listed deposit money banks in Nigeria. The authors utilized secondary data from 13 out of 16 listed banks between 2007 and 2014, employing a multiple regression model. The findings revealed a significant negative relationship between liquidity risk and profitability, as measured by net interest margin (NIM). The study underlined the critical role of liquidity risk management in ensuring the stability and profitability of banks in Nigeria, emphasizing the need for effective policies to mitigate the impact of liquidity risk on banks' financial performance.

Table 1

Summary of Empirical Reviews

Author(s)	Title	Objectives	Methodology	Findings
Mashhad (2012)	Correlation Between Profitability and Liquidity in Kenyan Banks	To investigate relationship between profitability and liquidity in Kenyan banks.	Conducted statistical analysis on financial data to assess correlations.	Found a positive correlation between profitability and liquidity. Efficient management practices supported bank growth.

Shahchera (2012)	Liquidity-Asset Impact on Jordanian Bank Profitability	To examine the relationship between liquidity assets and profitability.	Applied a non-linear regression model using liquidity measures.	Identified a non-linear relationship; excessive liquidity focus was counterproductive.
Sthapit & Maharjan (2012)	Liquidity and Profitability Trends in SCBN and NABIL	To assess liquidity and profitability trends in SCBN and NABIL.	Conducted comparative analysis of liquidity ratios over time.	Found SCBN had less variability, ensuring consistent profitability.
Alshatti (2014)	Impact of Liquidity Management on Jordanian Development Banks	To investigate the impact of liquidity management on profitability.	Analyzed ROA and ROE in relation to liquidity management.	Found liquidity mismanagement negatively impacted profitability due to untapped deposits.
Pradhan & Shrestha (2016)	Liquidity and Profitability in Nepalese Banks	To find the impact of liquidity ratios on profitability in Nepalese banks.	Performed regression analysis using investment, capital, and liquidity ratios.	Identified positive correlations for investment and capital ratios but negative for liquidity.
Bwacha & Xi (2017)	Liquidity and Profitability in the Banking Sector	To examine the influence of liquidity measures on profitability.	Utilized regression analysis on LDR, DAR, and CDR.	Found DAR positively influenced ROE; LDR and CDR showed no significant impact.
Shrestha (2018)	Balancing Liquidity and Profitability in Development Banks	To explore challenges in maintaining liquidity and profitability balance.	Conducted qualitative analysis based on industry insights.	Concluded both excess and inadequate liquidity harmed profitability.
Muiruri (2017)	Correlation Between Profitability and Liquidity in Kenyan Banks	To assess the correlation between profitability and liquidity.	Performed statistical analysis on financial data.	Found a positive correlation and Sourced efficient management supports growth.
Khan & Ali (2018)	Impact of Liquidity on Profitability in Pakistani Banks	To ascertain the relationship between liquidity and profitability in Pakistani banks.	Conducted regression analysis using liquidity ratios.	Found liquidity positively impacted profitability, suggesting liquid asset retention for higher returns.

Charmler et al. (2018)	Liquidity and Profitability Nexus in Development Banks	To operate the correlation between liquidity and profitability.	Conducted quantitative analysis on development bank data.	Found a positive relationship between liquidity and profitability.
Mohanty & Mehrotra (2018)	Liquidity Impact on Profitability of Banks	Investigated the impact of liquidity on profitability.	Performed statistical analysis on liquidity and profitability indicators.	Found excessive liquidity negatively impacted profitability; no significant relationship with ROE.
Gopali (2019)	Development Banks' Liquidity and Profitability	To measure liquidity and profitability in NABIL and Sanima banks.	Analyzed financial data to assess solvency and liquidity positions.	Found NABIL had a higher solvency position than Sanima.
Oduro et al. (2019)	Impact of Credit Risk on Corporate Financial Performance in Ghana	To identify factors influencing credit risk and its impact on financial performance.	Used 2SLS method with 15 years of financial data from Ghanaian banks.	Found credit risk negatively affected financial performance through capital adequacy and operating efficiency.
Butola (2022)	Credit and Liquidity Risk Impact on Bank Profitability in MENA	To explore credit and liquidity risks' impact on profitability.	Applied SUR method on data from MENA banks.	Found negative impacts of credit and liquidity risks on profitability.
Sharifi et al. (2021)	Bank Size, Profitability, and Excess Credit Risk Capital in India	To investigate the effect of bank size on credit risk management capital.	Conducted panel regression analysis using data from 34 banks.	Found a positive link between bank size and credit risk management capital.
Anwer et al. (2023)	Role of Credit Risk Management in Development Banks' Performance	To examine the role of credit risk management in preventing financial troubles.	Conducted quantitative analysis on nonperforming loans and capital adequacy.	Found banks with lower nonperforming loans and higher capital adequacy achieved better performance.
Akhtar et al. (2023)	Stability of Development Banks: Impact of Capital, Liquidity, Profitability	To ascertain how capital, liquidity, and profitability influence bank stability.	Conducted quantitative analysis on relationships among key stability factors.	Found capital adequacy, liquidity, and profitability critical to stability.

Chandra et al. (2024)	The Effect of Credit Risk, Liquidity Risk, and Bank Capital on Bank Profitability During the COVID-19	To analyze how liquidity risk, credit risk, and bank capital affected profitability during COVID-19.	Regression analysis on bank data	Liquidity and credit risks negatively affected profitability, with liquidity risk being most significant. Bank capital helped stabilize profitability.
Madonsa et al. (2024)	The Influence of Liquidity on Profitability in Indonesian People's Bank (Persero) Tbk for the Period 2015-2023	To explored the relationship between liquidity and profitability at Indonesian People's Bank from 2015-2023.	Regression analysis with liquidity and profitability data	Found a positive relationship between liquidity and profitability, though excessive liquidity may reduce returns.
Olofin et al. (2024)	The Impact of Liquidity Risk on Profitability of Listed Deposit Money Banks in Nigeria	To examine liquidity risk's impact on Nigerian banks' profitability.	Multiple regression on data from 13 banks (2007-2014)	Showed a negative impact of liquidity risk on profitability, reducing banks' income generation.

2.4 Research Gap

Khatri (2020) utilized the Hausman test followed by the fixed effects approach to analyze the impact of financial variables, including asset quality (AQ), return on equity (ROE), and the cash-deposit ratio (CDR), on financial performance. The study found insightful results, but there is a noticeable gap when it comes to considering a broader set of liquidity and financial performance indicators. While Khatri's analysis focused on a limited set of variables, this research extends the scope by incorporating additional financial ratios such as the cash reserve ratio (CRR), capital adequacy ratio (CAR), non-performing loan ratio (NPLR), alongside ROE and return on assets (ROA). This broader approach aims to provide a more comprehensive understanding of liquidity's effect on financial performance, particularly in the context of Nepalese development banks, where limited studies have been conducted.

Previous studies, such as those by Shahchera (2012) and Khan & Ali (2018), suggested that the relationship between liquidity and financial performance is often nonlinear. They emphasized that liquidity's impact is not always straightforward and could vary depending

on specific bank characteristics, market conditions, or the methodological approach used. This presents a gap in the literature, as many studies on Nepalese banks, like those by Sthapit & Maharjan (2012) and Pradhan & Shrestha (2016), primarily focus on the assumption of a linear relationship between liquidity and profitability. However, the financial sector is undergoing significant changes due to evolving market dynamics, making it important to revisit this issue using advanced statistical techniques to assess the potential nonlinearities in this relationship, especially with up-to-date data.

In contrast to findings in other regions, the Nepalese context tends to suggest a positive association between liquidity and profitability (Shrestha, 2018; Charmler et al., 2018). These findings imply that liquidity management strategies, such as maintaining high cash reserves, may benefit development banks by ensuring stability and allowing for better responsiveness to market opportunities. However, this positive relationship remains somewhat underexplored in terms of how liquidity affects profitability under different macroeconomic conditions and banking practices. There remains a significant research gap in understanding whether this positive relationship holds consistently or varies under different time periods, market conditions, or types of liquidity measures, such as CRR or CAR.

While the research by Gopali (2019) and Mohanty & Mehrotra (2018) emphasized the importance of liquidity in ensuring financial stability, they did not address the dynamic interplay between liquidity measures and financial performance in the rapidly changing banking environment of Nepal. The need for further research in Nepal arises due to significant transformations in market conditions, customer preferences, regulatory frameworks, and the overall economic environment. These changes suggest that prior research might not fully capture the evolving relationship between liquidity and profitability, indicating a gap in understanding how liquidity management strategies affect banks in the modern, competitive, and volatile banking landscape.

Moreover, the limited number of studies conducted in the Nepalese context has contributed to a significant gap in research concerning the long-term impacts of liquidity on bank profitability. While studies such as those by Oduro et al. (2019) and Sharifi et al. (2021) utilized longitudinal datasets, there is still a dearth of similar studies focused on Nepalese banks, particularly development banks. This research seeks to fill this gap by using a more comprehensive dataset, employing advanced econometric models, and considering a

broader range of variables. By doing so, it aims to offer more accurate insights into how liquidity management impacts financial performance in the current context of Nepal's banking sector, which continues to evolve amidst shifting market conditions and regulatory changes.

CHAPTER-III

RESEARCH METHODOLOGY

The entire process based on philosophies, principles and mechanism of research, by which is attempt to solve problems or search the answer to question are collectively known as the Research Methodology. It includes different dependent and independent variables, types of research design, population and sample, sources of data, data collection and processing procedure, data analysis tools and techniques (statistical and financial tools, software package to be used in the research).

3.1 Research Design

The study incorporates descriptive and causal comparative research designs. The descriptive research design is used to analyze the pattern and structure of key financial ratios, including capital adequacy ratio, credit deposit ratio, non-performing loan ratio, liquidity (CRR) ratio, and profitability (ROE and ROA). This design is particularly useful for providing a detailed and accurate picture of the existing situation without manipulating the variables. It allows the study to describe and summarize the data on the current status of these financial indicators in the development banks of Nepal, as stipulated in the first research objective. Descriptive research helps identify the trends, patterns, and structures in the data, making it essential for understanding the financial health of development banks in Nepal.

The causal-comparative research design is employed to investigate the relationships and impacts between the key financial ratios and profitability. This design enables the study to explore cause-and-effect relationships by comparing how variations in capital adequacy ratio, credit deposit ratio, non-performing loan ratio, and liquidity ratios (CRR) influence profitability as measured by ROA and ROE. This approach aligns with the second and third research objectives, which aim to examine the relationship between these financial ratios and profitability, and assess the impact of these variables on the performance of development banks in Nepal. The causal-comparative design is justified as it helps in understanding the impact of independent variables (liquidity, capital adequacy, credit deposit ratio, and non-performing loans) on the dependent variables (profitability indicators like ROA and ROE), providing valuable insights into how these financial metrics influence the profitability of development banks.

3.2 Population, Sample and Sampling Design

The sample banks for this study are selected using the purposive sampling technique, which is a non-random approach where specific entities are chosen based on predefined criteria relevant to the research objectives. In this case, out of the 17 development banks currently operating in Nepal, as reported by Nepal Rastra Bank in mid-January 2024, the top ten banks with the highest market capitalization were selected as the sample. Market capitalization, which is determined by multiplying the share price by the total number of outstanding shares, serves as an important indicator of a bank's financial size, stability, and overall market influence. By selecting the banks with the highest market capitalization, the study focuses on the most prominent and influential players in Nepal's development banking sector. This approach ensures that the sample reflects institutions with significant financial resources and market presence, which are likely to provide more reliable and comprehensive data.

Table 2

Specification of Sample and Sample Period

SN	Name of Development banks	Abb.	Market Capitalization (Rs. Arab)	Sample Period	N
1	Muktinath Bikas Bank Limited	MNBBL	33.15	2013/14-2022/23	10
2	Garima Bikas Bank Limited	GBBL	21.18	2013/14-2022/23	10
3	Jyoti Bikas Bank Limited	JBBL	19.49	2013/14-2022/23	10
4	Mahalaxmi Bikas Bank Limited	MLBL	19.22	2013/14-2022/23	10
5	Kamana Sewa Bikas Bank Limited	KSBBL	17.29	2013/14-2022/23	10
6	Shine Resunga Bikas Bank Limited	SHINE	16.87	2013/14-2022/23	10
7	Lumbini Bikas Bank Limited	LBBL	16.80	2013/14-2022/23	10
8	Sangrila Development Bank Limited	SADBL	12.51	2013/14-2022/23	10
9	Excel Development Bank Limted	EDBL	7.58	2013/14-2022/23	10
10	Miteri Development Bank Limited	MDB	5.79	2013/14-2022/23	10
			Total No. of Observations		100

Thus, the study is based on hundred number of observations.

3.3 Sources of Data

The primary sources of secondary data for the proposed study include Nepal Rastra Bank, published theses, internet journals, and other libraries. The statistics were used for ten years, from the 2013/14 fiscal year to the 2022/23 fiscal year. The suggested study's examination of the literature is based on previous theses, textbooks, journals, etc. The required data and information have been gathered from authorities and pertinent institutions. Furthermore, data is gathered from several sources, including the Shankar Dev Campus, and the research department. The following are the main sources of information and data:

3.4 Data Collection and Processing Procedure

Raw information is referred to as data. It might be a sign, a symbol, a number, or some amorphous shape. The process of gathering data from pertinent sources is known as data collecting. Which ought to be precise, pertinent, and reliable? Instead than emphasizing qualitative data, the focus is on quantitative data.

3.5 Data Analysis Tools and Techniques

Excel (software) has been used in conjunction with a variety of financial and descriptive statistical tools and approaches to help achieve the research's goal. Data analysis is carried out in accordance with the existing data pattern. A basic analytical statistical technique like the percentile will be used in this study due to time and resource constraints. Financial analysis also makes use of some financial instruments, such as ratio analysis.

A) Statistical Tools

Under statistical tools, the following tools may use:

i) Descriptive Statistical Tools

The financial status trends of the sample banks may be ascertained with the use of descriptive statistical methods. Additionally, it examines the connections between factors and supports banks in making the right choices to achieve their objectives. The suggested thesis may make use of descriptive analytical methods like percentage, mean (arithmetic), variance, and standard deviation.

ii) Inferential Statistical Tools

Inferential analysis focuses on estimating or hypothesis testing by utilizing the sample alone to draw conclusions about the population, as contrast to data description, which focuses on characterizing the sample data. Formally speaking, this procedure is called inferential statistics. Inferential statistics may be divided into two main categories:

parametric and non-parametric. Only the parametric test has been used where necessary. Regression analysis and correlation analysis are applied under the parametric test.

The Multiple Regression Model,

$ROE = \beta_0+\beta_1 CAR +\beta_2 CRR +\beta_3 CDR+\beta_4 NPLR + \varepsilon$

$ROA = \beta_0+\beta_1 CAR +\beta_2 CRR +\beta_3 CDR+\beta_4 NPLR + \varepsilon$

Where,

β_0	=	Constant Value
$\beta_1, \beta_2, \beta_3, \beta_4$	=	Coefficient of Independent Variables
ROE	=	Return on Equity
ROA	=	Return on Assets
CAR	=	Capital Adequacy Ratio
CRR	=	Cash Reserve Ratio
CDR	=	Credit Deposit Ratio
NPLR	=	Non-performing Loan Ratio
ε	=	Error Terms

3.6 Data analysis

The gathered information was entered into an Excel spreadsheet and analyzed using SPSS version 25. Both descriptive and inferential analysis were used as part of the analytical methodology in this study. The data has been analyzed using the mean, minimum, maximum, and standard deviation under descriptive. The factors are included in a correlation matrix that is displayed in addition to descriptive statistics. Some of the independent variables have a high link with one another, as the correlation matrix demonstrates. Regression analysis has been used to determine how dependent and independent variables are related to one another.

B) Financial Tools

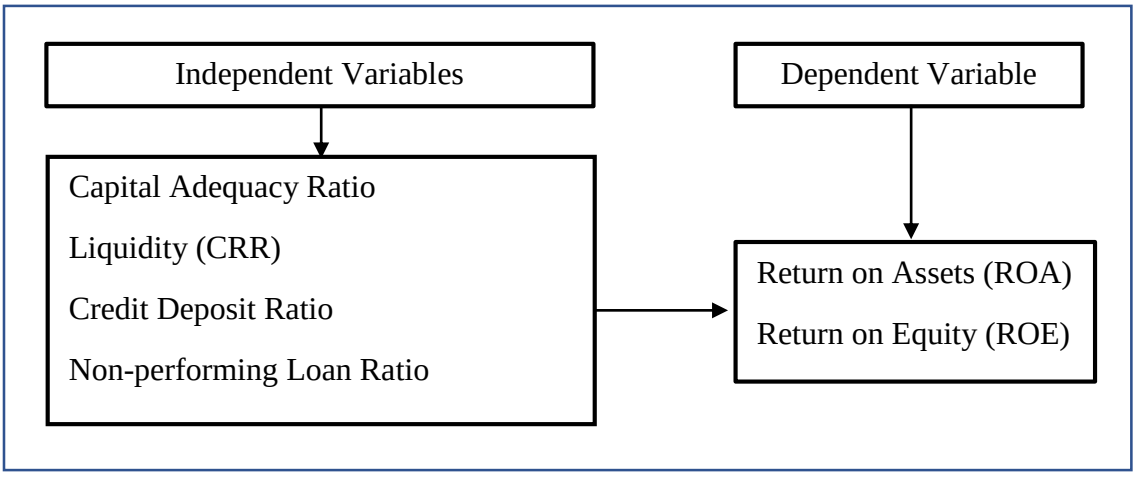
Under financial tools, ratio analysis is use to determine the information. The major ratios to be used in the proposed thesis are liquidity (cash reserve ratio), credit deposit ratio, non-performing loan ratio and capital adequacy ratio as predictors and return on equity as dependent variables.

Table 3

List of Undertaken Variables

Variables	Notion	Measure
Dependent variables		
Return on Equity	ROE	Total Net Profit/Total Shareholders' Equity
Return on Assets	ROA	Total Net Profit/Total Assets
Independent variables		
Liquidity Ratio	CRR	Reserve Requirement/ Total Deposits
Credit Deposit Ratio	CDR	Total Credit/Bank Deposit
Capital Adequacy Ratio	CAR	Sum of Supplementary and Core capital Ratio
Non-performing Loan Ratio	NPLR	Total non-performing loan/Total Loan

3.7 Research Framework



Source: Bwacha and Xi (2017) and Pradhan and Shrestha (2016)

Figure 1: Research Framework

The Figure 1 represent the theoretical framework has been developed on the basis of dependent variable i.e. return on equity and independent variables such as liquidity (cash reserve ratio), non-performing loan ratio, and credit deposit ratio and capital adequacy ratio. The whole dissertation revolves around these variables to find out the impact of liquidity on profitability of development banks.

3.8 Definitions of Variables

Capital Adequacy Ratio (CAR)

Capital adequacy was defined by Bonfim and Kim (2012) as the Tier 1 capital ratio, which is calculated by dividing core capital by total deposits. According to Ayele (2012), a bank's

capital adequacy is a gauge of its financial health based on its capacity to provide liquidity and bear operating expenses. Adequate capital also signifies the bank's capacity to take on new business. Banks and other financial institutions have financial flexibility based on their capital size. According to Ongore and Kasu (2013), the capital adequacy ratio demonstrates the bank's internal resilience to losses during a crisis.

Liquidity (CCR)

Only the most liquid current assets to current liabilities are included in this ratio. An increase in this ratio's value indicates that the firm has strong liquidity. According to Sinha (2012), this ratio does not include inventories or prepayments for costs that are difficult to convert into cash. Deposits from clients allow development banks to make investments in technology advancements that lower costs and boost operational efficiency, which in turn encourages more deposits from customers. This has a more direct impact on lowering poverty in the economy by lowering risk and vulnerability for disadvantaged groups and increasing the possibility for people and households to receive essential services like health and education (Shaw, 1973).

Credit Deposit Ratio (CDR)

The ratio of a bank's total deposits to total loans is called the credit-deposit ratio. In general, the ratio is stated as a percentage; if the ratio is less than one, the bank did not borrow money from outside sources in order to provide loans to its clients. The credit-deposit (CD) ratio fell steadily in 2020, from 75% in January to 71.3% on December 4. The impact of the pandemic was most noticeable in the early months of the COVID-19 outbreak when credit growth sharply decreased (NRB, 2020).

Non-Performing Loan Ratio (NPLR)

All development banks have been instructed by the NRB to set up loan loss provisions for questionable and bad loans. This ratio aids in credit control and reduces the amount of non-performing loans. One measure of bank efficiency is the non-performance loan ratio. The bank is more efficient the lower the ratio. A greater ratio, on the other hand, indicates that the bank is not being managed efficiently. According to international banking standards, a nonperforming loan percentage of up to 5% is acceptable. According to the current analysis, Century Bank Limited (0.1), Civil Bank Limited (0.2), and Janata Bank Limited (0.06) have the lowest non-performing loan ratios. The greatest ratio belongs to Nepal Bagaladesh Bank Limited (11.75), with Lumbini Bank Limited (5.13) coming in second. Rests of the

other banks have been maintaining the non-performance loan ratio within 5% (Kattel, 2014).

Return on Assets (ROA)

Return on Assets (ROA) is a financial metric that indicates a company's ability to generate profit in relation to its total assets. It serves as a measure of efficiency and impassiveness in utilizing these assets to produce earnings. In the context of credit risk, ROA can be seen as an important indicator that reflects the balance between risk and reward. The relationship between credit risk and ROA is often inversely related. When a company takes on higher credit risk, such as by extending credit to customers with a higher likelihood of defaulting on their payments, it may experience higher levels of non-performing loans and credit losses. These credit-related issues can negatively impact the company's profitability, resulting in a lower ROA. Conversely, a company that impassively manages credit risk by making prudent lending decisions and maintaining a high-quality loan portfolio is more likely to experience lower credit losses. This, in turn, can contribute to higher profitability and a higher ROA funds (Khrawish, 2011).

Return on Equity (ROE)

The ratio of net income after taxes to total equity capital is known as return on equity. A financial ratio called return on equity (ROE) measures a company's profit margin in relation to the total amount of invested or balance sheet shareholder equity. The return on equity (ROE) is what investors seek for after making an investment. It shows the rate of return that shareholders of the bank have received on their investments. The return on equity (ROE) measures how well a bank's management uses shareholder cash (Khrawish, 2011).

CHAPTER-IV
RESULTS AND DISCUSSION

The results of this study offer a detailed examination of the financial performance and risk characteristics of 10 development banks over a 10-year period (2013/14–2022/23). The descriptive analysis provides an initial understanding of the central tendencies and variability of key financial indicators, including Non-Performing Loan Ratio (NPLR), Credit Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), Return on Assets (ROA), and Return on Equity (ROE). By calculating the mean, standard deviation, and coefficient of variation for these variables, the analysis highlights the overall trends in performance, stability, and risk across the banks. These metrics reveal patterns of profitability, liquidity, and financial health, offering a foundation for further investigation into how these factors influence the banks' overall financial stability and risk exposure over time.

In addition to the descriptive analysis, the correlation analysis provides valuable insights into the relationships between profitability indicators (ROA and ROE) and other key financial variables. The results reveal the strength, direction, and statistical significance of the associations between ROA, ROE, and variables such as NPLR, CDR, CAR, and CRR. These correlations help to identify how these financial ratios interact with profitability, shedding light on potential drivers of performance. To further explore these relationships, the regression analysis investigates the impact of NPLR, CDR, CAR, and CRR on the profitability indicators, offering a deeper understanding of how liquidity, capital adequacy, and asset quality influence the banks' financial performance over the period of study. Together, these analyses provide a comprehensive overview of the factors shaping the financial outcomes of Nepalese development banks.

4.1 Descriptive Analysis

The descriptive analysis in this study has provided a comprehensive overview of the key financial variables across 10 development banks over a 10-year period (2013/14-2022/23). By calculating measures such as the mean, standard deviation, and coefficient of variation for variables including Non-Performing Loan Ratio (NPLR), Credit Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), Return on Assets (ROA), and Return on Equity (ROE), the analysis has highlighted the central tendencies, variability,

and relative stability of these indicators. This statistical approach helps in identifying patterns and trends, while also providing insight into the overall performance and risk characteristics of the banks. Furthermore, it sets the foundation for deeper inferential analysis by showing the distribution and fluctuations of these financial metrics over time.

4.1.1 Status of Capital Adequacy Ratio

Table 4

Status of Capital Adequacy Ratio

Year/CAR	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	11.23	13.79	18.43	15.80	13.76	14.87	13.28	13.89	11.39	15.77
2014/15	12.25	15.63	17.05	13.04	17.35	15.69	13.93	13.21	11.42	15.10
2015/16	12.38	16.53	16.76	12.67	14.25	15.45	13.83	12.71	11.80	14.87
2016/17	13.89	24.99	30.60	16.86	12.76	16.57	16.07	14.89	12.81	19.49
2017/18	14.20	18.84	19.25	18.10	21.58	14.04	17.18	19.02	19.23	27.69
2018/19	13.44	14.44	16.27	17.22	16.81	13.32	16.54	16.66	13.50	25.66
2019/20	13.23	13.87	15.08	13.41	14.00	15.61	14.20	13.62	13.67	22.67
2020/21	11.19	11.43	13.04	13.52	13.93	15.77	13.26	11.77	12.26	13.46
2021/22	11.80	13.48	12.74	11.65	12.13	14.36	11.72	11.59	12.19	12.72
2022/23	11.77	13.69	12.96	12.99	24.49	13.29	12.85	12.41	11.76	13.43
Mean	12.54	15.67	17.22	14.53	16.11	14.90	14.29	13.98	13.00	18.09
SD	1.09	3.84	5.23	2.25	4.05	1.11	1.75	2.33	2.33	5.47
CV	8.68	24.50	30.37	15.50	25.13	7.45	12.28	16.66	17.91	30.23

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

Table 4 presents the status of the Capital Adequacy Ratio (CAR) for 10 development banks in Nepal, spanning the fiscal years 2013/14 to 2022/23. The table provides the mean, standard deviation (SD), and coefficient of variation (CV) for each bank.

The mean CAR for these banks varies from 12.54% (MUK) to 18.09% (SIN), with SIN showing the highest average CAR among the banks. On the other hand, MUK has the lowest average CAR. The standard deviation (SD) values range from 1.09 for MUK to 5.47 for SIN, indicating varying levels of volatility in the CAR values across the banks. A higher SD value reflects a greater fluctuation in the CAR over the years, suggesting that SIN's CAR was more volatile compared to other banks.

The coefficient of variation (CV), a measure of relative risk, shows the variation of CAR relative to its mean. The CV for SIN is 30.23%, the highest among the banks, indicating significant variability in its CAR relative to its mean, suggesting a higher level of risk and inconsistency. In contrast, MUK has the lowest CV of 8.68%, indicating a relatively stable CAR with minimal fluctuations. High CV values such as those for SIN and JYO (30.37%)

could suggest that these banks may have experienced greater risk and uncertainty in maintaining capital adequacy ratios, which could impact their financial stability and risk management strategies. Conversely, banks like MUK with a lower CV may have demonstrated more consistent financial performance over the period.

4.1.2 Status of Cash Reserve Ratio

Table 5

Status of Cash Reserve Ratio

CRR	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	25.26	5.68	4.57	6.73	5.56	4.77	4.70	32.83	1.18	3.63
2014/15	24.56	5.42	5.28	13.93	5.30	5.28	4.00	31.24	1.10	1.27
2015/16	26.23	6.22	5.36	11.05	8.71	5.30	5.10	25.75	1.09	3.84
2016/17	27.56	6.22	5.35	6.28	7.30	5.81	5.31	29.76	1.03	4.44
2017/18	28.72	5.87	5.16	5.09	5.24	5.44	4.38	31.21	32.00	5.40
2018/19	25.88	4.06	4.32	4.07	5.21	4.63	4.05	20.86	23.00	4.72
2019/20	27.83	3.94	3.74	5.22	23.79	4.19	4.38	27.30	30.27	4.49
2020/21	24.07	3.46	3.10	4.29	22.10	5.65	3.45	24.36	26.98	3.98
2021/22	26.32	3.14	3.23	3.42	23.99	3.26	3.19	25.36	24.90	2.70
2022/23	25.67	4.17	4.03	4.29	24.49	4.04	4.03	27.26	31.76	2.50
Mean	26.21	4.82	4.41	6.44	13.17	4.84	4.26	27.59	17.33	3.70
SD	1.47	1.18	0.87	3.41	9.06	0.81	0.67	3.69	14.25	1.23
CV	5.60	24.53	19.75	53.00	68.77	16.84	15.65	13.39	82.21	33.19

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

Table 5 illustrates the Cash Reserve Ratio (CRR) status of 10 development banks in Nepal over the fiscal years 2013/14 to 2022/23, indicating the proportion of reserves maintained by these banks relative to their total deposits.

The mean values reveal significant variation among banks, with SNG maintaining the highest CRR at 27.59%, followed by MUK (26.21%) and EXC (17.33%), suggesting strong liquidity buffers. Conversely, SIN has the lowest average CRR at 3.70%, indicating a minimal reserve position. The standard deviation (SD) values highlight fluctuations in CRR levels, with EXC (14.25%) and KAMA (9.06%) showing the highest variability, reflecting inconsistent reserve maintenance practices. In contrast, banks like LUM (0.67%) and SHI (0.81%) have lower SDs, suggesting relatively stable CRR levels over the analyzed period. The coefficient of variation (CV) reveals significant variability in CRR trends, particularly

for EXC (82.21%) and KAMA (68.77%), indicating inconsistent liquidity management, while SNG (13.39%) and MUK (5.60%) demonstrate more consistent reserve practices.

The findings have critical implications for liquidity management and regulatory compliance in the development banking sector. High mean CRRs in SNG and MUK suggest strong liquidity positions, enhancing their capacity to meet withdrawal demands and comply with central bank requirements. However, excessive reserve holdings may limit their lending capacity and profitability. Low CRRs in SIN and LUM reflect minimal liquidity buffers, increasing their vulnerability to liquidity crises and regulatory non-compliance risks.

High variability in CRR levels, as seen in EXC and KAMA, suggests challenges in maintaining consistent reserve practices, potentially affecting their operational stability. Improving liquidity management, particularly in banks with low or highly variable CRR levels, is essential to ensure financial resilience and adherence to regulatory standards in the long term.

4.1.3 Status of Credit Deposit Ratio

Table 6

Status of Credit Deposit Ratio

CDR	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	84.56	87.07	83.03	79.25	85.74	87.68	70.80	80.76	66.24	70.00
2014/15	81.56	86.55	80.02	77.87	78.12	84.24	72.96	81.60	72.35	65.47
2015/16	82.56	86.77	78.28	80.73	86.64	86.91	72.96	88.34	87.57	76.43
2016/17	83.33	89.51	86.90	82.44	87.53	85.58	98.57	84.10	82.70	74.74
2017/18	82.07	88.83	82.66	79.41	85.35	83.39	99.22	82.41	81.57	70.44
2018/19	82.61	85.83	88.84	84.48	94.67	85.38	103.97	86.11	85.63	77.43
2019/20	80.94	77.77	79.33	81.33	81.60	81.19	86.95	81.58	77.00	76.43
2020/21	82.76	82.04	83.49	89.03	87.26	89.01	86.84	84.45	83.87	85.56
2021/22	82.58	85.31	86.36	88.99	87.34	87.54	89.31	83.28	89.22	83.45
2022/23	81.89	82.89	82.20	79.42	82.62	81.47	88.75	80.15	79.53	86.52
Mean	82.49	85.26	83.11	82.30	85.69	85.24	87.03	83.28	80.57	76.65
SD	0.99	3.50	3.43	4.00	4.39	2.65	11.72	2.54	7.09	6.95
CV	1.21	4.11	4.13	4.86	5.13	3.11	13.47	3.06	8.80	9.07

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

Table 6 presents the Credit Deposit Ratio (CDR) of 10 development banks in Nepal over ten fiscal years (2013/14–2022/23), highlighting the efficiency of these banks in utilizing deposits for lending activities. The Credit Deposit Ratio (CDR) of 10 development banks in Nepal over ten fiscal years (2013/14–2022/23), highlighting the efficiency of these banks in utilizing deposits for lending activities. The mean CDR reveals that LUM has the highest

average ratio at 87.03%, followed by KAMA (85.69%) and GAR (85.26%), indicating a strong focus on credit disbursement relative to deposits. Conversely, SIN has the lowest mean CDR at 76.65%, reflecting a comparatively conservative lending approach. Standard deviation (SD) values indicate variability in CDR trends, with LUM showing the highest SD (11.72%), pointing to significant fluctuations in its credit-deposit management. In contrast, banks such as MUK and SNG exhibit lower SDs of 0.99% and 2.54%, respectively, indicating stable CDR trends over the years. Coefficient of Variation (CV) values reveal relative stability in MUK (1.21%) and SNG (3.06%), while LUM (13.47%) and EXC (8.80%) have higher variability, reflecting inconsistent credit management practices.

The findings have significant implications for the financial management and operational efficiency of the development banks. Banks with high mean CDRs, such as LUM and KAMA, demonstrate proactive credit utilization but may face liquidity risks if deposits fail to meet lending demands consistently. Conversely, SIN, with a low mean CDR, may be underutilizing its deposits, potentially losing revenue opportunities. Banks with high variability, such as LUM, indicate unstable lending policies, which may affect their ability to maintain consistent financial performance. Stable banks like MUK and SNG, with low CVs, are better positioned to manage liquidity and credit risks impassively, reflecting prudent financial strategies. Overall, optimizing CDR levels and reducing variability through better deposit management and strategic lending is crucial for maintaining financial stability and ensuring sustainable growth in the development banking sector.

4.1.4 Status of Non-performing Loan

Table 7

Status of Non-Performing Loan

Year/NPLR	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	1.23	0.12	2.67	16.18	0.17	0.38	9.74	0.68	1.88	1.97
2014/15	2.36	0.29	1.98	8.33	0.07	0.93	2.51	0.60	1.61	1.63
2015/16	2.36	0.31	1.39	4.10	1.03	0.31	0.79	0.65	1.09	1.18
2016/17	1.26	0.24	0.96	3.91	1.39	0.22	3.79	0.60	1.02	0.84
2017/18	0.56	0.27	0.40	3.92	1.13	0.07	3.34	1.62	0.62	2.92
2018/19	0.07	0.20	0.54	2.59	0.97	0.11	1.64	0.80	0.62	1.61
2019/20	0.26	0.79	0.92	3.21	1.79	1.10	2.69	1.13	2.79	1.96
2020/21	0.23	0.72	0.84	2.80	1.61	1.27	2.17	1.39	3.77	2.80
2021/22	0.21	0.85	1.47	2.43	2.31	1.14	1.70	1.39	2.85	1.60
2022/23	0.98	1.70	3.43	3.51	3.09	1.81	3.36	3.16	4.86	2.80
Mean	0.95	0.55	1.46	5.10	1.36	0.73	3.17	1.20	2.11	1.93
SD	0.86	0.48	0.97	4.24	0.92	0.59	2.48	0.79	1.43	0.71
CV	90.09	88.11	66.63	83.18	67.49	81.01	78.24	65.32	67.55	36.81

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

The Table 7 illustrates the status of Non-Performing Loan Ratios (NPLR) across 10 development banks in Nepal over a ten-fiscal-year period from 2013/14 to 2022/23. The mean NPLR indicates that MAHA has the highest average of 5.10%, followed by LUM (3.17%) and SIN (1.93%), while GAR has the lowest average of 0.55%. High standard deviations (SD) in MAHA (4.24%) and LUM (2.48%) suggest significant fluctuations in NPL levels, reflecting varying financial performance and potential issues in credit management. Conversely, banks like GAR and SHI exhibit lower SDs of 0.48% and 0.59%, respectively, indicating more stability in managing non-performing loans over the analyzed period. The coefficient of variation (CV), a relative measure of variability, is highest for MUK (90.09%) and GAR (88.11%), demonstrating inconsistent NPL trends, whereas SIN, with the lowest CV (36.81%), indicates better consistency in its credit risk management practices.

These findings highlight critical implications for the financial health and credit risk management of the development banks. Banks with higher NPL levels, such as MAHA and LUM, face challenges in maintaining profitability and sustaining investor confidence, as elevated NPLs signal inefficiencies in loan approval and recovery processes. Conversely, banks like GAR and SHI, with lower mean NPLRs and standard deviations, exhibit better credit risk control, enhancing their financial stability and trustworthiness.

4.1.5 Status of Return on Assets

Table 8

Status of Return on Assets

Year/ROA	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	1.11	0.02	1.01	-5.58	2.09	2.83	2.40	0.99	1.96	1.09
2014/15	1.12	0.02	1.39	1.47	0.02	2.52	2.89	1.94	2.13	1.42
2015/16	1.12	0.02	1.70	2.69	1.32	2.73	2.12	1.80	2.38	1.98
2016/17	1.24	0.02	1.73	2.51	2.14	2.92	0.82	2.17	2.82	1.62
2017/18	1.79	0.02	1.48	1.59	1.56	1.97	1.22	1.48	2.61	0.52
2018/19	1.65	1.53	1.46	1.73	1.07	1.95	2.07	1.44	1.96	1.25
2019/20	1.07	1.15	1.15	1.39	0.33	1.21	1.10	0.58	0.91	0.29
2020/21	1.14	1.15	1.11	1.55	1.17	1.19	0.98	0.86	1.00	-0.21
2021/22	1.11	1.29	0.94	1.65	0.99	1.28	1.12	0.88	0.67	0.83
2022/23	0.95	1.42	0.41	0.61	0.58	1.20	0.85	0.46	0.32	0.93
Mean	1.23	0.66	1.24	0.96	1.13	1.98	1.56	1.26	1.68	0.97
SD	0.27	0.69	0.40	2.37	0.70	0.73	0.74	0.59	0.88	0.65
CV	21.94	103.61	32.28	246.61	61.77	36.79	47.67	46.90	52.39	66.99

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

Table 8 highlights the Return on Assets (ROA) for 10 development banks in Nepal over ten fiscal years (2013/14–2022/23), representing the profitability of banks relative to their

total assets. The mean values show that SHI has the highest average ROA at 1.98%, followed by EXC (1.68%) and LUM (1.56%), indicating superior efficiency in generating profit from assets. On the lower end, GAR has the smallest mean ROA of 0.66%, reflecting weaker asset utilization. Standard deviation (SD) values indicate variability, with MAHA showing the highest fluctuation at 2.37%, highlighting inconsistent profitability, while JYO (0.40%) and MUK (0.27%) exhibit more stable ROA trends. The coefficient of variation (CV) provides a measure of relative variability, with MAHA (246.61%) and GAR (103.61%) showing the highest inconsistencies in profitability. In contrast, MUK (21.94%) and JYO (32.28%) demonstrate better consistency over the analyzed period.

The findings carry significant implications for the financial stability and operational performance of the development banks. Banks like SHI and EXC, with high mean ROAs and moderate variability, reflect strong asset utilization and stable profit generation, enhancing their financial sustainability and attractiveness to investors. However, GAR, with low ROA and high variability, may face challenges in maintaining profitability and operational efficiency. The extreme variability in MAHA highlights significant instability in its financial management, potentially deterring investment and undermining long-term growth. Banks with more stable ROA, such as MUK and JYO, are better positioned to ensure consistent returns and financial resilience. Enhancing profitability consistency, particularly for banks with high CV values, is crucial to foster investor confidence and promote sustainable growth within the sector.

4.1.6 Status of Return on Equity

Table 9

Status of Return on Equity

Year/ROE	MUK	GAR	JYO	MAHA	KAMA	SHI	LUM	SNG	EXC	SIN
2013/14	12.5	10.02	12.1	-9.23	13.86	15	8.51	10.8	8.85	9.12
2014/15	13.7	10.57	14.9	11.12	10.98	15.7	15.52	14.9	11.3	10.3
2015/16	14.1	10.96	15.7	14.67	13.46	16.3	14.15	15.9	13.9	11.9
2016/17	15.3	11.27	17	16.23	16.78	16.9	11.02	17.2	14.8	13.7
2017/18	17	12.31	14.9	12.14	14.89	14.3	13.21	14	12.5	10.3
2018/19	18.6	13.87	15.3	15.79	12.47	14.7	15.65	12.8	12	11.2
2019/20	13.2	11.72	12	12.32	10.32	12	11.43	10.1	9.87	9.34
2020/21	14.2	12.41	12.9	14.32	13.28	13	10.92	11	10.2	8.89
2021/22	15.3	13.52	13.3	15.21	14.12	13.9	12.12	12	11.5	9.67
2022/23	12.9	14.34	10.1	11.41	10.34	11.6	9.98	8.12	7.76	8.79
Mean	14.67	12.10	13.82	11.40	13.05	14.32	12.25	12.69	11.25	10.33
SD	1.93	1.46	2.09	7.48	2.07	1.76	2.35	2.83	2.17	1.55
CV	13.19	12.04	15.12	65.62	15.90	12.32	19.22	22.30	19.29	14.99

Source: Annual Reports of Development Banks from 2013/14 to 2022/23

Table 9 provides an overview of the Return on Equity (ROE) of 10 development banks in Nepal over ten fiscal years (2013/14–2022/23), reflecting the efficiency of these banks in generating profits relative to shareholders' equity.

The mean ROE values indicate that MUK (14.67%), SHI (14.32%), and JYO (13.82%) have the highest average profitability, highlighting strong equity utilization. On the lower end, SIN (10.33%) and EXC (11.25%) demonstrate weaker equity performance. The standard deviation (SD) values show variability in ROE trends, with MAHA (7.48%) exhibiting the highest fluctuation, suggesting instability in profit generation from equity. In contrast, GAR (1.46%) and SHI (1.76%) reflect more stable returns. The coefficient of variation (CV), a relative measure of variability, shows that MAHA has the highest inconsistency at 65.62%, while GAR (12.04%) and MUK (13.19%) exhibit the most consistent performance.

The findings have significant implications for the financial health and investor confidence in the development banks. Banks like MUK and SHI, with high average ROE and low CV, are likely to attract more investment due to their stable and efficient equity utilization. However, the high variability in MAHA's ROE highlights inconsistent financial performance, which could reduce investor confidence and hinder long-term growth. SIN, with both low ROE and moderate variability, may face challenges in maximizing shareholder value, impacting its competitiveness. The stability seen in GAR and SHI suggests better financial management practices, which contribute to sustained profitability. Addressing variability in equity performance, especially for banks like MAHA, is critical to improving financial stability and ensuring consistent returns for shareholders.

4.1.7 Overall Descriptive Statistics

Table 10

Overall Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	SD
CAR	100	11.19	30.60	15.03	3.58
CRR	100	1.03	32.83	11.28	10.42
CDR	100	65.47	103.97	83.16	6.02
NPLR	100	0.07	16.18	1.86	2.12
ROA	100	-5.58	2.92	1.27	1.00
ROE	100	-9.23	18.61	12.59	3.22

Table 10 presents the overall descriptive statistics for key financial ratios and indicators of development banks in Nepal. The variables included are Capital Adequacy Ratio (CAR), Cash Reserve Ratio (CRR), Credit Deposit Ratio (CDR), Non-Performing Loan Ratio (NPLR), Return on Assets (ROA), and Return on Equity (ROE). Each variable is analyzed for its minimum, maximum, mean, and standard deviation values, providing a snapshot of the performance and variability of these banks in the study.

The Capital Adequacy Ratio (CAR) shows a mean value of 15.03%, with a range from 11.19% to 30.60%, and a standard deviation of 3.58%. The CAR is a critical indicator of a bank's financial stability and ability to absorb potential losses. The average CAR of 15.03% indicates that, on average, the banks in the sample maintain a sufficient capital buffer relative to their risk-weighted assets. The standard deviation of 3.58% indicates moderate variability in capital adequacy across the banks, reflecting differences in risk management strategies and financial strength. A higher CAR generally implies better financial health, as it enhances a bank's ability to absorb shocks from credit, market, or operational risks, while a lower CAR could signal potential vulnerabilities, especially in times of financial stress.

The Non-Performing Loan Ratio (NPLR), with a mean value of 1.86%, indicates that, on average, development banks have a relatively low level of non-performing loans. The standard deviation of 2.12 shows significant variation in the NPLR across the banks, with values ranging from a minimum of 0.07% to a maximum of 16.18%. This wide variability suggests that while some banks maintain a healthy loan portfolio, others may experience higher levels of loan defaults, which could affect their financial stability and profitability. High NPLR is a potential risk indicator, suggesting challenges in loan management and the need for better credit risk control practices.

The Credit Deposit Ratio (CDR), with a mean of 83.16%, reflects the proportion of loans provided relative to deposits held by the banks. The range from 65.47% to 103.97%, along with a standard deviation of 6.02, suggests a moderate level of variation across the banks. A higher CDR may indicate more aggressive lending practices, which can be risky if deposit growth does not align with loan growth, although the majority of banks in the sample appear to maintain a balanced approach.

The Cash Reserve Ratio (CRR) averages 11.28%, with a wide range from 1.03% to 32.83%. The standard deviation of 10.42 indicates substantial variability in how much cash banks hold in reserve. A higher CRR may reflect a more conservative approach to liquidity

management, ensuring that banks maintain enough reserves to meet regulatory requirements and manage financial uncertainty. The variation in CRR across the banks could be attributed to different risk management strategies and compliance requirements.

The Return on Assets (ROA), with a mean of 1.27%, measures the impassiveness of asset utilization to generate profits. The range from -5.58% to 2.92% and a standard deviation of 1.00 highlight moderate variability. Negative ROA values suggest inefficiencies or poor asset management in some banks, while positive ROA values indicate more impassive asset use, contributing to financial stability. The Return on Equity (ROE), with a mean of 12.59%, indicates that, on average, the banks generate a satisfactory return for their shareholders. However, the range from -9.23% to 18.61% and a standard deviation of 3.22 reflect variability in performance. A high ROE generally signals efficient use of equity capital, while low or negative ROE values may indicate financial challenges or underperformance, which could impact investor confidence.

4.2 Correlation Analysis

Table 11 presents the correlation analysis between Return on Assets (ROA) and Return on Equity (ROE) and other key variables: Non-Performing Loan Ratio (NPLR), Credit Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), and Cash Reserve Ratio (CRR). The table shows the strength and direction of relationships between ROA and ROE and these variables, along with the statistical significance of these relationships.

Table 11

Correlation Analysis

Variables	CAR	CRR	CDR	NPLR	ROA	ROE
CAR	1					
CRR	-0.195	1				
	0.052					
CDR	-0.019	-0.012	1			
	0.848	0.905				
NPLR	-0.044	-0.053	-0.178	1		
	0.662	0.602	0.077			
ROA	-0.079	-0.059	-0.017	-.493**	1	
	0.433	0.563	0.870	0.000		
ROE	0.025	0.050	.256*	-.680**	.805**	1
	0.803	0.619	0.010	0.000	0.000	

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

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

The Capital Adequacy Ratio (CAR) shows a weak negative correlation with ROA of -0.079, which is not statistically significant at the 0.01 level, as indicated by the p-value of 0.433. This suggests that there is little to no meaningful relationship between the capital adequacy ratio and the banks' ability to generate profit from their assets. The CAR measures a bank's financial strength and its ability to absorb potential losses, but in this case, the data indicates that maintaining a higher capital buffer does not necessarily lead to better asset utilization or higher profitability for these development banks. This could imply that the banks' profitability is more dependent on other factors, such as asset management efficiency or market conditions, rather than just the level of capital reserves.

The Cash Reserve Ratio (CRR) also shows a weak negative correlation of -0.059 with ROA, which, like CAR, is not statistically significant (p-value = 0.563). This weak correlation suggests that the amount of cash reserves held by the banks has minimal impact on their profitability as measured by ROA. CRR is an important liquidity measure, indicating the proportion of deposits that banks must hold in reserve. However, the results imply that the liquidity reserves maintained by the banks in this sample do not significantly affect their ability to generate returns on assets. This might reflect the banks' ability to manage liquidity impassively without it necessarily translating into higher profitability, or it could suggest that other factors, such as operational efficiency or market conditions, are more critical in determining profitability.

The Credit Deposit Ratio (CDR), with a correlation of -0.017, shows an almost negligible relationship with ROA, which is statistically insignificant (p-value = 0.870). CDR measures the proportion of loans given out relative to the deposits held by banks, and it is an indicator of liquidity and lending aggressiveness. The negative correlation suggests that, to some extent, as the lending levels relative to deposits increase, the banks' profitability from assets may slightly decrease. However, the correlation is so weak and statistically insignificant that it can be concluded that lending practices alone, as reflected by CDR, do not have a substantial impact on ROA. This could imply that the banks' profitability is more influenced by factors like asset quality, interest rates, or non-interest income rather than the lending-to-deposit ratio.

The Non-Performing Loan Ratio (NPLR) demonstrates a significant negative correlation of -0.493 with ROA, with a p-value of 0.000, indicating statistical significance at the 0.01 level. This negative correlation suggests that higher levels of non-performing loans (NPLs)

are associated with lower returns on assets. Non-performing loans are a critical risk factor for banks, as they represent loans that are not generating expected income and may lead to financial instability. The negative impact of NPLR on ROA highlights the importance of maintaining a healthy loan portfolio and impassive credit risk management practices. Banks with higher NPLR are likely to face challenges in generating profits from their assets, as more resources are tied up in non-performing loans, which affect both profitability and operational efficiency. Therefore, minimizing NPLs is crucial for enhancing asset returns and overall financial performance.

The Capital Adequacy Ratio (CAR) shows a very weak positive correlation with ROE of 0.025, which is statistically insignificant with a p-value of 0.803. This weak correlation indicates that the level of capital adequacy does not have a meaningful impact on the banks' return on equity. While CAR measures a bank's financial strength and its capacity to absorb potential losses, the results suggest that a higher CAR does not necessarily lead to better returns for shareholders. This could imply that banks with higher capital buffers are not necessarily more profitable in terms of equity returns, and that other factors such as operational efficiency, cost control, or market conditions may play a more prominent role in determining ROE.

The Cash Reserve Ratio (CRR) also shows a weak positive correlation of 0.050 with ROE, which is statistically insignificant (p-value = 0.619). This weak correlation suggests that the amount of liquidity reserves maintained by the banks does not have a substantial impact on their ability to generate returns on equity. CRR is a liquidity measure, indicating how much of the deposits banks hold as reserves, but in this case, the data shows that liquidity management, in terms of cash reserves, does not significantly affect equity returns. This could indicate that other factors, such as loan portfolio quality, interest rate margins, or non-interest income sources, are more influential in determining ROE than the level of cash reserves held by the banks.

The Credit Deposit Ratio (CDR) shows a moderate positive correlation of 0.256 with ROE, which is statistically significant at the 0.05 level (p-value = 0.010). This correlation suggests that a higher credit-to-deposit ratio is associated with a higher return on equity. A higher CDR indicates that the bank is lending out a larger portion of its deposits, which can result in increased interest income and, therefore, higher profits for shareholders. However, this positive relationship also implies that banks need to balance the risks associated with

higher lending, as aggressive lending practices can lead to higher levels of default if not managed properly. The significant positive correlation between CDR and ROE suggests that, within a certain range, expanding lending activities relative to deposits may be an impassive strategy for improving returns on equity.

The Non-Performing Loan Ratio (NPLR) shows a strong negative correlation of -0.680 with ROE, which is statistically significant at the 0.01 level (p-value = 0.000). This negative correlation indicates that higher levels of non-performing loans are significantly associated with lower returns on equity. Non-performing loans represent a risk to a bank's profitability as they do not generate interest income and may lead to higher provisions for loan losses. The significant negative relationship between NPLR and ROE highlights the critical importance of maintaining a healthy loan portfolio. Banks with higher NPLR are likely to experience a reduction in their profitability, which directly impacts their ability to generate returns for shareholders. Impassive credit risk management and a focus on minimizing non-performing loans are essential for ensuring strong performance in terms of return on equity.

4.3 Regression Analysis

The regression analysis conducted in this study aims to examine the impact of key financial ratios, including Non-Performing Loan Ratio (NPLR), Credit Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), and Cash Reserve Ratio (CRR) on the profitability indicators Return on Assets (ROA) and Return on Equity (ROE) of development banks over a period of ten fiscal years.

Regression Analysis with Dependent variables as Return on Assets (ROA)

Table 12

Correlation Analysis with ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.526a	0.277	0.246	0.86437

a. Predictors: (Constant), NPLR, CAR, CDR, CRR

The R-Squared value is 0.277, indicating that the model explains approximately 27.7% of the variance in ROA. This suggests that while the independent variables in the model provide some insight into variations in ROA, there are likely other factors not included in the model that contribute to the remaining 72.3% of the unexplained variance. While the model does explain a reasonable portion of the variation in ROA, the relatively low R-

squared value suggests that further research might be needed to explore additional variables that could influence ROA more impassively.

Table 13

Correlation Analysis with ROA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.175	4	6.794	9.093	.000b
	Residual	70.977	95	0.747		
	Total	98.152	99			

a. Dependent Variable: ROA

b. Predictors: (Constant), NPLR, CAR, CDR, CRR

The F-Statistic is 9.093, with a significance level of 0.000, indicating that the overall regression model is statistically significant. This means that, collectively, the independent variables (CAR, CRR, CDR, and NPLR) provide a significant explanation for variations in ROA. While individual variables like CAR, CRR, and CDR do not show significant individual impacts, the overall model suggests that these variables, particularly NPLR, together help explain the profitability of banks in terms of asset utilization. The significant F-statistic indicates that the model is useful in understanding the factors affecting ROA, even though some of the individual predictors are not statistically significant on their own.

Table 14

Correlation Analysis with ROA

		Unstandardized Coefficients			
Model		B	Std. Error	t	Sig.
1	(Constant)	3.937	1.318	2.986	0.004
	CAR	-0.035	0.025	-1.420	0.159
	CRR	-0.011	0.009	-1.258	0.211
	CDR	-0.019	0.015	-1.281	0.203
	NPLR	-0.247	0.042	-5.895	0.000

a. Dependent Variable: ROA

The Constant value is 3.937, with a standard error of 1.318, a t-value of 2.986, and a p-value of 0.004. This indicates that the constant term is statistically significant at the 0.01 level, suggesting that when all independent variables (CAR, CRR, CDR, and NPLR) are

zero, the expected ROA will be 3.937%. The constant term represents the baseline ROA for the banks in the study, before considering the impacts of the explanatory variables.

The Capital Adequacy Ratio (CAR) has an unstandardized coefficient (B) of -0.035 with a standard error of 0.025, a t-value of -1.420, and a p-value of 0.159. Since the p-value is greater than the 0.05 threshold, CAR is not statistically significant in explaining variations in ROA. This suggests that the level of capital adequacy does not have a meaningful impact on the banks' ability to generate profits from assets. In other words, banks with higher capital adequacy do not necessarily show higher profitability in terms of ROA, and other factors likely play a more important role in influencing asset returns.

The Cash Reserve Ratio (CRR) has a coefficient (B) of -0.011 with a standard error of 0.009, a t-value of -1.258, and a p-value of 0.211. Similar to CAR, the p-value is greater than 0.05, indicating that CRR does not have a significant relationship with ROA. The result suggests that the amount of cash reserves held by banks does not substantially affect their ability to generate profits from assets. While maintaining reserves is important for liquidity management, it appears that banks with higher CRR levels do not necessarily perform better or worse in terms of asset profitability.

The Credit Deposit Ratio (CDR) has a coefficient (B) of -0.019 with a standard error of 0.015, a t-value of -1.281, and a p-value of 0.203. This indicates that CDR is not statistically significant in explaining ROA, as its p-value is greater than the 0.05 threshold. The negative sign of the coefficient suggests that, although higher CDR values (which reflect more aggressive lending practices) are typically associated with higher risks, they do not have a substantial impact on ROA in this study. This might indicate that banks are managing their lending practices in a way that does not negatively impact their overall asset returns, or that other factors not included in the model have a stronger influence on ROA.

The Non-Performing Loan Ratio (NPLR) is highly significant, with a coefficient (B) of -0.247, a standard error of 0.042, a t-value of -5.895, and a p-value of 0.000. This strong negative relationship between NPLR and ROA indicates that an increase in non-performing loans is associated with a significant decrease in return on assets. NPLR is a critical measure of loan quality, and this result underscores the importance of managing non-performing loans impassively. Banks with higher levels of non-performing loans tend to have lower asset profitability, which may be attributed to the loss of potential interest income and the

need for provisioning for bad debts. The statistical significance of NPLR emphasizes the risks posed by poor loan management to overall profitability.

Regression Analysis with Dependent variables as Return on Equity (ROE)

Table 15

Correlation Analysis with ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.694[a]	0.482	0.460	2.36560

a. Predictors: (Constant), NPLR, CAR, CDR, CRR

Table 14 presents the results of a regression analysis investigating the relationship between various financial ratios (CAR, CRR, CDR, NPLR) and Return on Equity (ROE). The dependent variable is ROE, which measures a bank's ability to generate profits relative to shareholders' equity. The table provides unstandardized coefficients (B), standard errors, t-values, and significance levels (Sig.) for each independent variable, as well as the R-squared value, F-statistic, and the significance of the overall model, which help to assess the strength and validity of the relationships.

The R-Squared value is 0.482, suggesting that the model explains 48.2% of the variation in ROE. This indicates that the independent variables (CAR, CRR, CDR, NPLR) provide a moderate explanation of the variations in ROE, though other factors not included in the model account for the remaining 51.8%. While the model does a reasonable job of explaining the profitability of banks in relation to shareholders' equity, further research could explore additional variables, such as market conditions or operational efficiency, that may contribute to a more comprehensive understanding of ROE.

Table 16

Correlation Analysis with ROE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	494.296	4	123.574	22.082	.000[b]
	Residual	531.624	95	5.596		
	Total	1025.920	99			

a. Dependent Variable: ROE

b. Predictors: (Constant), NPLR, CAR, CDR, CRR

The F-Statistic is 22.082, with a significance value of 0.000, indicating that the overall regression model is statistically significant. This means that, collectively, the independent variables (CAR, CRR, CDR, and NPLR) provide a significant explanation for variations in ROE. The significant F-statistic reinforces the idea that the combination of these factors, especially NPLR and CDR, plays a meaningful role in determining how banks generate returns for their equity holders. However, the non-significance of CAR and CRR suggests that while the model as a whole is valuable, more detailed analysis could help refine the factors that truly drive profitability in terms of ROE.

Table 17

Correlation Analysis with ROE

Model		Unstandardized Coefficients			
		B	Std. Error	t	Sig.
1	(Constant)	8.122	3.608	2.251	0.027
	CAR	0.002	0.068	0.034	0.973
	CRR	0.006	0.023	0.240	0.811
	CDR	0.275	0.040	2.863	0.006
	NPLR	-0.996	0.115	-8.688	0.000

a. Dependent Variable: ROE

The Constant is 8.122, with a standard error of 3.608, a t-value of 2.251, and a p-value of 0.027. This suggests that the constant term is statistically significant at the 0.05 level, indicating that when all independent variables (CAR, CRR, CDR, NPLR) are zero, the expected ROE will be 8.122%. The constant term represents the baseline ROE for the banks in the study, before considering the impacts of the explanatory variables. The significance of the constant indicates a solid starting point for the relationship between the independent variables and ROE.

The Capital Adequacy Ratio (CAR) has an unstandardized coefficient (B) of 0.002, with a standard error of 0.068, a t-value of 0.034, and a p-value of 0.973. The p-value is greater than 0.05, suggesting that CAR does not significantly impact ROE. This result indicates that the level of capital adequacy, while important for financial stability, does not have a meaningful impact on the banks' ability to generate returns on equity. This finding is consistent with the idea that while CAR reflects a bank's ability to absorb losses and

maintain solvency, it does not necessarily translate into higher profitability for shareholders in the context of this study.

The Cash Reserve Ratio (CRR) has a coefficient (B) of 0.006, with a standard error of 0.023, a t-value of 0.240, and a p-value of 0.811. Again, the p-value is greater than 0.05, indicating that CRR does not have a statistically significant relationship with ROE. This suggests that the proportion of cash reserves held by a bank, which affects liquidity and regulatory compliance, does not substantially impact the profitability derived from shareholders' equity. Although maintaining liquidity is crucial for financial stability, it appears that CRR does not directly affect banks' ability to generate returns for their equity holders in this study.

The Credit Deposit Ratio (CDR) shows a coefficient (B) of 0.275, with a standard error of 0.040, a t-value of 2.863, and a p-value of 0.006. This result indicates that CDR has a statistically significant positive relationship with ROE at the 0.01 level, suggesting that higher credit deposit ratios (which reflect more aggressive lending practices) are associated with higher returns on equity. A higher CDR means that a bank is lending out a larger proportion of its deposits, which could be viewed as a more profitable strategy if managed properly. The significant positive coefficient indicates that banks with higher lending activity relative to deposits tend to provide better returns for their shareholders, reinforcing the importance of impassive lending strategies for profitability.

The Non-Performing Loan Ratio (NPLR) has a coefficient (B) of -0.996, with a standard error of 0.115, a t-value of -8.688, and a p-value of 0.000. This is a highly significant negative relationship between NPLR and ROE, indicating that as non-performing loans increase, the return on equity decreases significantly. NPLR is a critical measure of loan quality, and this result highlights the detrimental impact of loan defaults on banks' profitability. High levels of non-performing loans reduce the income generated from interest, increase provisioning costs, and potentially lead to lower equity returns. The strong negative coefficient and the statistical significance underscore the importance of managing asset quality to maintain high returns for equity holders.

4.4 Hypotheses Test

The results of hypothesis testing regarding the impact of various financial ratios on the Return on Assets (ROA) and Return on Equity (ROE) of commercial banks. Each hypothesis is tested for statistical significance using P-values, with a standard threshold of

0.05. If the P-value is less than 0.05, the null hypothesis is rejected, indicating that the independent variable has a significant impact on the dependent variable. Conversely, if the P-value is greater than 0.05, the null hypothesis is not rejected, meaning there is no significant relationship. The findings have implications for the banking sector's performance and the factors influencing profitability.

Table 18

Hypotheses Test

Alternative Hypotheses	P-value	Remarks
$H_1$1: There is significant impact of capital adequacy ratio on return on assets.	0.159	Rejected
$H_1$2: There is significant impact of liquidity (cash reserve ratio) on return on assets.	0.211	Rejected
$H_1$3: There is significant impact of credit deposit ratio on return on assets.	0.203	Rejected
$H_1$4: There is significant impact of non-performing loan ratio on return on assets.	0.000	Accepted
$H_1$5: There is significant impact of capital adequacy ratio on return on equity.	0.973	Rejected
$H_1$6: There is significant impact of liquidity (cash reserve ratio) on return on equity.	0.811	Rejected
$H_1$7: There is significant impact of credit deposit ratio on return on equity.	0.006	Accepted
$H_1$8: There is significant impact of non-performing loan ratio on return on equity.	0.000	Accepted

H11: Impact of Capital Adequacy Ratio (CAR) on Return on Assets (ROA)

The P-value for H11 is 0.159, which is greater than 0.05. This suggests that there is no significant impact of CAR on ROA. As the P-value is higher than the 0.05 threshold, the hypothesis is rejected. The consequence of this finding is that while CAR is important for maintaining the financial health and solvency of a bank, it does not directly affect the bank's asset returns in this study. This result challenges the assumption that higher capital adequacy leads to improved asset profitability, which could imply that other factors such

as asset quality or operational efficiency may play a more significant role in determining ROA.

H12: Impact of Liquidity (Cash Reserve Ratio) on Return on Assets (ROA)

The P-value for H12 is 0.211, also greater than 0.05, indicating no significant impact of the Cash Reserve Ratio (CRR) on ROA. Hence, H12 is rejected. This suggests that the amount of liquidity held by the bank, in the form of cash reserves, does not influence the profitability of the bank's assets. This finding is relevant for financial managers and regulators, indicating that while liquidity is essential for meeting regulatory requirements and ensuring stability, its direct impact on asset returns might be negligible. This may reflect the fact that the use of liquidity is more tied to risk management than to generating income from assets.

H13: Impact of Credit Deposit Ratio on Return on Assets (ROA)

The P-value for H13 is 0.203, which is greater than 0.05. Therefore, H13 is also rejected, implying no significant relationship between the Credit Deposit Ratio (CDR) and ROA. This means that the proportion of deposits converted into loans does not have a notable impact on the profitability of the bank's assets. While lending activities are often viewed as critical to generating income, this result suggests that the overall lending strategy, including factors such as loan quality and risk, may have a more significant influence on asset returns rather than just the lending volume.

H14: Impact of Non-Performing Loan Ratio on Return on Assets (ROA)

H14 has a P-value of 0.000, which is less than 0.05. This indicates that the hypothesis is accepted, meaning that non-performing loans (NPLR) have a significant negative impact on ROA. The strong negative relationship between NPLR and ROA suggests that the higher the proportion of non-performing loans, the lower the return on assets. This finding is consistent with financial theory, which posits that non-performing loans reduce the income from interest, increase provisioning costs, and decrease asset profitability. This result emphasizes the importance of managing asset quality to maintain robust returns from bank assets.

H15: Impact of Capital Adequacy Ratio on Return on Equity

The P-value for H15 is 0.973, which is far greater than 0.05, leading to the rejection of this hypothesis. This suggests that there is no significant impact of CAR on ROE. Despite the importance of capital adequacy in ensuring financial stability and compliance with

regulatory requirements, this finding indicates that CAR does not directly contribute to the profitability of equity holders. This could imply that factors such as operational efficiency or market conditions have a stronger influence on ROE than the level of capital reserves maintained by the bank.

H16: Impact of Liquidity (Cash Reserve Ratio) on Return on Equity

With a P-value of 0.811, which is well above 0.05, H16 is rejected. This indicates that the Cash Reserve Ratio does not have a significant impact on ROE. The lack of a significant relationship implies that liquidity, while crucial for ensuring financial stability and regulatory compliance, does not directly influence the returns that shareholders receive. This result suggests that factors such as profitability from core banking operations, cost management, and market conditions may be more directly related to shareholder returns than the amount of liquidity held by the bank.

H17: Impact of Credit Deposit Ratio on Return on Equity

The P-value for H17 is 0.006, which is less than 0.05, so the hypothesis is accepted. This finding suggests that the Credit Deposit Ratio has a significant positive impact on ROE. Higher lending relative to deposits is associated with higher returns on equity, reflecting the profitability potential of increased lending activity. However, this relationship must be viewed with caution, as aggressive lending strategies could also introduce higher risks. Banks need to balance lending volume with impassive risk management to ensure that the positive impact on ROE does not come at the cost of increased defaults or financial instability.

H18: Impact of Non-Performing Loan Ratio on Return on Equity

The P-value for H18 is 0.000, which is well below 0.05, indicating a highly significant negative impact of NPLR on ROE. This confirms that the presence of non-performing loans, which result in lost income and additional provisioning costs, significantly reduces returns for equity holders. This finding reinforces the importance of maintaining loan quality and minimizing defaults. Banks that are able to manage non-performing loans impassively will likely experience higher shareholder returns, while those with high levels of non-performing loans may face lower profitability and diminished returns on equity. This highlights the critical need for impassive credit risk management strategies to protect both asset and equity profitability.

4.5 Discussion

The findings of this study on the relationship between liquidity and profitability in development banks suggest a positive correlation between liquidity ratios (such as the current ratio, liquidity ratio, and cash ratio) and the profitability measures (return on assets and return on equity). Specifically, the study found that banks with higher liquidity ratios, such as those maintaining larger cash reserves and more liquid assets, tended to demonstrate stronger profitability indicators. This relationship is consistent with existing literature, where efficient liquidity management is often linked to improved financial performance. The analysis indicated that a well-balanced liquidity level not only ensures the bank's ability to meet short-term obligations but also enables it to capitalize on profitable investment opportunities.

In terms of the regression analysis, liquidity measures, particularly the current ratio and cash ratio, were found to have a statistically significant positive impact on profitability, suggesting that higher liquidity contributes to better profitability outcomes for Nepalese development banks. This result is in line with previous empirical findings that stress the importance of liquidity for operational efficiency and profitability (e.g., Mashhad, 2012; Muiruri, 2017). These studies, similar to the findings of the present research, show that liquidity levels are essential for ensuring that a bank can impassively manage both operational costs and investment opportunities, directly influencing profitability.

However, the findings also highlighted some divergences with other studies in the literature. For instance, Shahchera (2012) and Alshatti (2014) observed that while liquidity could provide a cushion against financial instability, excessive liquidity might negatively impact profitability. Shahchera (2012) argued that holding high levels of liquid assets, without impassively deploying them, could lead to missed investment opportunities, thus hindering profitability. Similarly, Alshatti (2014) cautioned that an overemphasis on liquidity could result in a lack of competitive investment options, diminishing potential returns. These concerns contrast with the results of the present study, where a positive correlation between liquidity and profitability was consistently observed.

Comparing with studies by Sthapit and Maharjan (2012) and Pradhan and Shrestha (2016), the findings of this study support the view that a moderate and consistent liquidity ratio contributes to profitability. Sthapit and Maharjan (2012) found that more stable liquidity ratios were associated with consistent financial performance in banks, a trend that was also

observed in this study. Banks that maintained a stable liquidity position over time showed more predictable profitability. This contrasts with the argument made by Shahchera (2012) about excessive liquidity, which could potentially reduce profitability in certain contexts. However, the current study did not identify such adverse impacts of liquidity, thus supporting the idea that stable and well-managed liquidity can enhance profitability without significant drawbacks.

Furthermore, the study's results show similarities with findings by Bwacha and Xi (2017) and Charmler et al. (2018), who identified a positive relationship between liquidity and profitability, particularly in developing markets. These studies concluded that banks with sufficient liquidity are better equipped to handle market fluctuations, lending opportunities, and short-term obligations, leading to improved profitability. The findings of the present study align with this view, suggesting that well-managed liquidity can serve as a tool for enhancing both profitability and financial stability.

However, the results in this study slightly diverge from the conclusions of Gopali (2019) and Oduro et al. (2019), who argued that excessive liquidity can be a double-edged sword, where it can exacerbate credit risks or limit growth opportunities. While the study observed a positive relationship between liquidity and profitability, it did not explore the potential trade-offs of excess liquidity in detail. Gopali (2019) pointed out that poorly managed liquidity could lead to inefficiencies, while Oduro et al. (2019) highlighted that banks with excessive liquidity might not take on sufficient risks, limiting growth potential. Thus, the study underlines the importance of not only having liquidity but also ensuring that it is strategically utilized to support sustainable growth and profitability.

In summary, the findings of this study generally align with empirical studies that suggest a positive relationship between liquidity and profitability. While there are differences in the literature regarding the potential negative impacts of excess liquidity, this study supports the notion that efficient liquidity management plays a crucial role in the financial performance of Nepalese development banks. It highlights the need for banks to strike a balance between maintaining sufficient liquidity to meet obligations and utilizing liquid assets impassively to capitalize on growth opportunities. The study thus contributes to the broader understanding of liquidity's role in banking profitability in the context of Nepalese development banks.

CHAPTER-V
SUMMARY AND CONCLUSION

5.1 Summary

This study investigates the impact of liquidity, capital adequacy, non-performing loans, and credit deposit ratio on the profitability of development banks in Nepal. The primary objective was to analyze the structure of these variables and their relationship with the profitability indicators, return on equity (ROE) and return on assets (ROA). Specifically, the study aimed to determine how capital adequacy ratio (CAR), cash reserve ratio (CRR), credit deposit ratio (CDR), and non-performing loan ratio (NPLR) influence the profitability of Nepalese development banks.

The research adopted a descriptive and correlational design, focusing on the top ten development banks in Nepal based on market capitalization, with data spanning from 2013/14 to 2022/23. The sample was selected using purposive sampling, ensuring that the banks chosen were significant contributors to the sector's performance. Secondary data were collected from reliable sources such as Nepal Rastra Bank, internet journals, and published theses. Both descriptive and inferential statistical tools, including regression and correlation analysis, were employed to examine the relationships between the variables.

The findings of the study revealed that capital adequacy ratio (CAR) and cash reserve ratio (CRR) exhibited a significant positive relationship with profitability (ROA and ROE), indicating that higher levels of capital and liquidity contribute to improved profitability. However, non-performing loan ratio (NPLR) showed a negative correlation with profitability, suggesting that an increase in non-performing loans leads to a decline in profitability. Similarly, the credit deposit ratio (CDR) was found to have a moderate impact on profitability, highlighting the importance of efficient credit management.

In conclusion, the study suggests that banks with stronger capital adequacy, higher liquidity, and impassive credit management tend to have better profitability outcomes. The negative impact of non-performing loans emphasizes the need for banks to manage loan portfolios impassively to minimize defaults. These findings provide valuable insights for development banks, regulatory authorities, and financial managers, aiding them in making informed decisions regarding capital and liquidity management to enhance profitability.

The implications of this study are significant for the development banking sector in Nepal. By focusing on improving capital adequacy, liquidity management, and minimizing non-performing loans, development banks can improve their profitability and financial stability. The study also underscores the importance of monitoring credit deposit ratios to ensure impassive loan disbursement, ultimately contributing to the growth and sustainability of Nepalese development banks.

5.2 Conclusion

The findings of this study indicate crucial implications for the financial performance of Nepalese development banks, specifically regarding capital adequacy ratio (CAR), liquidity (CRR) ratio, non-performing loan ratio (NPLR), and profitability indicators like return on equity (ROE) and return on assets (ROA). The positive relationship observed between CAR and CRR with profitability underlines the importance of maintaining sufficient capital buffers and robust liquidity management in ensuring the financial stability of banks. A higher CAR is associated with better solvency and lower risk, which enhances the bank's ability to withstand financial shocks, attracting investor confidence and contributing to sustained profitability. Similarly, a strong CRR ensures that banks maintain an adequate reserve to meet their short-term obligations, improving operational efficiency and reinforcing their financial stability. These factors collectively contribute to improved ROE and ROA, which are essential indicators of the bank's ability to generate profits relative to its equity and assets.

On the other hand, the negative relationship between NPLR and profitability signals a significant concern for Nepalese development banks. Non-performing loans, which represent loans that are unlikely to be repaid, exert a detrimental impact on both the banks' profitability and their overall financial health. A high NPLR leads to increased provisions for loan losses, which reduces net income and thus, profitability. Moreover, an elevated NPLR reflects potential inefficiencies in the banks' lending practices and credit risk management. Therefore, the findings suggest that banks should prioritize improving their asset quality by reducing NPLRs through more stringent credit assessment processes, better risk management practices, and impassive recovery strategies. By doing so, banks can mitigate the negative impact of bad loans and enhance their profitability and financial resilience.

The results further imply that for banks to optimize their profitability, they must balance the enhancement of capital adequacy and liquidity with diligent efforts to reduce non-performing loans. These findings emphasize the necessity for robust financial strategies that address both capital and asset quality to maintain profitability. Bank managers should focus on improving loan recovery processes, strengthening risk management frameworks, and ensuring compliance with regulatory capital adequacy requirements. Policymakers may also use these insights to support regulatory measures that encourage prudent lending practices, promote liquidity management, and ensure that banks hold adequate capital to absorb potential shocks. Overall, the study underscores that banks with strong financial fundamentals, including adequate capital, liquidity, and minimal bad loans, are better positioned to achieve sustained profitability and contribute to the broader financial system's stability and growth.

5.3 Implications

Practical Implications

The findings of this study offer several practical implications for Nepalese development banks. First, the positive relationship between capital adequacy ratio (CAR) and profitability suggests that banks should focus on strengthening their capital base to enhance financial stability. Banks that maintain sufficient capital buffers are more resilient to economic shocks and can absorb potential losses, which contributes to improved profitability. Additionally, the study emphasizes the importance of maintaining optimal liquidity through cash reserve ratio (CRR) management. Banks should ensure that they have adequate liquidity to meet short-term obligations, which helps in preventing liquidity crises and ensures smoother operations. Furthermore, the negative relationship between non-performing loan ratio (NPLR) and profitability highlights the need for banks to improve their asset quality by reducing NPLs. This can be achieved by enhancing credit risk assessment practices, increasing loan recovery efforts, and improving loan portfolio management. By addressing these practical aspects, development banks can improve their overall financial health and ensure sustained profitability.

Theoretical Implications

From a theoretical standpoint, this study contributes to the body of literature on financial management and performance evaluation in the banking sector. The results support the existing theory that capital adequacy and liquidity play a critical role in the profitability of

banks, reinforcing the view that financial stability is essential for sustained profitability. The findings also align with theories of risk management, particularly the relationship between asset quality (measured by NPLR) and profitability. By highlighting the negative impact of non-performing loans on financial performance, this study emphasizes the significance of efficient credit risk management in determining a bank's profitability. These theoretical implications can guide further research on the interplay between financial ratios, risk management, and profitability in the banking sector, especially in emerging markets like Nepal.

Future Research Scope

The scope for future research based on the findings of this study is broad and offers various avenues for exploration. Future studies can examine the long-term impact of changes in capital adequacy, liquidity management, and NPL on the profitability of banks in different contexts, especially in emerging economies. Researchers may also explore other variables that could affect the profitability of Nepalese development banks, such as macroeconomic factors, regulatory changes, or technological advancements in banking. Another potential area for future research is the application of more sophisticated econometric models, such as panel data analysis or time-series forecasting, to provide deeper insights into the dynamic relationships between these variables over time. Moreover, research could explore the impact of non-financial factors, such as governance practices, corporate social responsibility, and customer satisfaction, on bank profitability. Finally, comparative studies across different countries or banking sectors could help in understanding the generalizability of the findings and provide recommendations tailored to specific banking systems.

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APPENDIX

Year	Banks	CAR	ROA	ROE	CDR	NPLR	CRR
2013/14	MUKHTINATH	11.23	1.11	12.45	84.56	1.23	25.26
2014/15		12.25	1.12	13.68	81.56	2.36	24.56
2015/16		12.38	1.12	14.09	82.56	2.36	26.23
2016/17		13.89	1.24	15.28	83.33	1.26	27.56
2017/18		14.20	1.79	17.02	82.07	0.56	28.72
2018/19		13.44	1.65	18.61	82.61	0.07	25.88
2019/20		13.23	1.07	13.21	80.94	0.26	27.83
2020/21		11.19	1.14	14.15	82.76	0.23	24.07
2021/22		11.80	1.11	15.34	82.58	0.21	26.32
2022/23		11.77	0.95	12.89	81.89	0.98	25.67
2013/14	GARIMA	13.79	0.02	10.02	87.07	0.12	5.68
2014/15		15.63	0.02	10.57	86.55	0.29	5.42
2015/16		16.53	0.02	10.96	86.77	0.31	6.22
2016/17		24.99	0.02	11.27	89.51	0.24	6.22
2017/18		18.84	0.02	12.31	88.83	0.27	5.87
2018/19		14.44	1.53	13.87	85.83	0.20	4.06
2019/20		13.87	1.15	11.72	77.77	0.79	3.94
2020/21		11.43	1.15	12.41	82.04	0.72	3.46
2021/22		13.48	1.29	13.52	85.31	0.85	3.14
2022/23		13.69	1.42	14.34	82.89	1.70	4.17
2013/14	JYOTI	18.43	1.01	12.12	83.03	2.67	4.57
2014/15		17.05	1.39	14.87	80.02	1.98	5.28
2015/16		16.76	1.70	15.72	78.28	1.39	5.36
2016/17		30.60	1.73	16.98	86.90	0.96	5.35
2017/18		19.25	1.48	14.93	82.66	0.40	5.16
2018/19		16.27	1.46	15.34	88.84	0.54	4.32
2019/20		15.08	1.15	11.98	79.33	0.92	3.74
2020/21		13.04	1.11	12.87	83.49	0.84	3.10
2021/22		12.74	0.94	13.29	86.36	1.47	3.23
2022/23		12.96	0.41	10.13	82.20	3.43	4.03
2013/14	MAHALAXMI	15.80	-5.58	-9.23	79.25	16.18	6.73
2014/15		13.04	1.47	11.12	77.87	8.33	13.93
2015/16		12.67	2.69	14.67	80.73	4.10	11.05
2016/17		16.86	2.51	16.23	82.44	3.91	6.28
2017/18		18.1	1.59	12.14	79.41	3.92	5.09
2018/19		17.22	1.73	15.79	84.48	2.59	4.07
2019/20		13.41	1.39	12.32	81.33	3.21	5.22
2020/21		13.52	1.55	14.32	89.03	2.80	4.29
2021/22		11.65	1.65	15.21	88.99	2.43	3.42
2022/23		12.99	0.61	11.41	79.42	3.51	4.29
2013/14	KAMANA	13.76	2.09	13.86	85.74	0.17	5.56
2014/15		17.35	0.02	10.98	78.12	0.07	5.30
2015/16		14.25	1.32	13.46	86.64	1.03	8.71
2016/17		12.76	2.14	16.78	87.53	1.39	7.30
2017/18		21.58	1.56	14.89	85.35	1.13	5.24
2018/19		16.81	1.07	12.47	94.67	0.97	5.21
2019/20		14.00	0.33	10.32	81.60	1.79	23.79
2020/21		13.93	1.17	13.28	87.26	1.61	22.10
2021/22		12.13	0.99	14.12	87.34	2.31	23.99
2022/23		24.49	0.58	10.34	82.62	3.09	24.49
2013/14	SHINE	14.87	2.83	14.95	87.68	0.38	4.77
2014/15		15.69	2.52	15.65	84.24	0.93	5.28
2015/16		15.45	2.73	16.32	86.91	0.31	5.30
2016/17		16.57	2.92	16.94	85.58	0.22	5.81
2017/18		14.04	1.97	14.31	83.39	0.07	5.44

2018/19		13.32	1.95	14.65	85.38	0.11	4.63
2019/20		15.61	1.21	12.03	81.19	1.10	4.19
2020/21		15.77	1.19	12.98	89.01	1.27	5.65
2021/22		14.36	1.28	13.85	87.54	1.14	3.26
2022/23		13.29	1.20	11.56	81.47	1.81	4.04
2013/14	LUMBINI	13.28	2.40	8.51	70.80	9.74	4.70
2014/15		13.93	2.89	15.52	72.96	2.51	4.00
2015/16		13.83	2.12	14.15	72.96	0.79	5.10
2016/17		16.07	0.82	11.02	98.57	3.79	5.31
2017/18		17.18	1.22	13.21	99.22	3.34	4.38
2018/19		16.54	2.07	15.65	103.97	1.64	4.05
2019/20		14.20	1.10	11.43	86.95	2.69	4.38
2020/21		13.26	0.98	10.92	86.84	2.17	3.45
2021/22		11.72	1.12	12.12	89.31	1.70	3.19
2022/23		12.85	0.85	9.98	88.75	3.36	4.03
2013/14	SANGRILA	13.89	0.99	10.8	80.76	0.68	32.83
2014/15		13.21	1.94	14.92	81.60	0.60	31.24
2015/16		12.71	1.80	15.89	88.34	0.65	25.75
2016/17		14.89	2.17	17.23	84.10	0.60	29.76
2017/18		19.02	1.48	13.98	82.41	1.62	31.21
2018/19		16.66	1.44	12.83	86.11	0.80	20.86
2019/20		13.62	0.58	10.12	81.58	1.13	27.30
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2021/22		11.59	0.88	11.98	83.28	1.39	25.36
2022/23		12.41	0.46	8.12	80.15	3.16	27.26
2013/14	EXCEL	11.39	1.96	8.85	66.24	1.88	1.18
2014/15		11.42	2.13	11.26	72.35	1.61	1.10
2015/16		11.80	2.38	13.92	87.57	1.09	1.09
2016/17		12.81	2.82	14.76	82.70	1.02	1.03
2017/18		19.23	2.61	12.45	81.57	0.62	32.00
2018/19		13.50	1.96	11.98	85.63	0.62	23.00
2019/20		13.67	0.91	9.87	77.00	2.79	30.27
2020/21		12.26	1.00	10.21	83.87	3.77	26.98
2021/22		12.19	0.67	11.45	89.22	2.85	24.90
2022/23		11.76	0.32	7.76	79.53	4.86	31.76
2013/14	SINDHU	15.77	1.09	9.12	70.00	1.97	3.63
2014/15		15.10	1.42	10.34	65.47	1.63	1.27
2015/16		14.87	1.98	11.87	76.43	1.18	3.84
2016/17		19.49	1.62	13.65	74.74	0.84	4.44
2017/18		27.69	0.52	10.34	70.44	2.92	5.40
2018/19		25.66	1.25	11.24	77.43	1.61	4.72
2019/20		22.67	0.29	9.34	76.43	1.96	4.49
2020/21		13.46	-0.21	8.89	85.56	2.80	3.98
2021/22		12.72	0.83	9.67	83.45	1.60	2.70
2022/23		13.43	0.93	8.79	86.52	2.80	2.50

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i ABSTRACT This study investigates the impact of capital adequacy ratio (CAR), credit deposit ratio (CDR), non-performing loan ratio (NPLR), and liquidity (cash reserve ratio, CRR) on the profitability of Nepalese development banks, measured through return on equity (ROE) and return on assets (ROA). The primary objectives include analyzing the patterns of these variables, examining their relationships with profitability, and assessing their impacts on bank performance. Using a descriptive and correlational research design, the study incorporates data from ten development banks with the highest market capitalization, covering the fiscal years 2013/14 to 2022/23. Data analysis employed descriptive statistics, correlation analysis, and multiple regression models. Findings reveal that CAR positively influences profitability, highlighting the critical role of capital adequacy in sustaining financial stability and performance. Conversely, NPLR exhibits a negative impact, indicating that poor asset quality and high levels of non-performing loans erode profitability. CDR demonstrates mixed impacts, emphasizing the importance of maintaining an optimal balance between loans and deposits. Liquidity, as measured by CRR, has a significant but varied relationship with profitability, underscoring the need for impassive liquidity management. The implications are threefold. Practically, banks should focus on enhancing their capital base, reducing non-performing loans, and optimizing liquidity management to sustain profitability. Theoretically, the study reinforces existing