IMPACT OF LIQUIDITY ON PROFITABILITY OF DEVELOPMENT BANKS IN NEPAL

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

By

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CERTIFICATE OF AUTHORSHIP

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

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REPORT OF RESEARCH COMMITTEE

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ABBREVIATIONS

A.M.	Arithmetic Mean
C.V	Coefficient of Variation
CA	Current Assets
CADR	Cash deposit Ratio
CATAR	Current assets to total Assets ratio
CDR	Credit Deposit Ratio
CHTDR	Cash in hand to total deposit Ratio
CL	Current Liabilities
CR	Current Ratio
CRR	Cash reserve Ratio
F/Y	Fiscal Year
GBBL	Garima Bikas bank limited
JBBL	Jyoti Bikas Bank Limited
KSBBL	Kamana Sewa Bikas Bank of India
LACLR	Liquid assets to Current Liabilities ratio
LADR	Loan and advance to total Deposit ratio
MBBL	Mahalximi Bikas bank limited
MNBBL	Muktinath Bikas Bank Limited
NPAT	Net Profit after Tax
NRB	Nepal Rastra Bank
NRBTDR	NRB balance to Total deposit ratio
ROA	Return on Assets
ROE	Return on Equity
S.D.	Standard Deviation
TA	Total Assets
TD	Total Deposit

ABSTRACT

Bank development and survival depend heavily on their capacity to manage liquidity and profitability, and managing the trade-off between the two is a critical skill. The most important factor influencing banks' profitability is liquidity. The effect of liquidity on the profitability of development banks in Nepal has been examined in this study. The primary goal was to investigate and assess the profitability status, liquidity situation, and correlation between profitability and liquidity in Nepalese development banks. A descriptive research approach has been used to achieve this goal. Secondary data from the annual report statements of the Nepalese development banks and NRB was gathered and used. Data taken from the companies' annual reports and accounts for the relevant period served as the basis for the analysis. The relationship between liquidity and profitability was investigated using regression analysis and correlation. The profitability status was measured using the ROA and ROE, and the liquidity situation was measured using the CHTDR, LADR, NRBTDR, LACLR, and CATAR. The study looked at five Nepalese development banks throughout the course of the last ten fiscal years, from 2012/13 to 2021/22, namely MNBBL, JBBL, GBBL, MBBL, and KSBBL bank limited. The research findings indicate that there is a negative correlation and a negligible association between the LADR and ROE, but not with ROA. However, there is little correlation between ROA and ROE and CHTDR, NRBTDR, LACLR, and CATAR. The results showed that, across the time, there was a positive and significant association between profitability and liquidity among the Nepalese development banks. Nonetheless, a study on the chosen banks served as the foundation for this paper's conclusions. As a result, the findings demonstrate that ADBL and NABIL have strong positions in terms of profitability and liquidity. The findings therefore apply to the banking industry.

Key Words: *Liquidity (CHTDR, NRBTDR, LADR, LACLR and CATAR), Profitability (ROA and ROE) and Nepalese development banks*

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Banks act as a middleman between investors in need of capital to participate in a variety of industries and depositors with excess funds. Banks want to lend money to people who need it and those who have more. Liquidity is the capacity of banks to meet short-term obligations for regular business operations on demand. Development banks are perceived as being low-risk and financially secure due to their substantial cash reserves (Mustafa, 2019). One of the most important measures of a bank's financial performance is its profitability. While sizable profits seem to be recorded in books of account, it was found that certain banks do not maintain enough levels of cash to conduct routine business and fulfil contractual obligations. Banks' profitability is directly impacted when they have more cash on hand than they require since they lose out on opportunities for future lending and investment, which results in lost revenue. For the bank to be viable over the long run, liquidity and profitability must be kept in balance (Mustafa, 2019).

The capacity to immediately satisfy financial obligations is referred to as liquidity. There are two main definitions of liquidity management. The first is the capacity to trade different kinds of assets at current market value. Financial organizations also use the ability to meet cash and collateral obligations without suffering a substantial loss (Shrestha, 2012). Liquidity risk is attempted to be minimized by capable managers, which results in organizational liquidity management. Banks employ a liquidity measurement ratio to evaluate liquidity risk based on financial statements. Comparing liquid assets with current liabilities is the most popular approach (Khan, 2011).

The relationship between cash resources and the expansion of other resources that will be quickly changed over into cash, as well as installment to anticipated current liabilities, decides the organization's liquidity pointer. The company's two counter components are venture and liquidity. More ventures are made in arrange to create more cash, which may result in a lower level of liquidity, which may result in various sorts of misfortune punishments. Within the case of banks, cash is accessible by means of request stores and term stores gotten specifically from

the open, educate, and businesses (Ahmed, 2012). In advancement banks, liquidity alludes to the capacity to meet a short-term monetary commitment. At the time of contract development, the temporary worker must pay the stores for its commitments, which incorporate borrowing, speculations, withdrawal of stores, and exceptional liabilities (Mutahhar, 2016).

Liquidity refers to the capacity to invest in growing assets while also fulfilling short-term obligations without unexpected losses (Olagunju, 2011). Effective liquidity management is crucial for the seamless functioning of a business, ensuring the availability of cash or readily convertible assets to meet current liabilities. It revolves around cash flow, with the balance between current assets and liabilities defining liquidity. Inadequate liquidity management can jeopardize a firm's financial health, leading to solvency risks (Cucinelli, 2013).

The profitability of the business dictates its level of efficiency. Stated differently, it is an indicator of the organization's operational and financial strength. An organization's efficiency is based on its financial performance. To put it briefly, an organization's ability to make money from its operations determines its profitability (Owolabi, 2012).

Profitability serves as a measure of a company's effectiveness (Khan & Jain, 1998) and acts as a gauge for its earning capacity and operational efficiency. According to Weston and Copland (1998), profitability results from numerous policies and decisions. Ratios are employed to assess profitability, offering insights into the management of a company's financial performance. Consequently, profitability holds significance for management, creditors, and owners alike (Pandey, 1995).

In the corporate realm, both liquidity and profitability hold paramount importance. Liquidity management involves overseeing a company's current assets and short-term liabilities, crucial for assessing its ability to fulfill immediate obligations efficiently. Maintaining a reasonable cash reserve is essential to meet short-term commitments. Optimal liquidity levels are vital for a firm's effectiveness and profitability, necessitating a careful balance. Achieving high profitability requires identifying the right liquidity level, avoiding extremes of excess or deficiency. Profitability, on the other hand, denotes the balance between a company's earnings and expenditures. Profitability ratios offer clarity on a firm's profitability status, aiding in gauging its overall financial health. Every company aspires to enhance profitability, aiming for

an appropriate level. Given the strong correlation between liquidity and profitability, it's imperative for a company to uphold a sufficient liquidity level (Khan & Ali, 2016).

Bordereau and Graham (2010) examined the relationship between bank profitability and liquidity in a sample of major US and Canadian banks. Banks (in the US and Canada) that hold more fast assets have seen an increase in profitability; nevertheless, there is a tipping point beyond which holding more fast assets lowers a bank's profitability, all other things being equal. The study also found that the association varies according to the bank's business model and the status of the economy.

Profitability and liquidity are related to the capacity to keep working capital at an ideal level. The idea is to attain a liquidity level that offers a pleasant equilibrium between profitability and liquidity; in other words, the working capital investment made by the company needs to be sufficient. It makes sense to draw the conclusion that the two are never happy with each other. This isn't always the case, though. It is not impossible for there to be a linear, but non-continuous, link between liquidity and profitability that corresponds to a firm's holding of current assets up to a particular level (Bhunia, Khan & Mukhuti, 2012).

1.2 Problem Statement

The impact of liquidity on the profitability of development banks in Nepal presents a multifaceted challenge that requires comprehensive analysis and strategic solutions. One of the primary issues stems from the need for development banks to maintain sufficient liquidity levels to meet short-term obligations while also striving to maximize profitability. However, striking the right balance between liquidity and profitability is often intricate, particularly in the context of Nepal's banking sector. One of the prominent problems related to liquidity management in Nepalese development banks is the tendency towards either excessive or insufficient liquidity. Excessive liquidity can hamper profitability as idle funds yield minimal returns, thereby diminishing the bank's overall performance. Conversely, insufficient liquidity poses significant risks to the bank's financial stability, potentially leading to liquidity crises, forced asset liquidations, and reputational damage. Finding the optimal liquidity level that ensures financial stability while also maximizing profitability is a persistent challenge faced by development banks in Nepal.

Moreover, the effectiveness of liquidity management practices in Nepalese development banks is often hindered by structural inefficiencies and regulatory constraints. The lack of robust risk management frameworks and sophisticated liquidity management tools further complicates the task of aligning liquidity management strategies with profitability objectives. Additionally, the prevalence of traditional banking practices and limited access to alternative sources of funding exacerbate liquidity challenges, particularly during periods of economic volatility or unforeseen shocks.

Furthermore, the impact of liquidity on profitability is intertwined with broader macroeconomic factors and regulatory dynamics in Nepal. Fluctuations in interest rates, inflation, and exchange rates can significantly influence the liquidity position of development banks and, consequently, their profitability. Moreover, evolving regulatory requirements, such as capital adequacy ratios and liquidity coverage ratios, impose additional constraints on liquidity management practices, shaping the nexus between liquidity and profitability for Nepalese development banks. Addressing the challenges related to the impact of liquidity on profitability requires a holistic approach encompassing regulatory reforms, technological innovations, and capacity-building initiatives. Strengthening risk management frameworks, enhancing liquidity risk modeling capabilities, and promoting greater transparency and disclosure practices can contribute to more effective liquidity management and improved profitability outcomes for development banks in Nepal. Additionally, fostering a culture of innovation and digital transformation can enable development banks to diversify funding sources, optimize asset-liability management, and mitigate liquidity risks in a dynamic operating environment.

According to Rose (1999), banks must possess readily available cash at reasonable costs precisely when needed to mitigate liquidity risks on both the asset and liability sides. Insufficient or excessive liquidity levels in development banks raise concerns about their financial stability. Excess liquidity diminishes profitability by reducing asset returns, while inadequate liquidity jeopardizes creditworthiness, leading to asset liquidation and reputational damage. Therefore, development banks must strike a balance between profitability and liquidity risk. Weaknesses and inefficiencies in financial statement analysis undermine a bank's financial performance. Fluctuating cash and bank balances alongside increasing deposits

indicate deficiencies in liquidity management. Consequently, the study poses research questions to address these issues. For this study, the following research questions have been established.

i. What is the liquidity and profitability position in Nepalese development banks?
ii. Does any relationship between liquidity and profitability status in Nepalese development banks?
iii. Does any impact of liquidity on profitability in Nepalese development banks?

1.3 Objectives of the Study

The primary aim is to evaluate how liquidity influences the profitability of the development bank of Nepal. In addition to this overarching goal, the study has specific objectives, which include:

i. To evaluate the liquidity position of Nepalese development banks.
ii. To examine the profitability position of Nepalese development banks.
iii. To examine relationship between liquidity and profitability of Nepalese development banks.

1.4 Rationale of the Study

In the business world, "investment" and "return" are interchangeable terms. This area has also been connected to the profitability and liquidity of a business. Effective management of a company's short-term assets and liabilities should be a top priority for its long-term survival. A company's profitability is the amount of money it makes from its operations after subtracting its incurred expenses. One of the most significant players in the business world is the banking industry, which boosts the nation's financial sector and creates jobs. In this context, it is crucial to comprehend how liquidity affects profitability. Businesses are just as good as their liquidity and profitability. Companies that have actual liquidity positions tend to get greater attention from investors. Therefore, researching the impact of liquidity on profitability from the investor's perspective is critical (Shrestha & Jha, 2020).

This study will be helpful to academics, learners, instructors, investors, and professionals in the accounting and finance fields. This research will help consumers, depositors, debtors, stock exchanges, financial agencies, and shareholders by enabling them to objectively determine the best institutions to engage with.

The rationale behind investigating the impact of liquidity on the profitability of development banks in Nepal is rooted in the critical role these institutions play in the country's financial landscape. Development banks serve as vital sources of funding for various sectors, particularly small and medium-sized enterprises (SMEs) and rural communities, contributing to economic growth and poverty alleviation efforts. However, the effective functioning of these banks hinges on their ability to manage liquidity effectively while also ensuring sustainable profitability. Given the unique challenges and dynamics of Nepal's banking sector, understanding the relationship between liquidity and profitability is essential for informing strategic decision-making, risk management practices, and regulatory reforms. By identifying the factors that influence liquidity management and profitability outcomes, this study seeks to provide valuable insights that can help enhance the resilience and stability of development banks in Nepal, ultimately contributing to the broader socioeconomic development objectives of the country.

1.5 Limitations of the Study

Conducting this study is essential for fulfilling the requirements of an MBS degree, yet it acknowledges the challenge of accessing reliable data within the context of Nepal. Like any research endeavor, this study faces limitations stemming from various factors such as institutional constraints, time limitations, data reliability, statistical tools, and variances. These limitations directly impact the exploration of the relationship between liquidity and profitability positions of development banks.

i. The study is based on secondary data.
ii. The study has covered only ten years i.e from 2012/13 to 2021/2022.
iii. Normally test is not conducted
iv. The study has deal with only few factors such as CHTDR, LACLR, NRBTDR, LADR, CATAR, ROA and ROE related to liquidity and profitability as there are numerous factors and issues for analysis.

v. This study has covered only five development banks for the purpose of analysis out of 17 development banks in Nepal analysis which may not truly represent the characteristics of entire Nepalese development banking industry.

vi. Only limited statistical and financial tools, including simple average, standard deviation and coefficient of variation, profitability ratio (i.e ROA and ROE) and other liquidity ratios, multiple correlation as well as multiple regression models were used for data analysis. Not using more scientific and sophisticated tools could limit the validity of the study findings.

CHAPTER II
REVIEW OF LITERATURE

The review of literature in this study encompasses a comprehensive exploration of existing research, theories, and empirical findings related to liquidity and profitability analysis within the domain of development banks. Scholars have extensively investigated various factors influencing the liquidity position and profitability performance of these financial institutions. Studies have examined the impact of macroeconomic indicators, regulatory frameworks, and internal management practices on liquidity management and profit generation. Additionally, researchers have explored the interplay between liquidity and profitability, analyzing how changes in liquidity levels affect the overall financial health and sustainability of development banks. Furthermore, empirical studies have employed diverse methodologies, including quantitative analysis, case studies, and econometric modeling, to assess liquidity and profitability dynamics in different contexts, providing valuable insights for practitioners, policymakers, and scholars alike. Through a synthesis of these scholarly contributions, this study aims to contribute to the existing literature by offering a deeper understanding of the complex relationship between liquidity and profitability in the context of development banks, thereby informing strategic decision-making and risk management practices in the financial sector.

2.1 Conceptual Review

Development banks aim to effectively manage liquidity to ensure the financial soundness of their operations. Shipho (2011) highlights the importance of employing various measurement criteria to mitigate risks associated with poorly managed liquidity positions. Despite the existence of multiple methods, financial institutions employ diverse approaches in managing liquidity risk. Khokhar (2015) emphasizes the adoption of efficient liquidity management theories to achieve balanced performance within organizations. These theories aid in averting liquidity shortages and enable the monitoring of liquid assets with appropriate safety measures. Banks act as a middleman between investors in need of capital to participate in a variety of industries and depositors with excess funds. Banks want to lend money to people who need it and those who have more. Liquidity is the capacity of banks to meet short-term obligations for

regular business operations on demand. Development banks are perceived as being low-risk and financially secure due to their substantial cash reserves (Mustafa, 2019). One of the most important measures of a bank's financial performance is its profitability. While sizable profits seem to be recorded in books of account, it was found that certain banks do not maintain enough levels of cash to conduct routine business and fulfil contractual obligations. Banks' profitability is directly impacted when they have more cash on hand than they require since they lose out on opportunities for future lending and investment, which results in lost revenue. For the bank to be viable over the long run, liquidity and profitability must be kept in balance (Mustafa, 2019).

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2.2 Theoretical Review

The theoretical review in this study delves into the conceptual underpinnings and frameworks relevant to liquidity management in development banks. Scholars have proposed various theories to elucidate the complexities of liquidity management and its implications for financial institutions. One prominent theoretical framework is the cash flow matching theory, which advocates for aligning the maturity profile of assets and liabilities to minimize liquidity risk. Another theory, the liquidity preference theory, posits that individuals and institutions prefer holding liquid assets over less liquid ones due to the uncertainty surrounding future cash needs. Additionally, the agency theory offers insights into the potential conflicts of interest between different stakeholders in liquidity management, emphasizing the importance of effective governance mechanisms. By drawing upon these and other theoretical perspectives, this study aims to provide a comprehensive understanding of the theoretical foundations guiding liquidity management practices in development banks, thereby informing strategic decision-making and risk management efforts in the financial sector.

2.2.1 The Liquidity Preference Theory

The Liquidity Preference Theory, proposed by John Maynard Keynes in his seminal work "The General Theory of Employment, Interest, and Money" in 1936, serves as a cornerstone in understanding individuals' and institutions' preferences for holding liquid assets. At its core, this theory posits that economic agents exhibit a preference for liquidity due to the inherent uncertainty surrounding future cash needs (Keynes, 1936). Liquidity, in this context, refers to the ease with which assets can be converted into cash without significant loss of value. According to Keynes, the motivation for holding liquid assets arises from the desire to address

three principal sources of uncertainty: the transaction motive, the precautionary motive, and the speculative motive.

The transaction motive pertains to the need for cash to facilitate day-to-day transactions, such as purchasing goods and services or meeting financial obligations (Keynes, 1936). Individuals and businesses maintain liquidity reserves to ensure smooth and efficient transactional activity, thereby avoiding disruptions or delays that may arise from insufficient cash on hand. For banks, liquidity is crucial for funding daily operations, including processing customer withdrawals, settling interbank transactions, and meeting reserve requirements mandated by regulatory authorities. The precautionary motive for holding liquid assets stems from the desire to hedge against unforeseen contingencies or emergencies (Keynes, 1936). Economic agents recognize the inherent uncertainty surrounding future income streams, expenses, and unforeseen events such as job loss, illness, or economic downturns. To mitigate the potential adverse effects of such uncertainties, individuals and institutions maintain liquidity buffers to cover unexpected expenses or income shortfalls. For banks, maintaining liquidity reserves serves as a safeguard against deposit withdrawals, loan defaults, or unexpected liquidity shocks that may arise from changes in market conditions or adverse economic developments.

The speculative motive for holding liquid assets relates to the desire to exploit potential opportunities for capital gains or arbitrage in financial markets (Keynes, 1936). According to Keynes, economic agents may hold liquid assets not only for transactional and precautionary purposes but also as a means of capitalizing on fluctuations in asset prices. For example, investors may hold cash or liquid securities during periods of market volatility or uncertainty, with the intention of deploying capital opportunistically when asset prices are perceived to be undervalued. Similarly, banks may maintain liquidity reserves to capitalize on investment opportunities that arise from market dislocations, credit market disruptions, or changes in monetary policy.

In summary, the Liquidity Preference Theory provides a comprehensive framework for understanding the motivations behind individuals' and institutions' preferences for holding liquid assets (Keynes, 1936). By encompassing the transaction, precautionary, and speculative motives for liquidity, this theory elucidates the fundamental role of liquidity in facilitating economic transactions, mitigating uncertainty, and capitalizing on investment opportunities.

For banks, liquidity management based on the principles of the Liquidity Preference Theory is essential for ensuring financial stability, supporting economic growth, and fulfilling their role as key intermediaries in the financial system.

2.2.2 Agency Theory

Agency Theory, a fundamental concept in organizational economics, elucidates the principal-agent relationship and the associated conflicts of interest between different stakeholders within organizations. Proposed by Jensen and Meckling in 1976, Agency Theory provides a framework for understanding how the interests of principals (such as shareholders or owners) may misalign with those of agents (such as managers or executives) entrusted with decision-making authority (Jensen & Meckling, 1976). In the context of financial institutions, Agency Theory offers valuable insights into the dynamics between bank shareholders, management teams, regulators, and other stakeholders. The theory posits that agents may pursue their self-interests at the expense of the principal's objectives, leading to agency costs and potential wealth transfers from shareholders to managers (Jensen & Meckling, 1976).

Within the banking sector, Agency Theory sheds light on various conflicts of interest that may arise in liquidity management and other strategic decisions. For instance, bank managers may prioritize short-term profitability or personal incentives over long-term financial stability, leading to excessive risk-taking or underinvestment in liquidity buffers (Mehran & Rosen, 2019). Regulatory requirements and market pressures may further exacerbate these conflicts, as managers seek to balance the interests of shareholders, regulators, and other stakeholders (Bebchuk & Fried, 2003). Moreover, asymmetric information between principals and agents may complicate governance and oversight mechanisms, making it challenging for shareholders to monitor and incentivize desirable managerial behavior (Jensen & Meckling, 1976).

Effective governance mechanisms are essential for aligning the interests of principals and agents and mitigating agency costs in financial institutions. Board oversight, executive compensation structures, risk management frameworks, and disclosure requirements are among the mechanisms used to monitor and incentivize managerial behavior in line with shareholder interests (Bebchuk & Fried, 2003). Additionally, market discipline, competition, and regulatory supervision play critical roles in disciplining agency behavior and promoting transparency and accountability within the banking sector (Mehran & Rosen, 2019). By

addressing agency conflicts and enhancing governance mechanisms, financial institutions can foster trust, mitigate risks, and enhance long-term shareholder value (Jensen & Meckling, 1976).

In summary, Agency Theory provides a comprehensive framework for understanding the complexities of the principal-agent relationship in financial institutions and the associated challenges in liquidity management and decision-making (Jensen & Meckling, 1976). By recognizing and addressing agency conflicts through effective governance mechanisms and regulatory oversight, banks can enhance transparency, accountability, and alignment of interests, ultimately contributing to financial stability and shareholder wealth maximization.

2.2.3 The Pecking Order Theory

The Pecking Order Theory, proposed by Myers and Majluf in 1984, offers valuable insights into the financing decisions of firms and the hierarchy of preferred sources of funding. This theory posits that firms have a preferred order of financing, with internal funds being the most preferred, followed by debt, and finally equity issuance (Myers & Majluf, 1984). The rationale behind this pecking order stems from asymmetric information between managers and investors, where managers possess better information about the firm's prospects than external investors. As a result, firms may prefer to use internal funds, such as retained earnings, to finance investment opportunities, as they signal positive prospects and minimize information asymmetry (Myers & Majluf, 1984).

In the context of financial institutions, the Pecking Order Theory sheds light on the financing decisions and liquidity management practices of banks. Banks rely heavily on internal sources of funds, including customer deposits and retained earnings, to finance their lending activities and operational expenses (Myers & Majluf, 1984). Internal funds are preferred due to their low cost and flexibility, as they do not involve additional borrowing costs or dilution of ownership. Moreover, internal funds provide a stable source of financing, allowing banks to maintain liquidity reserves and weather adverse economic conditions without resorting to external financing (Myers & Majluf, 1984).

Debt financing represents the next level in the pecking order for financial institutions. Banks may utilize debt instruments such as interbank borrowing, commercial paper issuance, or bond

issuance to supplement their internal funds and meet liquidity needs (Myers & Majluf, 1984). Debt financing offers advantages such as tax deductibility of interest expenses and fixed repayment schedules, making it an attractive option for banks seeking to optimize their capital structure and liquidity position (Myers & Majluf, 1984).

Equity issuance is considered the least preferred source of financing for banks under the Pecking Order Theory. Equity issuance involves dilution of ownership and may signal adverse information to investors, leading to stock price declines and increased financing costs (Myers & Majluf, 1984). Consequently, banks typically resort to equity issuance as a last resort when internal funds and debt financing options are insufficient to meet liquidity needs or capitalize on growth opportunities (Myers & Majluf, 1984).

In summary, the Pecking Order Theory provides a valuable framework for understanding the financing decisions and liquidity management practices of financial institutions, including banks (Myers & Majluf, 1984). By recognizing the preferred order of financing and the rationale behind it, banks can optimize their capital structure, minimize financing costs, and maintain adequate liquidity reserves to support their lending activities and ensure financial stability in the face of changing market conditions.

2.2.4 The Dynamic Trade-off Theory

The Dynamic Trade-off Theory, developed by Frankel and Lee in 1998, offers a nuanced perspective on the interplay between liquidity management and profitability over time. Unlike static theories that assume a fixed trade-off between liquidity and profitability, the Dynamic Trade-off Theory acknowledges that this relationship is dynamic and influenced by changing economic conditions, market factors, and institutional characteristics (Frankel & Lee, 1998). At its core, this theory suggests that financial institutions face a trade-off between liquidity and profitability, with the optimal balance shifting over time in response to evolving internal and external factors. One of the key insights of the Dynamic Trade-off Theory is that liquidity and profitability considerations are interdependent and subject to trade-offs across different time horizons. During periods of economic expansion and favorable market conditions, financial institutions may prioritize profitability by deploying capital into higher-yielding assets or expanding lending activities (Frankel & Lee, 1998). However, as economic conditions deteriorate or market volatility increases, banks may shift their focus towards liquidity

preservation to ensure solvency and stability (Frankel & Lee, 1998). This dynamic adjustment reflects the changing risk-return trade-offs faced by financial institutions and underscores the importance of adaptability and flexibility in liquidity management strategies.

Moreover, the Dynamic Trade-off Theory recognizes the influence of regulatory requirements, market dynamics, and institutional factors on the liquidity-profitability trade-off. Regulatory constraints, such as capital adequacy ratios and liquidity coverage ratios, impose limits on banks' ability to pursue profitability at the expense of liquidity (Frankel & Lee, 1998). Market conditions, including interest rate fluctuations, credit market disruptions, and changes in investor sentiment, can also impact banks' liquidity positions and profitability prospects (Frankel & Lee, 1998). Additionally, institutional factors such as funding structure, asset composition, and risk management practices shape banks' liquidity management strategies and their ability to strike a balance between liquidity and profitability (Frankel & Lee, 1998).

By recognizing the dynamic nature of the liquidity-profitability trade-off, financial institutions can develop robust liquidity management frameworks that are responsive to changing market conditions and regulatory requirements. This entails adopting flexible liquidity buffers, stress testing methodologies, and scenario analyses to assess the potential impact of adverse events on liquidity and profitability (Frankel & Lee, 1998). Moreover, enhancing risk management practices, including asset-liability management techniques, liquidity risk modeling, and contingency planning, can help banks navigate the complexities of the dynamic trade-off between liquidity and profitability (Frankel & Lee, 1998). Overall, the Dynamic Trade-off Theory provides a valuable framework for understanding the evolving nature of liquidity management in financial institutions and guiding strategic decision-making to optimize the balance between liquidity and profitability over time.

2.3 Empirical Review

The empirical review of liquidity and profitability in development banks encompasses a range of quantitative analyses, case studies, and econometric modeling. Researchers have examined the relationship between liquidity metrics such as current ratio, quick ratio, and cash ratio, and profitability indicators such as return on assets (ROA) and return on equity (ROE). Studies have also investigated the impact of liquidity management strategies, regulatory compliance, and market conditions on the financial performance of development banks. By analyzing large

datasets, conducting regression analyses, and employing robust statistical methods, researchers have provided empirical evidence to inform liquidity management practices and enhance profitability in development banks. Additionally, case studies and qualitative research have offered insights into real-world challenges and best practices in liquidity management, contributing to the empirical understanding of liquidity-profitability dynamics in the context of development banks.

2.3.1 Empirical Review of Journal and Articles

Sthapit and Maharjan (2012) conducted to shows the relationship between liquidity and profitability of NABIL and SCBN while in conducting day to day operations. To accomplish the study's purpose, data were collected between 2003/04 and 2010/11. Given that liquidity management can boost profitability, the study analyzed their liquidity management as profitability positions using a variety of financial techniques and metrics. It was discovered that the trend of average liquidity ratios and profitability of both banks does not appear to be altering, but the average fluctuation in liquidity ratios and profitability of SCBN is less than that of NABIL. The study concluded that LFTDR and NRBTDR had a negative significant influence on SCBN ROA, while CHTDR has a favorable significant effect. However, liquidity ratios do not have a substantial impact on NABIL profitability. As a result, SCBN outperforms NABIL in terms of liquidity.

Ibe (2013) conducted study to find solution to liquidity management problem in Nigerian banking industry. Three institutions were selected at random to represent the whole Nigerian banking industry. Cash, short-term funds, bank balances, treasury bills, and certificates are used as proxies for liquidity management, whereas net profit after tax is used to represent profitability. The Elliot Rothenberg Stock stationary test model was utilized to assess the run connection of the variables under consideration, while regression analysis was employed to test the hypothesis. The findings of this study demonstrate that liquidity management is a critical issue in the Nigerian banking system. As a result, the study suggests that banks hire competent and qualified individuals to ensure that the proper judgments are made, particularly with the ideal amount of liquidity, while also maximizing profit.

Chukwunweike (2014) conducted study on the impact of liquidity on profitability of Some Selected Companies. The liquidity ratio is used to assess a firm's capacity to meet its short-term maturing obligations. The higher the ratio, the wider the margin of safety for short-term creditors. While profitability ratios are concerned with a company's relative profitability and the efficiency with which its resources are utilized. Thus, this study aims to determine the following: The correlation between current ratio and profitability, as measured by return on assets (ROA); the correlation between acid-test ratio and profitability, as measured by return on assets (ROA); and the correlation between return on capital employed and profitability, as measured by return on assets (ROA). This study uses a quantitative research design. The population comprises of publicly traded firms from the industrial/domestic products industry. The sample technique used was the non-probability sampling technique of four selected organizations. The study's data came from secondary sources, including the selected companies' annual reports and accounts. A simple correlation analysis was done to evaluate the hypothesis at a 10% level of significance. Overall, the study's findings show that there is a significant positive correlation between the current ratio and profitability, no definite significant correlation between the quick ratio and profitability, and no significant positive correlation between the return on capital employed and profitability. The researcher proposes that business entities avoid pursuing extreme liquidity strategies at the expense of profitability, instead striking a balance between the two-performance metrics, such as liquidity and profitability.

Alshatti (2015) conducted to study on the effect of the liquidity management on profitability in the Jordanian commercial banks during the time period from 2005 to 2012. Thirteen banks have been chosen to represent all Jordanian commercial banks. The liquidity indicators are the investment ratio, acid test ratio, capital ratio, net credit facilities/total assets ratio, and liquid assets ratio, whilst return on equity and return on assets were used to estimate profitability. The augmented Dickey Fuller stationary test model was employed to test for a unit root in a time series of the research variables, followed by hypothesis testing by correlation and regression analysis. The empirical results reveal that an increase in the acid test ratio and the investment ratio of the available funds has a good effect on profitability, whereas the capital ratio and the liquid assets ratio have a negative effect on profitability. The researcher recommends that there is a need for optimal utilization of available liquidity in various aspects of investment in order

to increase bank profitability, and banks should adopt a general framework of liquidity management to ensure sufficient liquidity for efficiently executing their operations, as well as initiate an analytical study of liquidity evolution rates and their ability to achieve a balance between fund sources and uses.

Adhikari (2015) conducted the study to examine the liquidity and profitability situation of the banks to examine the profitability ratios of the sample banks, including return on shareholders' equity, total assets, and deposits, to assess the cash reserve ratio (CRR) maintained by the banks, and to investigate the relationship between net profit and total deposit, net profit and investment, and so on. The study focused on three commercial banks. The secondary data are mostly derived from the Nepal Stock Exchange Limited, economic surveys and studies, and annual reports of sampling commercial banks. The study employed both financial and statistical methods. Nabil's liquidity situation is lower than that of SBI Bank, but it has the biggest investment in government securities relative to current assets. Nabil Bank has the greatest investment-to-total deposit and government securities-to-total working fund ratios, but the lowest share and debenture ratio. After analyzing the profitability of these two banks, we discovered that Nabil had a greater return on total working capital and return on loan and advances than SBI. However, the total interest paid on Nabil's total working cash is less than that of SBI bank. In terms of risk ratios, Nabil's liquidity risk and credit risk are lower than those of SBI bank, however capital risk is higher. Using trend analysis, we can see that Nabil bank's loan and advances to total deposit and total investment to total deposit ratios are higher than those of SBI. It shows that Nabil bank may have a stronger position than SBI bank. SBI Bank has an excellent liquidity position.

Malik, Awais and Khursheed (2016) conducted to study on impact of liquidity on profitability. The study focused on twenty-two private sector banks registered with the State Bank of Pakistan between 2009 and 2013. Three models were described and estimated with the Ordinary Least Squares approach. The empirical results showed a statistically significant association between bank liquidity metrics and return on assets. However, when return on equity and return on investment were used as indicators of profitability, the association became statistically insignificant. It is advised that banks evaluate and modify their liquidity

management procedures. This will not only increase dividend returns for shareholders, but it will also boost the bank's asset utilization.

Pradhan (2016) examined the effect of liquidity on the performance of Nepalese commercial banks use the investment ratio, liquidity ratio, capital ratio, and quick ratio as independent factors, with return on equity and return on assets as dependent variables. According to the study, the link between capital ratio and ROE is positive, however the association between quick ratio and liquidity ratio with ROE and ROA is negative. Empirical evidence suggests that there is a mixed link between liquidity risk and company financial performance. As a result, the purpose of this study is to determine the impact of liquidity on the profitability of Nepalese commercial banks.

Bwacha and Xi (2018) had conducted study to examine the effect of liquidity on profitability. A quantitative study was conducted on a research sample of 50 banks that are part of the top 100 banks in the world by asset size and are located in three geographical regions: Asia, Europe, and North America. The time span under consideration was ten years, from 2008 to 2017. The quantitative data for these banks was collected to offer a measure of our variables: loan to deposit ratio (LDR), deposit to asset ratio, cash and cash equivalents to deposit ratio (CDR) as liquidity proxies, and return on equity and return on assets as profitability proxies. Six hypotheses were constructed and tested against these five factors to determine the impact of liquidity on profitability. The study's findings show that only DAR has a meaningful impact on profitability as measured by ROE, whereas all other hypotheses were found to be inconsequential. DAR did not have a substantial influence on ROA due to banks' high quick asset holdings in the post-crisis period. Due to the high interest payable on deposits, fast asset holdings, and lending rates, both LDR and CDR were shown to have no meaningful impact on ROE and ROA. As a result, it was determined that liquidity has little impact on banking profitability in general.

Pangeni (2018) had conducted study to explore and examine the liquidity position and profitability status and relationship between liquidity and profitability in of Nepalese commercial banks. To achieve this purpose, a descriptive study design was used. Secondary data was obtained from the annual report statements of Nepalese commercial banks. Correlation and regression analyses were used to investigate the link between liquidity and

profitability. The ROA, ROE, and net profit margin were used to assess profitability, while the current ratio, cash and bank balance to total deposit, and cash and bank balance to current deposit ratios were used to assess liquidity. The study focused on ten Nepalese commercial banks (ADBL, Everest, Himalayan, Nepal SBI, Nepal Investment, Nabil, Laxmi, Global IME, Kumari, and Prime Commercial Banks) from 2007/08 to 2019/17. The findings revealed a positive and significant association between liquidity and profitability among Nepalese commercial banks over time. However, the outcomes of this study are based on research completed on the chosen banks. As a result, the findings indicate that ADBL and NABIL have strong liquidity and profitability positions.

Pokharel and Pokhrel (2019) conducted study to examine their liquidity management and profitability positions using various statistical and financial tools. The article shows a zigzag trend in the average profitability of commercial banks, despite the fact that the bank's liquidity ratios are unpredictable. The study concluded that bank liquidity ratios were below the prescribed requirement. Similarly, CRR is significantly higher than the monetary policy for 2016/17. The CRR and IGSCA are favorably connected with ROA, whereas the CRR and CBBISD are negatively correlated. In terms of the liquidity-ROE relationship, CR is inversely connected to ROE, but all other ratios (CRR, CBBISD, and IGSCA) are positively associated to ROE. It has also revealed a significant association between liquidity ratios and profitability, with the exception of IGSCA and ROA.

Shrestha and Jha (2020) conducted study to assess the impact of liquidity on the profitability. Data taken from the banks' relevant annual reports and accounts served as the basis for the analysis. To investigate the type and degree of the association between the variables and ascertain whether there is a cause-and-effect relationship between them, correlation and regression analysis were used, respectively. Considering that effective liquidity management can boost the bank's earnings. The study used a variety of statistical and financial tools to look at their profitability and liquidity management positions. The study came to the conclusion that banks' liquidity ratios fell short of the required minimum. According to the study's findings, the LADR significantly affects the ROA and ROE of HBL, EBL, and NBB. While NRBTDR has a negative influence on NBB's ROE and a positive impact on the other two sample banks, it has a weakly significant impact on the ROA of all sample banks. While CACL has no

discernible influence on ROA in NBB, it has a major impact on ROA in HBL and EBL. Furthermore, ROE at each of the three banks is significantly impacted by CACL. While NBB has a weakly significant impact on both the profitability indices, CHTDR significantly affects the ROA and ROE of HBL and EBL. Significant effects of CATA are seen in ROA in HBL, EBL, and NBB. In a similar vein, CATA significantly affects ROE while EBL and NBB just marginally benefit. The ROE of HBL, EBL, and NBB, as well as ROA, are significantly impacted by the LADR.

Kathi (2020) conducted study on impact of liquidity on profitability of Nepalese commercial banks. The study, which covered the years 2013 to 2019, involved ten of the twenty-seven listed commercial banks. The secondary data used in this study were taken from the annual reports of the chosen commercial banks and the Bank Supervision Reports that the NRB issued. Return on equity and return on assets are the stand-ins for profitability, whereas the credit-deposit ratio, cash-deposit ratio, and asset quality are the measures of liquidity. Asset quality has a negative and substantial link with return on assets, but a positive and significant association with return on equity, according to the results of the Hausman test and the fixed effects method. The return on equity (ROE) and return on assets (ROA) have a positive but negligible connection with the cash deposit ratio (CADR). Nonetheless, the analysis shows that CDR has a negligible and negative association with ROE and a positive but insignificant link with ROA.

Numerous independent and dependent variables were included in the investigation, as can be seen from the preceding empirical review. The following metrics are considered independent variables: investment ratio, capital ratio, return on working capital, return on loan, interest earned to outsiders, cash deposit ratio, LFCLR, LFTDR, NRBTDR, CHTDR, CBBTDR, LACLR, LDR, CR, QR, ROCE, etc. Independent variables like CR, QR, NRBTDR, LADR, CHTDR, CBBTDR, etc. are frequently used. and just five variables—LACLR, NRBTDR, CHTDR, LADR, and CATAR—were chosen. ROE, ROA, and NIM were the dependent variables; only ROE and ROA were chosen. Numerous methodology reviews, including ones on descriptive statistics, regression, correlation, and hypothesis, were present. Descriptive, regression, and correlation analysis are therefore employed in this study.

Table 1

Summary of Empirical Review of Journals and Articles

Authors	Objective	Variables	Methodology	Major Findings
Sthapit & Maharjan (2012)	(i)To measure the profitability position of NABIL and SCBN (ii)To measure the liquidity position of NABIL and SCBN (iii)To examine the relationship between liquidity and profitability of NABIL and SCBN.	LFCLR, LFTDR, NRBTDR, CHTDR and CBTDR are independent variable. ROA is the dependent variable.	Descriptive statistics and t-test, Multiple regression was used	The LFTDR and NRBTDR have a negative significant effect on ROA of SCBN whereas CHTDR has a positive significant effect. But liquidity ratios have not significant effects on profitability of NABIL. Therefore, the liquidity performance of SCBN is better than NABIL.
Ibe (2013)	To determine the effect of liquidity management on performance of commercial banks.	Liquidity ratio, LDR, CRR, cash & short-term fund are independent variables. NPAT are dependent variable.	Regression analysis and test the hypothesis.	Treasury bills and certificates have a significant impact on bank profitability, There is a significance positive relationship between cash and short term fund and profit after tax, There is a significant relationship between cash and profitability.
Chukwunwe ike (2014)	(i)To determine the relationship between current ratio and profitability (ROA) (i)To determine the relationship between acid-test ratio and profitability (ROA)	CR, acid test ratio, ROCE are independent variable. ROA is the dependent variable.	Correlation and hypothesis were used	There is a significant positive correlation between current ratio and profitability, there is no definite significant correlation between quick ratio and profitability, and There is no significant positive correlation between return on capital employed and profitability.
Alshantti, A.S(2015)	(i)To examine the effect of the banking liquidity management on profitability in the Jordanian commercial banks**.**	Investment ratio, Quick ratio, capital ratio, net credit facilities total assets and liquid assets ratio are in depended. ROE and ROA are the dependent	Hypothesis and regression were used	Profitability as measured by return on equity is affected positively by the investment and quick ratios, and negatively affected by the other variables. profitability as measured by return on equity is affected positively by the investment and acid test ratios, and negatively affected by the other variables
Adhikari, A. (2015)	(i). To identify the liquidity position of the selected Commercial banks. (ii). To identify the status of profitability and risk position of selected	CR, CRR, CBBCAR, LACAR, LATDR and TITDR are the independed variable. Return	Descriptive statistics, Correlation and Regression was used**.**	Return on total working fund and return on loan and advances of Nabil is higher than that of SBI bank. But, total interest paid to total working fund of Nabil is lower than that of SBI bank. The risk ratio, liquidity risk and credit risk of Nabil is lower than that of SBI bank

	Commercial Banks of Nepal. (iii). To examine the trend and relations of total deposit, investments and total loans of the selected commercial banks.	on working fund, return on loan and advance, Interest earned to outside assets are the dependent variable**.**		whereas it is higher in case of capital risk. Loan and advances to total deposit and total investment to total deposit ratios of Nabil bank are greater than that of SBI bank.
Malik, Awais & Khursheed (2016)	(i)To examine the relationship between liquidity and profitability.	CR and QR are independed variable. ROA, ROE and ROI are dependent variable.	Regression Correlation and Hypothesis was used	There is a strong relationship between these ratios of the firm. There is a point that keeping liquid asset reduces profitability. ROA significantly affected by three ratio current ratio, quick ratio, liquidity ratio but ROE is not affected by the current ratio, liquidity ratio and quick ratio.
Pradhan, et.al (2016)	(i)To evaluate the relationship between liquidity and performance.	Investment ratio, liquidity ratio and capital ratio are the independent variable. ROE and ROA are the dependent variable.	Regression and Correlation and Descriptive statistics was used**.**	The correlation between capital ratio and ROE is positive and it is negative for quick ratio and liquidity ratio with ROE and ROA.
Pangeni (20180	(i)To examine the liquidity position, profitability status and relationship between liquidity and profitability of commercial banks	CR, CBBTDR and CBBDR are the independent variable. ROA, ROE and NPM are the dependent variable	Descriptive statistics, Correlation and Regression was used.	A positive and significant relationship between liquidity and profitability among the Nepalese commercial banks over the period. However, the findings of this paper are based on a study conducted on the selected banks. Hence, the results show that ADBL and NABIL have good liquidity position and profitability position.
Pokharel & Pokhrel (2019)	(i)To measure the profitability status of Nepalese commercial banks (ii) To assess the liquidity position in Nepalese commercial banks and (iii) To analyze the impact of liquidity on profitability.	CR, CRR, cash & bank balance to interest sensitive deposit and investment of government securities in current assets**.**	Descriptive statistics and Hypothesis was used**.**	The CRR and IGSCA are positively correlated with ROA while CRR and CBBISD are inversely correlated with ROA. In case of liquidity-ROE Relation, CR is inversely correlated to ROE but all other ratios (CRR, CBBISD and IGSCA) are positively correlated with ROE. It also has reported there is significant relationship between liquidity ratios with profitability, except between IGSCA and ROA

Shrestha & jha (2020)	(i). To evaluate the profitability position of HBL, NBB & EBL. (ii)To examine the liquidity position of HBL, NBB & EBL. (iii)To evaluate the association of liquidity and profitability of HBL, NBB &EBL. (iv)To analyze the influence of liquidity on the profit position of HBL, NBB &EBL.	LADR, NRBTDR, LACL, CATA and CHTDR are the independent variable. ROA and ROE are the dependent variable.	Descriptive statistic, Correlation and Multiple Regression was used.	The study concluded that the LADR has significant impact in ROA as well as ROE. NRBTDR/CRR has weak significant impact on ROA of all sample banks whereas, it has negative impact ROE of NBB and have the positive impact on other two. CACL has significant effect on ROA of HBL and EBL whereas there is no significant impact on ROA due to CACL in NBB. The LADR has significant impact in ROA as well as ROE of HBL, EBL and NBB. Hence, the results are not generalizable to non-quoted banks.
Khati (2020)	(i)To examine the impact of liquidity on profitability of commercial banks in Nepal.	Assets quality (AQ), cash deposit ratio and credit deposit ratio are independent variable. ROA and ROE are the dependent variable.	Descriptive statistics	The results found that Assets quality (AQ) has negative and significant relationship with return on assets (ROA) whereas it has positive and significant relationship with return on equity (ROE). Cash-deposit ratio (CADR) has positive and insignificant relationship with return on assets (ROA) and return on equity (ROE).
Bwacha & Xi (2018)	To examine the effect of liquidity on profitability.	LDR, DAR and CDR are the independent variable. ROA and ROE are the dependent variable	Descriptive statistics, hypothesis, correlation and regression was used.	The results found that DAR significantly impacts profitability computed as ROE while all the other hypotheses proved insignificant. DAR was not found to significantly impact ROA due to the high liquid assets holdings by banks in the post-crisis period. Both LDR and CDR were found not to significantly impact ROE and ROA owing to the high interest payable on deposits, high liquid assets holdings and high lending rates.
Muhammad SMalik (2016)	To examine the liquidity position, profitability status and relationship between liquidity and profitability of banking sector.	ROA, ROI and ROE are the dependent variable and CR, QR and LR are independent.	Hypothesis, correlation and regression were used.	There is negative relationship between the Profitability Ratio and the Liquidity Ratio. Some-times, there may be a weak positive relation between these ratios.

Pokharel & Prasad (2019)	To evaluate the relationship between liquidity and performance.	ROA, ROI and ROE are the dependent variable and CR, QR and LR are independent.	descriptive statistics, correlation and regression were used.	The obtained p-value on IGSCA in regression with ROA is 38 % which is more than 5%. So, we accept Hypothesis H0, i.e., no significant relation exists between IGSCA and ROA.

2.4 Research Gap

Numerous studies have examined the effect of liquidity on the profitability of development banks operating in Nepal. Nevertheless, no comparative analysis has been done to date between MBBL, GBBL, and MBBL. The discrepancy in research between earlier and contemporary studies Cover the pertinent statistics and information starting in 2012/13 and ending in 2022/22. Second, not much research has been done to compare the profitability and liquidity performance of MBBL, GBBL, and MBBL and Thirdly, the researchers' use of multiple regression, correlation, and descriptive statistics to analyze the data shows where this study differs from the previous one in that no prior research on this bank has been identified. Many researchers have studied the profitability of development banks in Nepal from a comparative perspective, but none of them looked at public, private or joint venture banks. Instead, they only analyze revenue, costs, and the impact of bad debt on profitability.

The research on this topic is very limited in the Nepali context. This study aims to fill the gap of previous research on profitability analysis of these five banks by mainly focusing on selected development banks established at different times. Only ten years of data were included in this study, which may have led to inaccurate results. Different ratios and trend analysis were used in this study to evaluate the profitability of the three banks. To determine the risk and relationship between loans, advances and deposits with a particular development bank, statistical methods such as averaging and correlation are also used.

Therefore, both from an academic and policy perspective, this research has proven to benefit all interested parties, individuals, scholars, professors, students and entrepreneurs. I hope this research will be useful to others on a related topic in the future.

CHAPTER III

RESEARCH METHODOLOGY

The procedures and techniques used for the entire study are covered in this chapter. It is the collection of several instrumental approaches used to accomplish pre-established goals. The research methodology used in this chapter adheres to a few keys but constrained processes that are intended to accomplish the goals of the study.

3.1 Research Design

The purpose of this study is to examine how liquidity affects Nepalese development banks' profitability. Descriptive and causal comparative research designs have been used to achieve these goals. The analysis in this paper used secondary data, all of which came from associated banks' unpublished official records, annual reports, and financial statements, among other sources. The gathered data has been tabulated and statistically evaluated to determine the profitability and liquidity ratios as well as other pertinent analysis metrics like mean, standard deviation, and correlation coefficient.

3.2 Population and Sample

The impact of liquidity on profitability, as determined by various liquidity ratios and profitability, is the subject of this study. In Nepal, there are seventeen development banks in operation. The target population is all of the nation's development banks. Out of all the development banks, five have been chosen as examples of the highest paid-up capital. These five banks span the years 2012–2022 and are Kamana Sewa Bikas Bank Limited, Mahalaxmi Bikash Bank Limited, Muktinath Bikash Bank Limited, Jyoti Bikash Bank Limited, and Garima Bikash Bank Limited. Convenience sampling was used in the sample's selection. A non-probability sampling technique is the convenience sampling method. The convenience sampling method allows the researcher to choose data from any source.

3.3 Nature and Sources of Data

The secondary data is essentially the study's main focus. The balance sheet, profit and loss account, annual report, auditor's reports, relevant website, unpublished or published theses, bank financial performance, newspaper, journal, magazines, etc. are the sources of the secondary data.

3.4. Instrument of Data collection

The financial performance reports, publications, journals, references, annual reports, and corresponding websites of the banks that provide the data used in this study will all be taken into consideration for the necessary observation. Additional data is gathered from many agencies and institutions, including the Ministry of Finance, the Nepal Stock Exchange, and the NRB. In a similar vein, a variety of statistics and information are obtained for mandatory observations from a variety of sources, including economic journals, periodicals, bulletins, magazines, and a range of public and unpublished reports and papers. The primary source of some review materials is the Shanker Dev Campus central library at TU Kirtipur.

3.5. Data processing procedure

First, information was taken out of the bank's annual reports and entered into a spreadsheet. Then, in accordance with the needs and requirements of this study, data were loaded into the spreadsheet to calculate the financial ratios and generate the required statistics. Microsoft Word and Excel are two examples of the computer programs that were used to process the collected data for this purpose.

3.6. Method of Analysis

To obtain the fact result, a variety of profitability measurement instruments and methodologies are used under this. Karl Pearson's correlation coefficient and ratio analysis are two statistical and financial techniques used to assess and show the acquired and organized data in a systematic manner.

3.6.1. Financial tools

Ratio analysis is a powerful and often used tool in financial analysis. Any two components of a financial statement can have their ratios calculated to show the mathematical relationship between them. A ratio in the context of finance indicates the quantitative or numerical relationship between two variables. Ratios are an essential tool for evaluating business success since they simplify large amounts of financial data, allow for qualitative evaluations, and are easy to use. There are many ratios available to examine and analyze an organization's or company's financial performance. However, only relevant and meaningful ratios are analyzed for our particular goal. A few crucial ratios to consider while assessing the performance of the business include:

3.6.2. Statistical tools

A crucial role is played by statistical tools in company operations. In the corporate sector, every performance should be calculated to determine the precise profit or loss. These are a few common mathematical tools used in daily life. The statistical tools listed below can be used to interpret data.

1. Arithmetic Mean

The process of adding up each numerical value in a series and dividing the result by the total number of items yields the arithmetic mean. In statistical analysis, this statistical instrument functions as a basic measure. To calculate it, first add up the numbers in the set, and then divide the total by the number of numbers in the series.

$$\bar{X} = \frac{\Sigma \times}{N}$$

Where,

$\bar{X}$ = Arithmetic Mean

$\sum X$ = Sum of Elements

N = Number of Observation

2. Standard Deviation

The standard deviation, which is calculated as the square root of the variance, is a statistical measure used to evaluate how dispersed a dataset is with respect to its mean. It quantifies the degree of dispersion within the dataset by computing the square root of the variance and quantifying the variation of each data point from the mean. Increased deviation in the dataset is shown by larger distances between data points and the mean; this leads to a wider distribution of the data and a higher standard deviation.

$$S.\ D=\sqrt{\frac{\Sigma(X-\overline{X})^2}{N}}$$

3. Coefficients of variation

The standard deviation represents the dispersion in absolute terms. The measurement of the coefficient of standard deviation is the relative measure of dispersing depending on the standard deviation. Less c.v. is more consistency and uniformity, and vice versa. The coefficient of variation is the percentage measure of the s.d. coefficient. CV can compare two variables separately in terms of their variability, but just standard deviation is inappropriate for comparing two pairs of variables. The calculation is as follows.

$$\text{Coefficients of variation (C.V)} = \frac{S.D}{\bar{X}} * 100$$

4. Coefficient of correlation

A statistical metric called the correlation coefficient is used to measure how strongly two variables' relative changes are related to one another. It is a useful statistical tool for determining how much various variables are linearly correlated. The most widely used technique to measure the correlation between two variables is "Karl Pearson's coefficient of correlation." A positive correlation exists when the values of the variables are directly proportionate to each other. Conversely, the correlation is considered to be negative if the values of the variables are inversely proportionate. The range of +1 to -1 is where the correlation coefficient is always found. This formula can be used to find the correlation coefficients (r) between two variables, X and Y.

$$r = \frac{N\Sigma XY - \Sigma X, EY}{\sqrt{N\Sigma X^2 - (\Sigma X)^2}\sqrt{N\Sigma Y^2 - (\Sigma Y)^2}}$$

Where,

r = the correlation coefficient between two variables of X and Y

Proprieties

a) It lies between -1 and +1

b) If r = +1, then there is perfect positive correlation.

c) If r = -1, then there is perfect negative correlation.

d) If r = 0, then there is no correlation.

e) If r = 0.7 to 0.99 (or- 0.7 to -0.99) then there is high degree positive or negative correlation.

5. Multiple Regression Analysis

A single continuous dependent variable and two or more independent variables are used to explain the relationship in the dominant version of linear regression, also referred to as multiple linear regression. These independent variables may be categorical or continuous in character. A statistical method known as multiple linear regression, or MLR for short, uses several explanatory variables to predict the value of a response variable. Creating a model that depicts the linear relationship between the explanatory (independent) factors and the response (dependent) variable is the primary goal of multiple linear regression.

$$yi = \beta 0 + \beta 1 xi1 + \beta 2 xi2 + \ldots + \beta p xip$$

Where, for i = n observation

yi =dependent variable

xi =explanatory variables

β0 =y-intercept (constant term)

βp =slope coefficients for each explanatory variable.

Study Model

Profitability (Y)= β0+ **X1** β1+ **X2** β2+ **X3** β3+ **X4** β4+ **X5** β5+e

Where,

X1= Liquid assets to current liabilities ratios

X2= NRB Balance to total deposit ratio

X3= Cash in hand to total deposit ratio

X4= Loan and advances to deposits ratio

X5= Current assets to total assets ratio

3.7 Research Framework and Definition of Variables

3.7.1 Conceptual Framework

The conceptual framework of this research is presented in graphic from which reflects the variables selected in research. It is presented below:

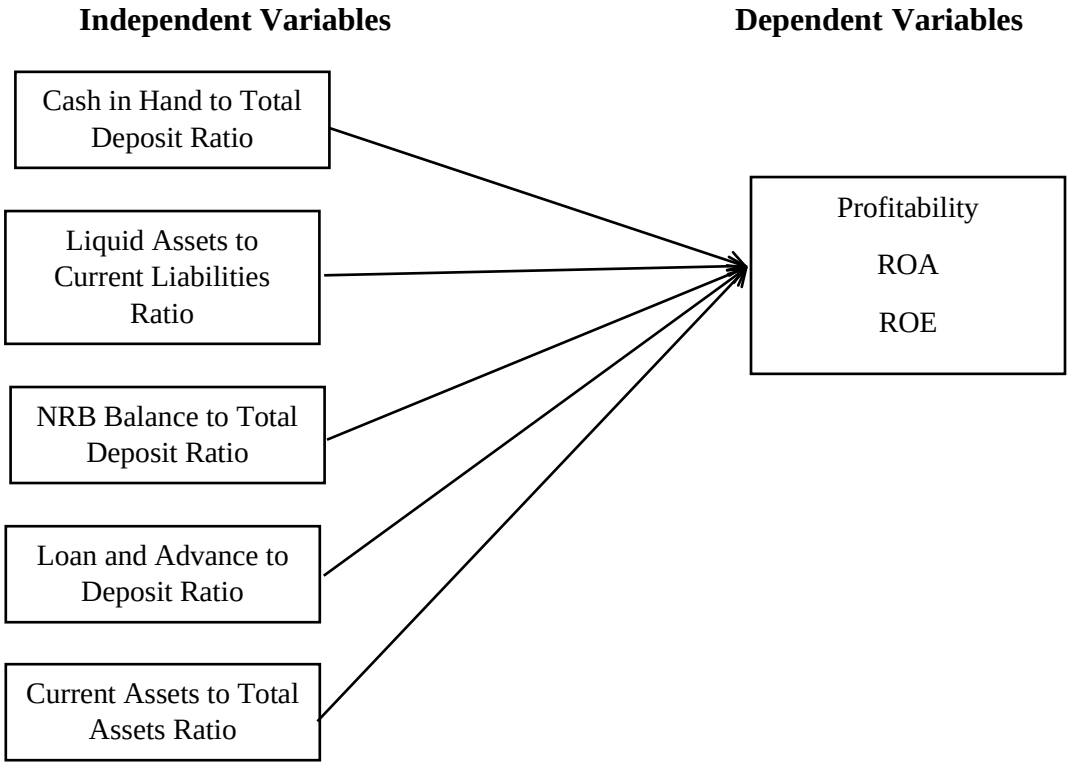


Figure 1: The Theoretical Framework

Source: Shrestha and Jha (2020)

3.7.2 Definition of Variables

In research, a variable is basically any individual, location, thing, or phenomenon that you are trying to measure in some manner. Thinking about what the terms say about the variable in issue can help you understand the difference between a dependent and independent variable the easiest way possible.

Independent Variables

An independent variable in experimental research is one that is changed, adjusted, or controlled in order to examine its effects. Being "independent" means that it is not impacted by any other research-related aspects. They are listed in the following order:

Liquidity

The capacity to pay short-term or financial obligations as they become due is known as liquidity. In a commercial bank, liquidity refers to the institution's capacity to meet all of its contractual commitments on time. These responsibilities can include lending, deposit investment and withdrawal, and liability maturity, all of which occur naturally as part of the bank's regular operations. Additionally, liquidity relates to the capacity to finance the growth of assets and pay down debts without suffering unanticipated losses. As a result, effective liquidity management within the bank contributes to the institution's ability to meet its cash needs, which are frequently erratic and dependent on outside variables as well as the actions of other agents. Liquidity is the capacity to pay debts or other short-term obligations as they become due. A commercial bank's liquidity is defined as its ability to meet all of its contractual commitments on time. These obligations can include lending, investing, withdrawing deposits, and maturing liabilities—all of which are normal business operations. Effective liquidity management in the bank helps to ensure that the bank is able to meet incurred cash, which is frequently uncertain and subject to external factors as well as the behavior of other agents. Liquidity is also defined as the bank's capacity to fund asset growth and meet liabilities as they become due without incurring unexpected losses.

Liquid assets to Current liability ratio (LACLR):

The ratio of total liquid assets to current liabilities, such as the sum of current deposits, savings deposits, bills payable, and creditors, as shown in the commercial banks' balance sheets, is known as the liquid assets to current liability ratio, or LACLR. A greater ratio indicates the banks' stronger liquidity position, which is advantageous for potential new investment opportunities. The following formula is used:

$$\text{LACLR} = \frac{Liquid\ assets}{current\ liabilities}$$

Where,

Liquid assets = cash in hand + money at call and short notice

Current liabilities = Due to BFI + due to NRB+ Derivatives financial institution + current deposit + saving deposit+ bills payable + income tax payable

NRB balance to total deposit ratio (NRBTDR):

The Nepal Rastra Bank balance to total deposit ratio (NRBTDR) shows the total amount of deposits gathered by the commercial banks and the amount deposited with the bank. A higher ratio indicates that the banks have a strong position in terms of liquidity. The following is the formula:

$$\text{NRBTDR} = \frac{NRB\ Balance}{Total\ deposit\ ratio} \times 100\%$$

Cash in hand to total deposit ratio (CHTDR):

The ratio of cash in hand to total deposits as reported on commercial banks' balance sheets is known as the cash in hand to total deposit ratio, or CHTDR. A greater ratio indicates a bank's stronger liquidity position, which is more beneficial for novel investment opportunities. The following is the formula:

$$\text{CBTDR} = \frac{cash\ in\ hand}{total\ deposit} \times 100\%$$

Loan and advance to total deposit ratio (LTDR):

A bank's liquidity can be evaluated by comparing its total loans to its total deposits during a given time period, which is known as the loan and advance to deposit ratio, or LATDR. An increased ratio is indicative of a bank's stronger liquidity position, which is better for novel investment prospects. The ratio of loans to deposits is expressed as a percentage. The bank could not have adequate liquidity to meet any unforeseen funding needs if the ratio is unduly high. The bank could not be earning as much money as it might if the ratio is too low. Here's the formula:

$$\text{LTDR} = \frac{Loan\ and\ advance}{total\ deposit} 100\%$$

Current assets to total assets ratio (CATAR)

The significance of a company's current assets is revealed by the current assets to total assets ratio (CATAR), which calculates the total amount of money allocated to working capital. It is important to note how percent of the total assets is made up of current assets because they are mostly in charge of creating working capital and also help to increase liquidity. The ratio of current assets to total assets is known as the current assets to total deposit ratio (CATAR). The formula is as follows.

$$\text{CATAR} = \frac{Current\ assets}{Total\ assets} 100\%$$

Where,

Current assets = cash and cash equivalent + NRB balance + derivative financial instrument + placement with bank & financial institutions + other trading assets

Profitability Ratio

Profitability ratios is utilized to assess a business's ability to generate profits relative to its incurred costs. For the majority of these ratios, a greater number when compared to the ratio of a rival or an earlier time frame denotes successful performance on the part of the business.

Return of Equity

Return on equity (ROE) represents the proportion of net income earned relative to shareholders' equity and is expressed as a percentage. This metric serves as a measure of a company's profitability, indicating the efficiency with which it generates profit based on the capital invested by shareholders. In essence, ROE reveals the company's ability to generate earnings from the funds contributed by its equity investors.

$$ROE = \frac{NPAT}{Total\ equity} \times 100$$

Return on assets

Return on assets (ROA) serves as a gauge of a company's profitability in relation to its overall assets. It provides insight into the effectiveness of management in utilizing assets to generate profits. ROA is calculated by dividing a company's annual earnings by its total assets and is expressed as a percentage. Occasionally, this metric is also known as "return on investment."

$$ROA = \frac{NPAT}{Total\ assets} \times 100$$

CHAPTER IV
RESULTS AND DISCUSSION

The gathered data are examined and interpreted in this chapter in accordance with the technique described in the preceding chapter. The study's findings were obtained with the aid of financial statements covering the period from FY 2012–13 to FY 2021/22. Financial ratios are used to analyze the data, which are shown in tabular and diagrammatic form. Additionally, the data have been analyzed using statistical methods including regression, co-efficient of variation, mean, standard deviation, and correlation coefficient.

4.1 Liquidity Ratio

Liquidity is necessary for development banks to meet lending demand and withdrawals of deposits. Additionally, liquidity is required to satisfy NRB-mandated cash reserve ratio requirements. Development banks need to make sure they don't have an excess of money or a liquidity issue. If the banks don't fulfill their commitment, creditors will lose trust in them and their creditworthiness would suffer.

4.1.1 Liquidity Assets to Current Liability Ratio (LACLR)

The ratio of liquid assets to current liabilities is determined to determine the company's ability to swiftly cover short-term obligations without taking stock realization or prepayments into account. It illustrates how short-term liabilities and assets are related.

Table 2

Liquid Assets to Current Liability Ratio (LACLR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	5.57	7.47	6.64	9.18	25.91
SD	3.13	1.33	2.05	3.40	18.17
CV	56.17	17.81	30.92	37.07	70.13

Source: Annual Report of the banks

Table 2 presents the Liquid Assets to Current Liability Ratio (LACLR) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, allowing for a comparative analysis of their liquidity management practices. The LACLR is a crucial financial metric that measures the proportion of liquid assets held by a bank relative to its current liabilities, providing insights into its ability to cover short-term obligations with liquid resources.

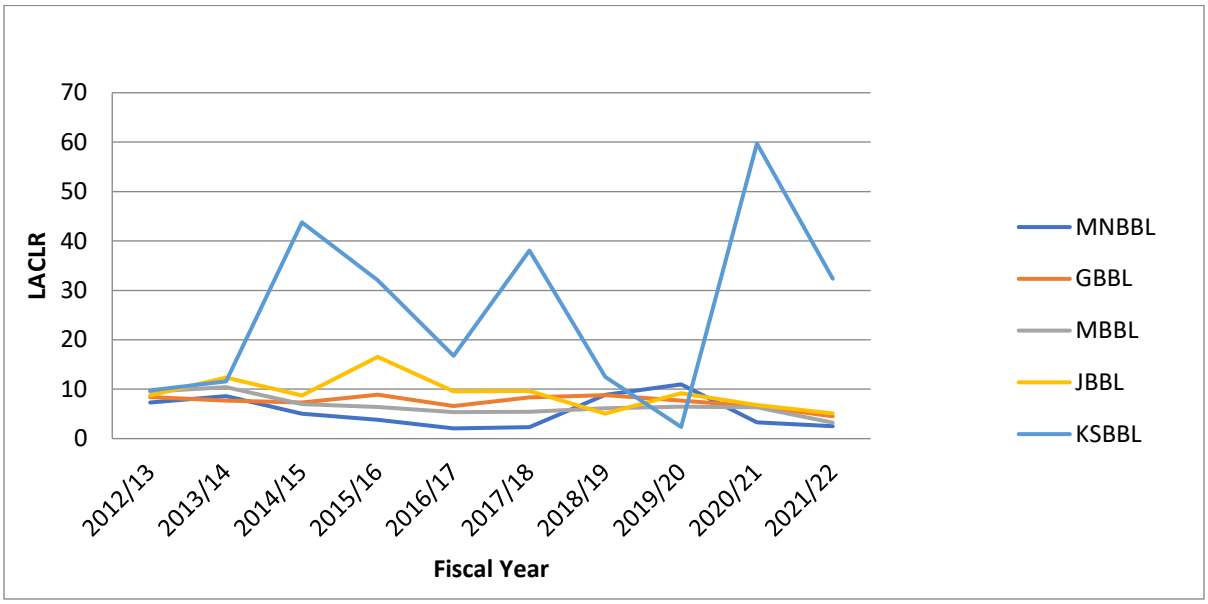
Comparing the mean LACLR values across banks reveals variations in their liquidity positions. For instance, KSBBL exhibits the highest mean LACLR of 25.91, indicating a relatively higher level of liquid assets compared to its current liabilities, whereas GBBL has the lowest mean LACLR of 7.47, suggesting a lower liquidity position. Such differences in mean LACLR values reflect varying degrees of emphasis on liquidity management among the banks.

Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's liquidity position over time. Notably, KSBBL demonstrates the highest SD of 18.17, indicating significant fluctuations in its LACLR values across fiscal years, while GBBL exhibits the lowest SD of 1.33, suggesting a more stable liquidity position. These differences in SD highlight variations in the volatility of liquidity management practices among the banks. Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, accounting for differences in the scale of LACLR values. GBBL stands out with the lowest CV of 17.81%, indicating relatively lower variability in its LACLR values compared to the mean, while KSBBL has the highest CV of 70.13%, indicating significant relative variability. Such differences in CV underscore variations in the relative stability and consistency of liquidity management strategies among the banks.

In summary, Table 2 facilitates a comparative analysis of liquidity positions among the five banks based on their LACLR values. By examining mean, SD, and CV, stakeholders can discern differences in liquidity management practices, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 2

Liquid Assets to Current Liabilities Ratio (LACLR)



4.1.2 NRB Balance to Total Deposit Ratio (NRBTDR)

To determine each bank's NRB balance based on its total deposit, the NRB balance to total deposit ratio is computed. Another name for it is the cash reserve ratio (CRR).

Table 3

NRB balance to Total deposit Ratio (NRBTDR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	7.32	7.51	7.57	12.63	8.37
SD	2.95	2.15	2.04	4.22	5.62
CV	40.26%	28.61%	26.97%	33.37%	67.16%

Source: Annual Report of the banks

Table 3 provides insights into the NRB (Nepal Rastra Bank) balance to Total Deposit Ratio (NRBTDR) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, facilitating a comparative analysis of their liquidity management strategies. The NRBTDR measures the proportion of NRB balances, which represent reserves held with the central bank, relative to total deposits, reflecting the extent to which banks rely

on central bank reserves to meet deposit liabilities. Comparing the mean NRBTDR values across banks reveals variations in their reliance on NRB balances to support deposit liabilities. For instance, JBBL exhibits the highest mean NRBTDR of 12.63, indicating a relatively higher reliance on NRB balances compared to total deposits, whereas MBBL has the lowest mean NRBTDR of 7.57, suggesting a lower reliance. Such differences in mean NRBTDR values reflect divergent strategies in managing liquidity and reserve requirements among the banks.

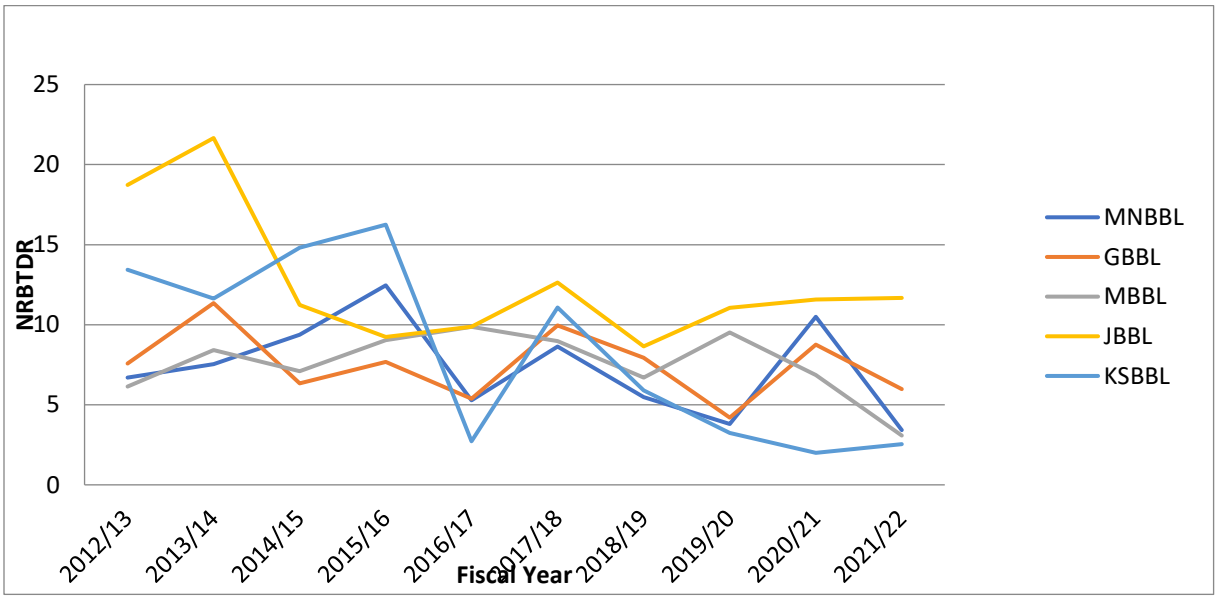
Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's reliance on NRB balances over time. Notably, JBBL demonstrates the highest SD of 4.22, indicating significant fluctuations in its NRBTDR values across fiscal years, while GBBL exhibits the lowest SD of 2.15, suggesting a more stable reliance on NRB balances. These differences in SD highlight variations in the volatility of liquidity management practices among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of NRBTDR values. GBBL stands out with the lowest CV of 28.61%, indicating relatively lower variability in its NRBTDR values compared to the mean, while KSBBL has the highest CV of 67.16%, indicating significant relative variability. Such differences in CV underscore variations in the relative stability and consistency of liquidity management strategies among the banks.

In summary, Table 3 facilitates a comparative analysis of banks' reliance on NRB balances to support deposit liabilities based on their NRBTDR values. By examining mean, SD, and CV, stakeholders can discern differences in liquidity management practices, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 3

NRB balance to Total Deposit Ratio (NRBTDR)



4.1.3 Cash in Hand to Total Deposit Ratio (CHTDR)

To safeguard its solvency and fulfill its immediate obligations, the banking industry likewise needs enough liquidity. In light of this, banks ought to have adequate cash and bank balance relative to total deposits.

Table 4

Cash in Hand to Total Deposit Ratio (CHTDR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	1.93	3.64	2.54	2.38	1.38
SD	0.99	0.72	0.45	0.33	0.16
CV	51.19	19.79%	17.63%	13.66%	11.69%

Source: Annual Report of the banks

Table 4 presents the Cash in Hand to Total Deposit Ratio (CHTDR) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, facilitating a comparative analysis of their liquidity management practices. The CHTDR measures the proportion of cash held by banks in hand relative to their total deposits, reflecting their ability to meet short-term deposit liabilities with cash reserves.

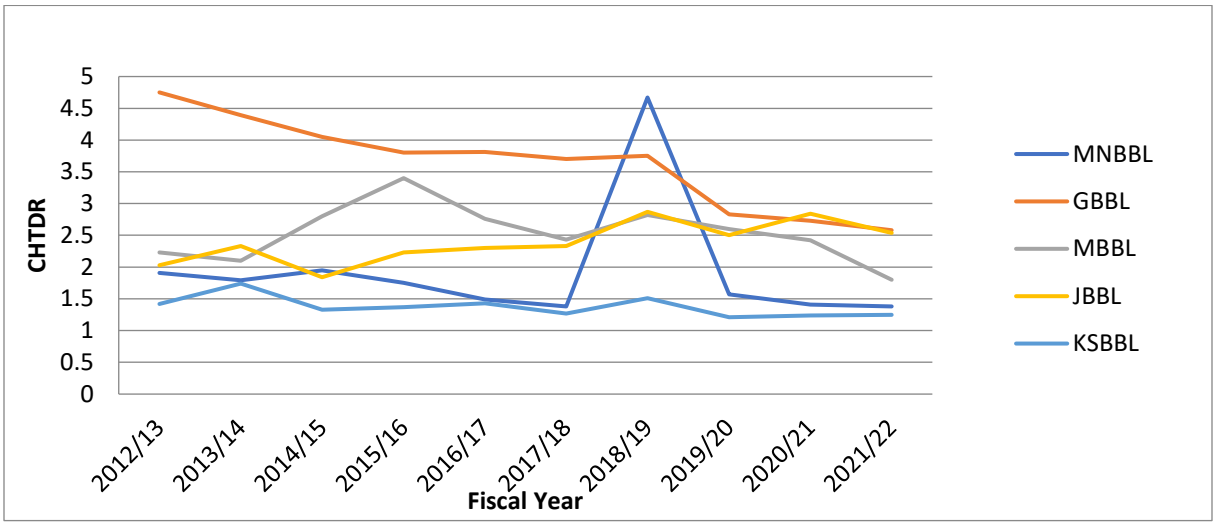
Comparing the mean CHTDR values across banks reveals variations in their reliance on cash reserves to support deposit liabilities. For instance, GBBL exhibits the highest mean CHTDR of 3.64, indicating a relatively higher reliance on cash reserves compared to total deposits, whereas KSBBL has the lowest mean CHTDR of 1.38, suggesting a lower reliance. Such differences in mean CHTDR values reflect divergent strategies in managing liquidity and cash reserves among the banks. Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's reliance on cash reserves over time. Notably, KSBBL demonstrates the lowest SD of 0.16, indicating relatively low variability in its CHTDR values across fiscal years, while MNBBL exhibits the highest SD of 0.99, suggesting greater fluctuations in its reliance on cash reserves. These differences in SD highlight variations in the volatility of liquidity management practices among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of CHTDR values. GBBL stands out with the lowest CV of 19.79%, indicating relatively lower variability in its CHTDR values compared to the mean, while KSBBL has the highest CV of 11.69%, indicating significant relative variability. Such differences in CV underscore variations in the relative stability and consistency of liquidity management strategies among the banks.

In summary, Table 4 facilitates a comparative analysis of banks' reliance on cash reserves to support deposit liabilities based on their CHTDR values. By examining mean, SD, and CV, stakeholders can discern differences in liquidity management practices, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 4

Cash in hand to Total Deposit ratio (CHTDR)



4.1.4 Loan and Advance to Total Deposit Ratio (LADR)

A development bank should invest all of the money it has gathered as loans and advances to clients rather than holding it in cash and bank balances in order to earn a profit. The loans and advances in this study are local and foreign bills that have been discounted and bought, as well as cash credit and overdrafts in both local and non-convertible foreign currencies.

Table 5

Loan and Advance to Total Deposit ratio (LADR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	74.96	90.05	73.70	82.60	59.77
SD	6.1	2.79	14.66	6.42	7.41
CV	8.132%	3.10%	19.89%	7.77%	12.39%

Source: Annual Report of the banks

Table 5 presents the Loan and Advance to Total Deposit Ratio (LADR) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, allowing for a comparative analysis of their lending practices relative to deposit levels. The LADR measures

the proportion of loans and advances extended by banks relative to their total deposits, providing insights into their lending activities and risk exposure.

Comparing the mean LADR values across banks reveals variations in their lending practices and utilization of deposit funds for lending purposes. For instance, GBBL exhibits the highest mean LADR of 90.05, indicating a relatively higher proportion of loans and advances extended compared to total deposits, whereas KSBBL has the lowest mean LADR of 59.77, suggesting a lower proportion. These differences in mean LADR values reflect divergent strategies in loan portfolio management and risk appetite among the banks.

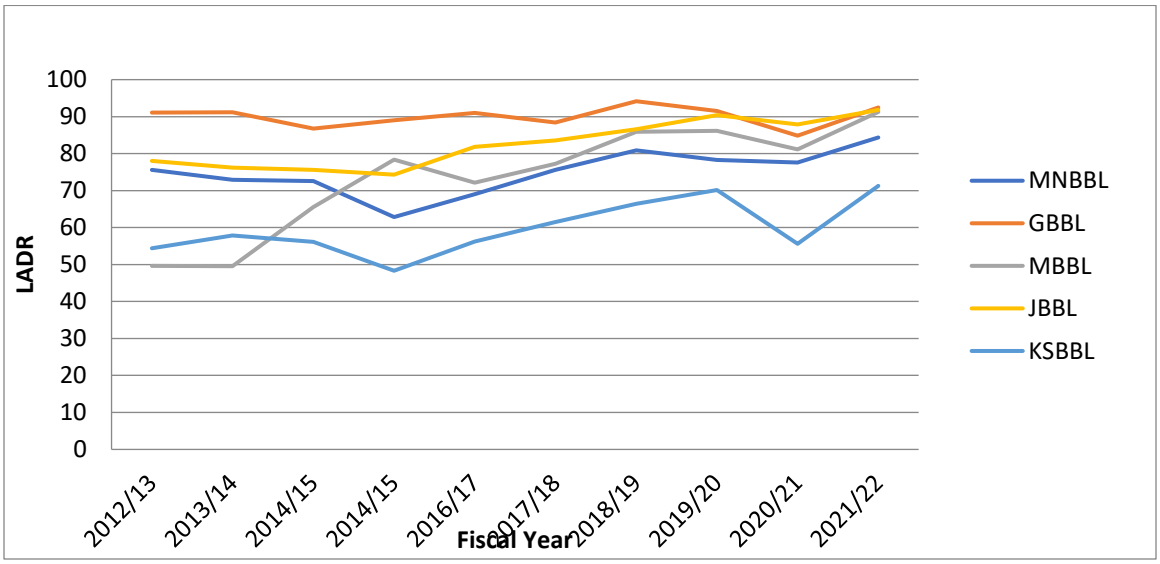
Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's lending practices over time. Notably, MBBL demonstrates the highest SD of 14.66, indicating significant fluctuations in its LADR values across fiscal years, while GBBL exhibits the lowest SD of 2.79, suggesting a more stable lending pattern. These differences in SD highlight variations in the volatility of lending activities among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of LADR values. GBBL stands out with the lowest CV of 3.10%, indicating relatively lower variability in its LADR values compared to the mean, while MBBL has the highest CV of 19.89%, indicating significant relative variability. Such differences in CV underscore variations in the relative stability and consistency of lending practices among the banks.

In summary, Table 5 facilitates a comparative analysis of banks' lending practices relative to deposit levels based on their LADR values. By examining mean, SD, and CV, stakeholders can discern differences in lending activities, risk exposure, and stability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 5

Loan and Advance to Total Deposit Ratio (LADR)



4.1.5 Current Assets to Total Assets Ratio (CATAR)

To find out how much of total assets are available as current assets, the current assets to total deposit ratio is calculated. Short-term liabilities are paid for with current assets.

Table 6

Current Assets to Assets Ratio (CATAR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	13.93	12.10	13.09	20.10	30.14
SD	4.65	1.83	2.71	3.83	6.68
CV	33.38	15.17	20.77	19.07	22.45

Source: Annual Report of the banks

Table 7 presents the Current Assets to Assets Ratio (CATAR) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, providing insights into the composition of current assets relative to total assets and allowing for a comparative analysis of liquidity positions among the banks. The CATAR measures the proportion of

current assets, which are assets expected to be converted into cash or used up within one year, relative to total assets, reflecting the liquidity and short-term solvency of the banks.

Comparing the mean CATAR values across banks reveals variations in their composition of current assets relative to total assets. For instance, KSBBL exhibits the highest mean CATAR of 30.14, indicating a relatively higher proportion of current assets compared to total assets, whereas GBBL has the lowest mean CATAR of 12.10, suggesting a lower proportion. These differences in mean CATAR values reflect divergent strategies in managing liquidity and short-term solvency among the banks.

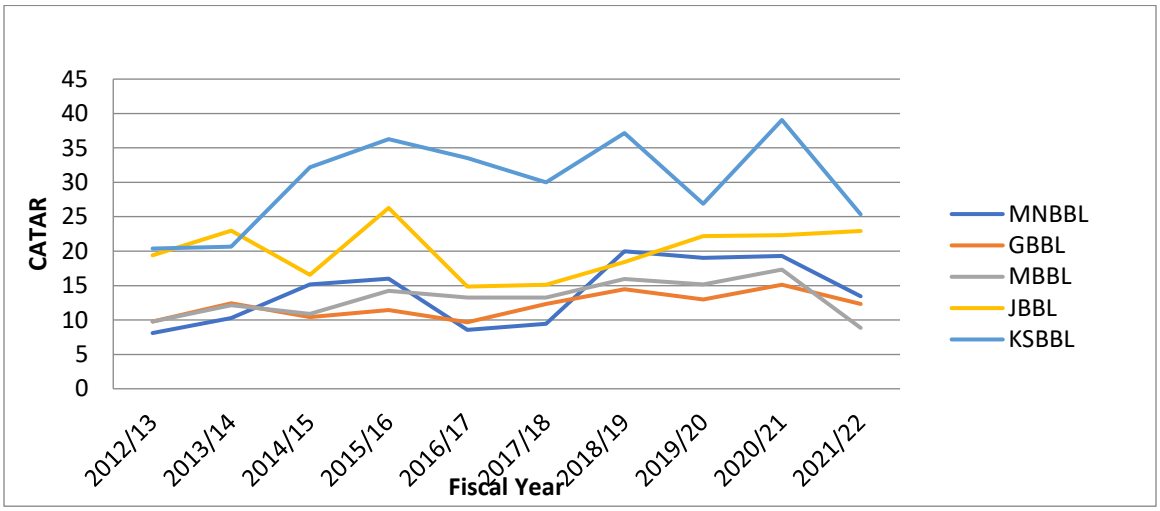
Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's composition of current assets over time. Notably, KSBBL demonstrates the highest SD of 6.68, indicating significant fluctuations in its CATAR values across fiscal years, while GBBL exhibits the lowest SD of 1.83, suggesting a more stable composition of current assets. These differences in SD highlight variations in the volatility of liquidity management practices among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of CATAR values. GBBL stands out with the lowest CV of 15.17%, indicating relatively lower variability in its CATAR values compared to the mean, while KSBBL has the highest CV of 22.45%, indicating significant relative variability. Such differences in CV underscore variations in the relative stability and consistency of liquidity management strategies among the banks.

In summary, Table 6 facilitates a comparative analysis of banks' liquidity positions based on their CATAR values, reflecting the composition of current assets relative to total assets. By examining mean, SD, and CV, stakeholders can discern differences in liquidity management practices, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 6

Current Assets to Total Assets ratio (CATAR)



4.1.6 Return on Assets (ROA)

The relationship between total assets and producing net profit is explained by return on total assets. Net profit after taxes is divided by the total assets of the business to determine return on total assets. Greater efficiency in the use of total assets is indicated by a higher return on total assets, and vice versa.

Table 7

Return on Total Assets (ROA)

Fiscal Year	MNBBL	JBBL	MBBL	JBBL	KSBBL
Mean	1.66	2.07	1.32	1.29	1.69
SD	0.58	0.43	0.42	0.43	0.61
CV	34.89%	20.96%	31.62%	33.33%	36.28%

Source: Annual Report of the banks

Table 7 provides insights into the Return on Total Assets (ROA) for five different banks (MNBBL, JBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, allowing for a comparative analysis of their profitability relative to total assets. ROA is a key financial metric that measures a company's ability to generate earnings from its total assets, indicating its efficiency in asset utilization and overall profitability.

Comparing the mean ROA values across banks reveals variations in their profitability relative to total assets. For instance, JBBL exhibits the highest mean ROA of 2.07, indicating a relatively higher profitability compared to total assets, whereas MBBL has the lowest mean ROA of 1.32, suggesting a lower profitability. These differences in mean ROA values reflect divergent strategies in asset utilization and profitability among the banks.

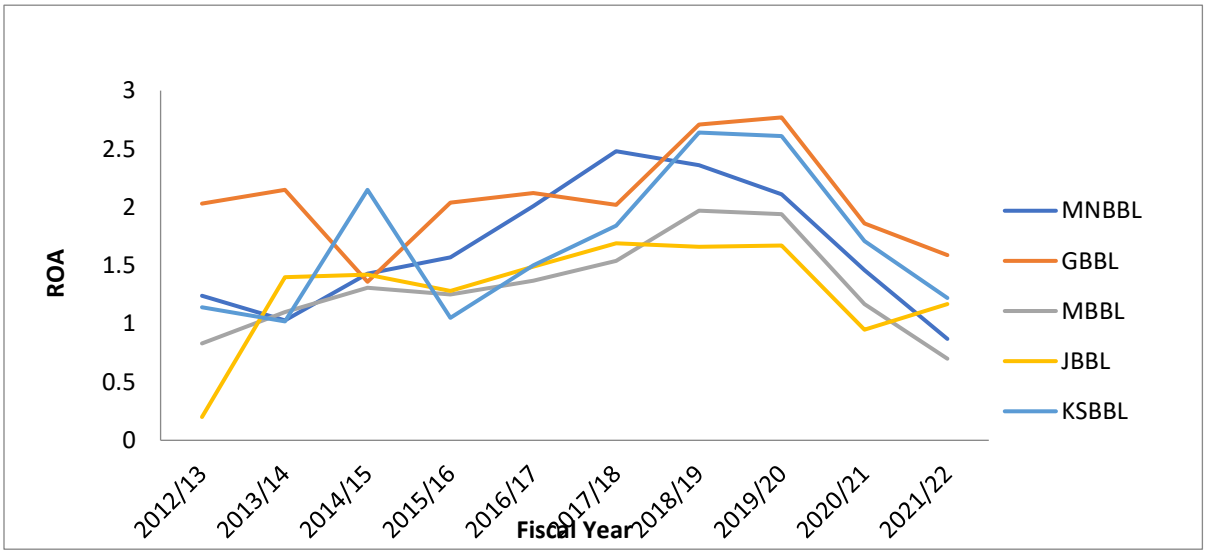
Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's profitability over time. Notably, KSBBL demonstrates the highest SD of 0.61, indicating significant fluctuations in its ROA values across fiscal years, while JBBL exhibits the lowest SD of 0.43, suggesting a more stable profitability pattern. These differences in SD highlight variations in the volatility of profitability among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of ROA values. MNBBL stands out with the highest CV of 34.89%, indicating relatively higher variability in its ROA values compared to the mean, while JBBL has the lowest CV of 20.96%, indicating relatively lower variability. Such differences in CV underscore variations in the relative stability and consistency of profitability among the banks.

In summary, Table 8 facilitates a comparative analysis of banks' profitability relative to total assets based on their ROA values. By examining mean, SD, and CV, stakeholders can discern differences in profitability performance, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 7

Return on Assets



4.1.7 Return on Equity (ROE)

Return on Equity (ROE) is a financial metric that measures the profitability of a company relative to shareholders' equity. It indicates the efficiency with which a company generates profits from the capital invested by its shareholders. A higher ROE suggests that the company is effectively utilizing shareholders' funds to generate earnings, while a lower ROE may indicate inefficiencies or higher levels of debt financing. ROE is calculated by dividing net income by shareholders' equity and is expressed as a percentage.

Table 8

Return on Equity

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
Mean	22.47	14.11	15.77	12.21	18.47
SD	8.13	3.26	4.57	4.29	6.84
CV	36.19%	23.12%	28.99%	35.17%	37.02%

Source: Annual Report of the banks

Table 8 presents the Return on Equity (ROE) for five different banks (MNBBL, GBBL, MBBL, JBBL, and KSBBL) across multiple fiscal years, facilitating a comparative analysis of their profitability relative to shareholders' equity. ROE is a critical financial metric that measures the efficiency with which a company generates profits from the capital invested by its shareholders, providing insights into its ability to deliver returns to equity investors.

Comparing the mean ROE values across banks reveals variations in their profitability relative to shareholders' equity. For instance, MNBBL exhibits the highest mean ROE of 22.47, indicating a relatively higher profitability compared to shareholders' equity, whereas JBBL has the lowest mean ROE of 12.21, suggesting a lower profitability. These differences in mean ROE values reflect divergent strategies in asset utilization and profitability among the banks.

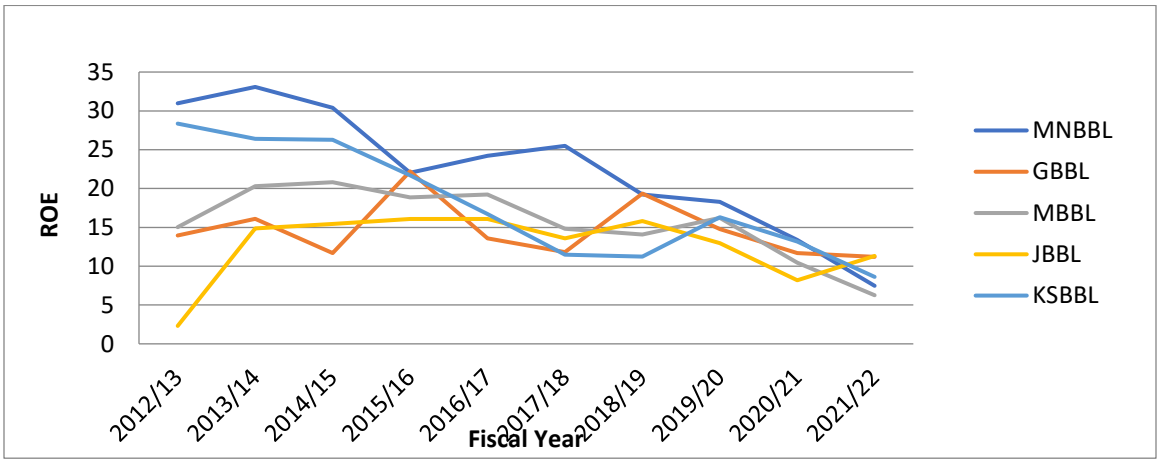
Analyzing the standard deviation (SD) allows for an assessment of the variability or consistency in each bank's profitability over time. Notably, KSBBL demonstrates the highest SD of 6.84, indicating significant fluctuations in its ROE values across fiscal years, while GBBL exhibits the lowest SD of 3.26, suggesting a more stable profitability pattern. These differences in SD highlight variations in the volatility of profitability among the banks.

Furthermore, comparing the coefficient of variation (CV) enables a relative assessment of variability, considering differences in the scale of ROE values. MNBBL stands out with the highest CV of 36.19%, indicating relatively higher variability in its ROE values compared to the mean, while GBBL has the lowest CV of 23.12%, indicating relatively lower variability. Such differences in CV underscore variations in the relative stability and consistency of profitability among the banks.

In summary, Table 8 facilitates a comparative analysis of banks' profitability relative to shareholders' equity based on their ROE values. By examining mean, SD, and CV, stakeholders can discern differences in profitability performance, stability, and variability across the banks, informing investment decisions, risk assessments, and strategic planning within the banking sector.

Figure 8

Return on Equity (ROE)



4.2 Correlation Analysis

Correlation of coefficient shows the relationship between two or more than two variables. It measures the variables are positively or negatively co-related. For this purpose, Karl Pearson's Co-efficient of correlation has been used to find out and analyze the relationship between liquidity and profitability. The analysis employed correlation coefficient assessment to ascertain the magnitude and direction of the linear relationship between the variables.

Table 9

Correlation Analysis

	ROA	ROE	CHTDR	LATDR	NRBTDR	LACLR	CATAR
ROA	1						
ROE	.135	1					
CHTDR	.245	-.164	1				
LATDR	.250	-.446**	.588**	1			
NRBTDR	-.277	.080	.008	.115	1		
LACLR	.017	.005	-.328*	-.505**	.035	1	
CATAR	.061	-.101	-.446**	-.471**	.140	.710**	1

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

The table 9 presents a correlation analysis between various financial ratios, namely Return on Assets (ROA), Return on Equity (ROE), Cash in Hand to Total Deposit Ratio (CHTDR), Loan and Advances to Deposits Ratio (LATDR), NRB Balance to Total Deposit Ratio (NRBTDR), Liquid Assets to Current Liabilities Ratio (LACLR), and Current Assets to Total Assets Ratio (CATAR). Correlation coefficients ranging from -1 to 1 indicate the strength and direction of linear relationships between these ratios.

Starting with ROA, it serves as a measure of a company's profitability relative to its total assets. It is negatively correlated with NRBTDR (r = -0.277) and moderately negatively correlated with LACLR (r = -0.505), suggesting that companies with higher returns on assets tend to have lower NRB balance to total deposit ratios and lower liquid assets to current liabilities ratios. This implies that companies with higher profitability may have lower liquidity and a lower proportion of liquid assets relative to current liabilities. Moving to ROE, it represents a company's profitability in relation to shareholders' equity. It shows a weak positive correlation with CATAR (r = -0.101), indicating that companies with higher returns on equity tend to have slightly lower current asset to total asset ratios.

CHTDR, the Cash in Hand to Total Deposit Ratio, indicates the proportion of cash on hand relative to total deposits. It displays a weak positive correlation with ROA (r = 0.245) and a moderate positive correlation with LADR (r = 0.588), suggesting that companies with higher cash in hand to total deposit ratios tend to have higher returns on assets and higher loan and advances to deposits ratios. This could imply that companies with more cash reserves are better positioned to generate returns and extend loans. LATDR, representing the Loan and Advances to Deposits Ratio, exhibits a significant positive correlation with CHTDR (r = 0.588) and a moderate negative correlation with LACLR (r = -0.505), indicating that companies with higher loan and advances to deposits ratios tend to have higher cash in hand to total deposit ratios and lower liquid assets to current liabilities ratios.

NRBTDR, which indicates the NRB balance to total deposit ratio, displays a weak negative correlation with ROA (r = -0.277) and a weak positive correlation with CATAR (r = 0.140), suggesting that companies with higher NRB balance to total deposit ratios tend to have slightly lower returns on assets and slightly higher current asset to total asset ratios. LACLR, representing the Liquid Assets to Current Liabilities Ratio, exhibits a strong negative

correlation with LATDR (r = -0.505) and a strong positive correlation with CATAR (r = 0.710), indicating that companies with higher liquid assets to current liabilities ratios tend to have lower loan and advances to deposits ratios and higher current asset to total asset ratios. Lastly, CATAR, indicating the Current Assets to Total Assets Ratio, shows a strong positive correlation with LACLR (r = 0.710) and a moderate negative correlation with ROE (r = -0.101), implying that companies with higher current asset to total asset ratios tend to have higher liquid assets to current liabilities ratios and slightly lower returns on equity.

In summary, the correlation analysis provides insights into the interrelationships among various financial ratios, highlighting how different aspects of a company's financial performance and structure are interconnected. These correlations can aid in understanding the financial health, risk, and efficiency of a company, thereby informing decision-making processes for investors, managers, and other stakeholders.

4.3 Regression Analysis

By estimating a functional relationship between variables, regression analysis is a statistical method used to investigate the relationships between them. When evaluating the strength of the correlations between two or more variables, this approach is useful.

4.3.1 The Multiple Regression of ROA on Liquidity

Regression analysis is used to examine the impact of liquidity variables on changes in Return on Assets (ROA) for selected banks. These variables include Liquid Assets to Current Liability Ratio (LACLR), NRB Balance to Total Deposit Ratio (NRBTDR), Cash in Hand to Total Deposit Ratio (CHTDR), Loan and Advance to Deposit Ratio (LATDR), and Current Assets to Total Assets Ratio (CATAR). Below is a summary of the regression model's equation:

ROA= a1 + b1LACLR+ b2NRBTDR + b3CHTDR +b4LATDR +b5CATAR..... (i)

Where, ROA= Return on Asset, a1= Constant, b1, b2, b3, b4 and b5 = Regression coefficient

Table 10

Regression ROA on Liquidity Position

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.4701	.221	.423	.5199

a. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

b. Dependent Variables: ROA

The table 10 presents the results of a regression analysis with Return on Assets (ROA) as the dependent variable and several liquidity position variables as predictors. The regression model's overall fit is evaluated through several metrics, including the coefficient of determination (R-squared), adjusted R-squared, and the standard error of the estimate.

The R-squared value, which measures the proportion of variance in the dependent variable explained by the independent variables, is 0.221. This suggests that approximately 22.1% of the variability in ROA can be explained by the liquidity position variables included in the model. However, it's important to consider the adjusted R-squared as well, which takes into account the number of predictors and adjusts the R-squared value accordingly. In this case, the adjusted R-squared is 0.423, indicating that around 42.3% of the variability in ROA is explained by the predictors after adjusting for the number of variables in the model. The coefficients associated with each predictor (including the constant term) provide information about the strength and direction of their relationship with the dependent variable (ROA). For instance, a positive coefficient indicates a positive relationship, meaning that as the predictor variable increases, ROA is expected to increase as well, and vice versa for a negative coefficient.

Interpreting the coefficients for each predictor variable can provide insights into their individual impacts on ROA. For example, a positive coefficient for CHTDR would suggest that higher levels of cash in hand relative to total deposits are associated with higher ROA, all else being equal. Similarly, the coefficients for LATDR, NRBTDR, LACLR, and CATAR provide insights into how changes in long-term asset to debt ratio, net revenue before tax to

debt ratio, long-term asset to current liability ratio, and current assets to total assets ratio respectively, affect ROA.

Overall, the regression analysis helps to understand the relationship between liquidity position variables and ROA, providing valuable insights for assessing a company's financial performance and informing decision-making processes for investors, managers, and other stakeholders.

Table 11

Analysis of Variance on ROA

ANOVA

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.376	5	0.675	2.866	0.004
	Residual	11.897	64	2.70		
	Total	15.273	69			

a. Dependent Variable: ROA
b. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

The table 11 indicates that the F-statistic has a value of 0.004 at a 5 percent significance level. This value is below the conventional threshold of 0.05, suggesting that the overall model is a reasonably good fit. Moreover, it implies a statistically significant relationship between Return on Assets (ROA) and the independent variables representing liquidity. The table indicates that the overall regression model is statistically significant ($F = 2.866$, $p = 0.004$), suggesting that at least one of the predictors has a significant relationship with the ROA. The "Regression" section of the table shows that the predictors collectively account for a sum of squares of 3.376 with 5 degrees of freedom, resulting in a mean square value of 0.675.

In summary, based on this ANOVA table, we can infer that the included predictors collectively contribute to explaining the variation in ROA, although further analysis of individual predictor coefficients and their significance would be necessary to understand the specific impact of each predictor on the ROA.

Table 12

Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t-value	Sig.
1	(Constant)	0.512	0.645		0.793	0.432
	CATAR	0.156	0.100	0.269	1.560	0.026
	CHTDR	0.009	0.008	0.206	3.672	0.014
	LATDR	-0.042	0.019	-0.320	-2.206	0.133
	NRBTDR	-0.001	0.010	-0.015	-0.074	0.941
	LACLR	0.023	0.014	0.331	1.632	0.010

Dependent Variable: ROA

Table 12 outlines the regression coefficients for a model where Return on Assets (ROA) serves as the dependent variable, while various independent variables related to liquidity and financial structure are considered. The unstandardized coefficients represent the change in ROA for a one-unit change in each independent variable, while standardized coefficients (betas) indicate the strength and direction of their relationship with ROA, accounting for their scales.

The constant term in the model is 0.512, denoting the expected ROA when all independent variables are zero. Among the independent variables, Current Assets to Total Assets Ratio (CATAR) has a coefficient of 0.156 with a t-value of 1.560, indicating a statistically significant positive association with ROA at a significance level of 0.026. This suggests that higher proportions of current assets relative to total assets correspond to higher ROA. Cash in Hand to Total Deposit Ratio (CHTDR) has a coefficient of 0.009 with a t-value of 3.672, indicating a significant positive relationship with ROA at a significance level of 0.014. This implies that higher levels of cash on hand relative to total deposits are linked to higher ROA.

On the other hand, Loan and advances to deposits ratio (LATDR) shows a coefficient of -0.042 with a t-value of -2.206, but it is not statistically significant at the conventional significance level of 0.05. This suggests that there may not be a significant relationship between LATDR and ROA. NRB Balance to total deposit ratio (NRBTDR) exhibits a coefficient of -0.001 with a t-value of -0.074, indicating no significant relationship with ROA at a significance level of

0.941. Liquid assets to current liabilities ratios (LACLR) have a coefficient of 0.023 with a t-value of 1.632, demonstrating a statistically significant positive relationship with ROA at a significance level of 0.010. This suggests that higher ratios of long-term assets to current liabilities are associated with higher ROA.

In summary, the regression analysis unveils the individual impacts of various liquidity and financial structure variables on ROA, providing valuable insights into a company's financial performance.

4.3.2 The Multiple regression of ROE on Liquidity

Regression analysis is used to study the effects of liquidity variables on changes in Return on Equity (ROE) with regard to the liquidity position of the selected banks. These variables include Liquid Assets to Current Liability Ratio (LACLR), NRB Balance to Total Deposit Ratio (NRBTDR), Cash in Hand to Total Deposit Ratio (CHTDR), Loan and Advance to Deposit Ratio (LADR), and Current Assets to Total Assets Ratio (CATA). The regression model's equation is as follows, and the regression results are shown in Table 4.4.2:

ROA= a1 + b1LACLR+ b2NRBTDR + b3CHTDR +b4LATDR +b5CATAR..... (ii)
Where, ROE= Return on Equity, a1= Constant, b1, b2, b3, b4 and b5 = Regression Coefficient.

Table 13

Regression of ROE on Liquidity Position

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.05746	0.3302	0.2541	5.6611

a. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR
b. Dependent Variables: ROE

Table 13 presents the results of a regression analysis where Return on Equity (ROE) serves as the dependent variable, while several predictors related to liquidity position are considered. The table provides several metrics to evaluate the model's overall fit, including the coefficient of determination (R-squared), adjusted R-squared, and the standard error of the estimate.

The R-squared value, which measures the proportion of variance in the dependent variable explained by the independent variables, is 0.3302. This suggests that approximately 33.02% of the variability in ROE can be explained by the liquidity position variables included in the model. However, it's important to consider the adjusted R-squared as well, which adjusts the R-squared value based on the number of predictors in the model. In this case, the adjusted R-squared is 0.2541, indicating that around 25.41 percent of the variability in ROE is explained by the predictors after considering the model's complexity. The standard error of the estimate (5.6611) provides an estimate of the variability of the observed values around the regression line.

The predictors included in the model are Cash in Hand to Total Deposit Ratio (CHTDR), Loan and advances to deposits Ratio (LATDR), NRB Balance to total deposit Ratio (NRBTDR), Liquid assets to current liabilities Ratios (LACLR), and Current Assets to Total Assets Ratio (CATAR). These variables represent different aspects of a company's liquidity position and financial structure. This analysis indicates that the model has a moderate ability to explain variations in ROE based on the liquidity position variables considered. However, it's important to interpret the coefficients associated with each predictor to understand their specific impacts on ROE. These coefficients provide information about the strength and direction of the relationship between each predictor and ROE, accounting for their respective scales.

Overall, the regression analysis offers insights into how different aspects of liquidity position may affect a company's return on equity, providing valuable information for assessing its financial performance and making informed decisions.

Table 14

Analysis of Variance on ROE

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	695.360	5	139.072	4.33	0.002
	Residual	1410.12	64	32.048		
	Total	2105.489	69			

a. Dependent Variable: ROE
b. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

The table indicates that the p-value is 0.002 at a significance level of 5 percent. With a value below 0.05, it suggests a statistically significant association between the independent variable, liquidity, and Return on Equity (ROE). This implies that the overall model fits reasonably well, indicating a meaningful relationship between ROE and liquidity.

Table 15

Regression Coefficient

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t-value	Sig.
1	(Constant)	46.361	7.019		6.605	0.000
	CATAR	0.332	1.086	0.049	2.508	0.031
	CHTDR	-0.337	0.085	-0.669	-3.963	0.000
	LATDR	0.089	0.205	0.005	0.443	0.667
	NRBTDR	-0.039	0.109	-0.067	-0.368	0.720
	LACLR	-0.292	0.155	-0.355	-2.489	0.016

Dependent Variable: ROE

Table 15 presents the regression coefficients for a model where Return on Equity (ROE) is the dependent variable, and several independent variables related to liquidity are considered. These coefficients provide insights into the strength and direction of the relationship between each independent variable and ROE, both in unstandardized and standardized terms.

The constant term in the model is 46.361, with a standard error of 7.019 and a t-value of 6.605, indicating that it is statistically significant at a p-value of 0.000. This constant represents the expected value of ROE when all independent variables are zero. Among the independent variables, Current Assets to Total Assets Ratio (CATAR) has an unstandardized coefficient of 0.332, a standard error of 1.086, and a t-value of 2.508. The corresponding p-value is 0.031, indicating that CATAR has a statistically significant positive relationship with ROE. In standardized terms, the beta coefficient is 0.049, suggesting a modest positive impact of CATAR on ROE.

Cash in Hand to Total Deposit Ratio (CHTDR) exhibits an unstandardized coefficient of -0.337, a standard error of 0.085, and a t-value of -3.963, with a significant p-value of 0.000. This indicates a statistically significant negative relationship between CHTDR and ROE. In standardized terms, the beta coefficient is -0.669, indicating a substantial negative impact of CHTDR on ROE. Long-term Asset to Debt Ratio (LATDR) shows an unstandardized coefficient of 0.089, a standard error of 0.205, and a t-value of 0.443, with a non-significant p-value of 0.667. This suggests that LATDR does not have a statistically significant relationship with ROE. In standardized terms, the beta coefficient is 0.005, indicating a negligible impact of LATDR on ROE.

Net Revenue Before Tax to Debt Ratio (NRBTDR) displays an unstandardized coefficient of -0.039, a standard error of 0.109, and a t-value of -0.368, with a non-significant p-value of 0.720. This implies that NRBTDR does not have a statistically significant relationship with ROE. In standardized terms, the beta coefficient is -0.067, indicating a minor negative impact of NRBTDR on ROE. Long-term Asset to Current Liability Ratio (LACLR) exhibits an unstandardized coefficient of -0.292, a standard error of 0.155, and a t-value of -2.489, with a significant p-value of 0.016. This suggests a statistically significant negative relationship between LACLR and ROE. In standardized terms, the beta coefficient is -0.355, indicating a moderate negative impact of LACLR on ROE.

In summary, the regression analysis reveals the individual impacts of various liquidity-related variables on ROE. CATAR shows a positive relationship, while CHTDR and LACLR exhibit negative relationships with ROE. LATDR and NRBTDR do not appear to significantly

influence ROE in this model. These findings provide valuable insights into the factors affecting a company's return on equity and can guide decision-making processes for stakeholders.

4.4 Discussion

From the above data analysis, the following major findings have been drawn:

The average current to current liabilities ratio of MNBBL is 5.57%, GBBL 7.47%, MBBL 6.64%, JBBL 9.18% and KSBBL 25.91%. The ratio of average current assets to current liabilities is highest for KSBBL and lowest for MNBBL. The presented data illustrates that KSBBL has the highest current assets relative to short-term debt, whereas MNBBL has the lowest. On average, the NRB balance to total deposit ratios for the banks are as follows: MNBBL at 7.32%, GBBL at 7.51%, MBBL at 7.57%, JBBL at 12.63%, and KSBBL at 8.37%. The ratio of average NRB balance to average total deposits is highest for JBBL and lowest for MNBBL. It shows that the NRB balance of JBBL is the highest compared to the total deposits collected and the lowest is that of Muktinath Bikas Bank Limited. The average cash to total deposits ratio of MNBBL is 1.93%, GBBL 3.64%, MBBL 2.54%, JBBL 2.38% and KSBBL 1.38%. The average cash to total deposit ratio is highest for GBBL and lowest for KSBBL. It shows that the amount of cash retained by GBBL is the highest compared to the total amount of deposits collected, while the lowest amount of cash is held by KSBBL. The mean ratio of loan and advance to total deposit for the sampled banks is as follows: MNBBL at 74.96%, GBBL at 90.05%, MBBL at 73.70%, JBBL at 82.60%, and KSBBL at 59.77%. GBBL holds the highest average ratio, indicating a greater proportion of loans and advances in relation to the total deposits, while KSBBL has the lowest. This suggests that GBBL maintains the highest level of loans and advances relative to the total deposits, while KSBBL has the lowest.

The average return on assets (ROA) for the sampled banks is as follows: MNBBL at 1.66%, GBBL at 2.07%, MBBL at 1.32%, JBBL at 1.29%, and KSBBL at 1.69%. GBBL achieves the highest average ROA of 2.07%, while MBBL Bank Limited records the lowest at 1.32%. This indicates that GBBL earns the highest average return in proportion to its assets, while MBBL Bank Limited has the lowest. In terms of return on equity (ROE), the mean values are MNBBL at 22.47%, GBBL at 14.11%, MBBL at 15.77%, JBBL at 12.21%, and KSBBL at 18.47%. The highest ROE is observed in MNBBL, and the lowest is in JBBL Bank Limited. This suggests that MNBBL Bank Limited has a higher Return on Equity (ROE) compared to JBBL Bank

Limited among the banks studied. The correlation coefficients between ROA and CHTDR, LACAR, LATDR and CATAR are 0.245, 0.017, 0.25 and 0.061, respectively. This shows that the relationship is positive but not significant. Likewise, the correlation coefficient between ROA and NRBTDR stands at -0.277, denoting a negative but statistically insignificant relationship. In the case of ROE and NRBTDR, the correlation coefficient is 0.0801, suggesting a positive yet insignificant association. Meanwhile, the correlation coefficient between ROE and LACLR is 0.005, indicating a positive and insignificant relationship. Moreover, the correlation coefficients between ROE and CHTDR, LATDR, and CATAR are -0.163, -0.445, and -0.101, respectively. These values imply a negative but statistically insignificant relationship between ROE, CHTDR, and CATAR. Notably, LATDR exhibits a significant relationship with ROE.

Multiple regression of ROA and liquidity (CHTDR, LATDR, NRBTDR, CATAR and LACLR) this table provides valuable information about the coefficients of the multiple linear regression model, allowing us to evaluate the relationship between the listed independent variables (CHTDR, LATDR, NRBTDR, LACLR, CATAR) and the dependent variable (ROA). Standardized coefficients and p-values help determine the strength and significance of these relationships. However, it is important to note that additional information, such as model fit and analysis context, is needed to fully interpret the results and draw meaningful conclusions. Multiple regression of ROE and liquidity (CHTDR, LATDR, NRBTDR, CATAR and LACLR), this table provides valuable information about the coefficients of the multiple linear regression model, allowing us to evaluate the relationship relationships between independent variables are listed (CHTDR, LATDR, NRBTDR). , LACLR, CATAR) and dependent variable (ROE). Standardized coefficients and p-values provide information about the strength and statistical significance of these relationships. The results show that LATDR and CATAR are statistically significant predictors of ROE, while CHTDR, NRBTDR and LACLR have less impact in this particular model.

The study shows that the five sample banks have interrelationships between the profitability of deposits, loans and advances. The banks selected in the sample manage their liquidity position in the best possible way. However, some liquidity indices reflect a positive correlation and a negative relationship with profitability indices. Banks must be able to maintain their

liquidity at optimal levels. Banks are required to invest in long-term, medium-term or short-term loans and advances to yield the highest rate of return, implying that optimal investment in liquid assets can be made. Banks' profitability fluctuates mainly in all sampled banks, which can be due to fluctuations in liquidity indicators and other external factors. However, all banks try to increase their profits every year. LATDR has a significant relationship with ROE, which shows that LATDR has an influence on ROE. This result is similar to previous studies such as Shrestha & Jha (2020) and Bwacha & Xi (2018). And LATDR has insignificant relationship with ROA, which means LATDR does not affect ROA. Results supported by Kathi, (2020). LACLR has insignificant relationship with ROA as well as ROE. This conclusion is supported by Stapit & Maharjan (2012). In the banking sector, more liquidity implies less profit and vice versa. Liquidity shows the strength of banks in terms of operations and profitability shows efficient and effective maximization of value over a period of time.

CHAPTER V
SUMMARY AND CONCLUSION

5.1 Summary

This study is prepared to find out the impact of liquidity on the profitability of MNBBL, GBBL, MBBL, JBBL and KSBBL. Liquidity, deposits, loans and advances and current earning assets are the key factors that help a bank achieve its goals. If banks have high liquidity, then they cannot make profits. Because most of the liquidity is reserved in the bank, it does not bring profit to the bank. Insufficient liquidity of banks can lead to serious financial problems such as loss of public confidence and even lead to bank liquidation. Liquidity management is a challenge for banks that want to achieve significant profits. The first chapter includes the research background, problem statement, significance and limitations of the study. The second chapter includes a review of relevant literature, theoretical background of banking principles as well as previous journals, articles and these. The second chapter includes a review of unpublished journals, articles and theses and presents them as theoretical background. Chapter 3 presents the methods and techniques applied to evaluate the relationship between liquidity, deposits, loans and advances profitability of banks in the research sample. In the fourth chapter, data and information collected from different sources are analyzed and presented where the analysis and evaluation are done using different financial and statistical tools. The various liquidity, deposit, loan, advance and profit ratios of current assets are used as statistical tools while the mean, standard deviation, coefficient of variation, coefficient correlation and regression analysis were used as statistical tools.

In this study, after analyzing financial data, liquidity in terms of liquidity ratio, KSBBL and JBBL share high liquidity and the ability to create large new investment opportunities. However, in terms of liquidity for CHTDR, GBBL has larger capital resources to pay creditors compared to other banks in the sample. KSBBL's similar CATAR has a larger amount of liquid assets to support its asset base compared to other banks in the sample. Furthermore, GBBL's loan investment ratio is higher than total deposits (LATDR), which shows that better utilization of total deposits has been made to generate better returns. Finally, JBBL's cash in hand to total deposit ratio (CHTDR) is higher, which means JBBL

has kept inflation under control. According to correlation analysis, the ROA relationship is positively correlated with CHTDR, LATDR, LACLR and CATAR and vice versa is negatively correlated with NRBTDR. Similarly, NRBTDR and LACLR are positively correlated with ROE but CHTDR, LATDR and CATAR are negatively correlated.

5.2 Conclusion

Liquidity is the most important aspect of banking, often compared to a person's lifeline. Lack of adequate liquidity is the first sign that a bank is in serious financial difficulty and leads to a loss of public confidence in the bank. Therefore, ensuring adequate liquidity is an ongoing issue for bank management, which will always have important implications for the bank's bottom line. Liquidity is essential for any organization and profits reflect the financial strength of that organization. Liquidity reflects the strength of banks in terms of operations and profitability indicates efficient and effective maximization of value over a period of time.

KSBBL's LACLR, NRBTDR and CATAR had the largest fluctuations and other MNBBL, GBBL, MBBL and JBBL had the smallest fluctuations. JBBL's CHTDR and LADR are the most volatile compared to other sample banks.

Similarly, the profitability of financial indicators: KSBBL's ROA has the most volatility and GBBL, MNBBL, JBBL and MBBL have the lowest volatility. MNBBL's ROA decreased slightly over the study periods. The ROE of KSBBL and MNBBL seems unattractive due to high volatility. And the ROE of GBBL, MBBL and JBBL showed the lowest volatility, while GBBL showed consistency throughout the study period.

The correlation between ROA with CHTDR, LADR, LACLR and CATAR is positive and insignificant, which shows that the independent variable has no impact on ROA. And the correlation between NRBTDR is negative but not significant. The correlation between ROE and CHTDR, LADR, CATAR is a negative relationship but not statistically significant, showing that the independent variable increases, ROE decreases and vice versa but the independent variables do not affect ROE. ROE and LADR have a negative but significant relationship, which shows that LADR has an impact on ROE. Correlation analysis shows that there is relationship between the dependent variables, i.e., ROA, ROE, and the independent variables, i.e. LADR, CHTDR, NRBTDR, LACLR and CATAR.

5.3 Implications

The following recommendations have been given for the enhancement of the liquidity and profitability position of the selected banks.

i. The average liquidity ratio of MNBBL is comparatively less than that of other examined development banks. Therefore, it is suggested that MNBBL should enhance its liquidity position concerning the liquidity ratio. The average cash-to-total deposits ratio of KSBBL is lower than that of the selected development banks. Hence, it is advisable for KSBBL to maintain its cash-to-total deposits ratio at an adequate level. The average loan and advances-to-total deposits ratio of KSBBL is lower than that of the selected development banks. Therefore, it is recommended to maintain an adequate loan and advances-to-total deposits ratio for KSBBL. The average NRBTDR of MNBBL is lower among the selected development banks, so it is advisable for MNBBL to maintain an adequate NRB balance-to-total deposit ratio.

ii. Therefore, the average liquid assets to total GBBL deposits ratio in selected development banks is recommended to maintain an appropriate ratio of liquid assets to total GBBL deposits. JBBL's average ROA is lower among selected development banks, so JBBL is recommended to increase the use of more profitable assets. JBBL's average ROE is lower among selected development banks, therefore, it is recommended to increase operating efficiency to generate more profits for the bank.

iii. This study may be helpful to fulfil the gaps of proper research about relationship between liquidity and profitability. It may provide the knowledge about liquidity in Nepalese development banks and their profitability position.

iv. This study reflects the relationship between liquidity, deposits, loans and advances profitability position of five selected development banks only. Furthermore, researchers can be carried out using larges sampling other development banks and commercial banks too.

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APPENDIX

Liquid Assets to Current Liability Ratio (LACLR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	7.33	8.40	9.54	8.75	9.80
2013/14	8.62	7.69	10.42	12.34	11.61
2014/15	5.04	7.30	7.01	8.76	43.76
2015/16	3.82	8.89	6.42	16.55	32.07
2016/17	2.07	6.60	5.36	9.57	16.79
2017/18	2.35	8.33	5.45	9.65	38.06
2018/19	8.87	8.80	6.17	5.06	12.51
2019/20	10.98	7.73	6.45	9.19	2.36
2020/21	3.27	6.53	6.34	6.78	59.73
2021/22	2.53	4.53	3.23	5.13	32.39

NRB balance to Total deposit Ratio (NRBTDR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	6.69	7.58	6.13	18.72	13.44
2013/14	7.53	11.35	8.41	21.66	11.63
2014/15	9.38	6.33	7.1	11.24	14.82
2015/16	12.46	7.68	9.03	9.23	16.25
2016/17	5.28	5.39	9.87	9.87	2.72
2017/18	8.64	9.95	8.97	12.64	11.07
2018/19	5.47	7.94	6.7	8.65	5.9
2019/20	3.8	4.2	9.51	11.06	3.24
2020/21	10.49	8.75	6.86	11.58	2
2021/22	3.42	5.98	3.08	11.68	2.55

Cash in Hand to Total Deposit Ratio (CHTDR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	1.91	4.75	2.23	2.03	1.42
2013/14	1.79	4.39	2.1	2.33	1.74
2014/15	1.95	4.05	2.8	1.84	1.33
2015/16	1.75	3.8	3.4	2.23	1.37
2016/17	1.49	3.81	2.76	2.3	1.43
2017/18	1.38	3.7	2.43	2.33	1.27
2017/18	4.67	3.75	2.82	2.87	1.51
2019/20	1.57	2.83	2.6	2.5	1.21
2020/21	1.41	2.73	2.42	2.84	1.24
2021/22	1.38	2.58	1.8	2.54	1.25

Loan and Advance to Total Deposit ratio (LADR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	75.61	91.13	49.62	78.01	54.43
2013/14	72.9	91.2	49.55	76.2	57.84
2014/15	72.55	86.78	65.54	75.56	56.11
2015/16	62.84	89.02	78.39	74.31	48.32
2016/17	69.02	90.96	72.14	81.85	56.17
2017/18	75.59	88.37	77.27	83.52	61.47
2018/19	80.9	94.16	85.87	86.59	66.45
2019/20	78.24	91.52	86.17	90.39	70.11
2020/21	77.59	84.84	81.14	87.85	55.58
2021/22	84.36	92.5	91.25	91.81	71.27

Current Assets to Assets Ratio (CATAR)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	8.10	9.77	9.79	19.40	20.38
2013/14	10.27	12.44	12.12	22.97	20.63
2014/15	15.16	10.40	10.89	16.54	32.16
2015/16	15.98	11.46	14.23	26.28	36.27
2016/17	8.55	9.67	13.25	14.85	33.54
2017/18	9.43	12.31	13.26	15.11	29.98
2018/19	19.98	14.46	15.96	18.41	37.15
2019/20	19.04	12.99	15.18	22.17	26.89
2020/21	19.32	15.12	17.32	22.32	39.06
2021/22	13.43	12.34	8.85	22.92	25.36

Return on Total Assets (ROA)

Fiscal Year	MNBBL	JBBL	MBBL	JBBL	KSBBL
2012/13	1.24	2.03	0.83	0.2	1.14
2013/14	1.03	2.15	1.10	1.40	1.02
2014/15	1.43	1.36	1.31	1.42	2.15
2015/16	1.57	2.04	1.25	1.28	1.05
2016/17	2.01	2.12	1.37	1.49	1.50
2017/18	2.48	2.02	1.54	1.69	1.84
2018/19	2.36	2.71	1.97	1.66	2.64
2019/20	2.11	2.77	1.94	1.67	2.61
2020/21	1.46	1.86	1.17	0.95	1.71
2021/22	0.87	1.59	0.7	1.17	1.22

Return on Equity (ROE)

Fiscal year	MNBBL	GBBL	MBBL	JBBL	KSBBL
2012/13	30.98	13.97	15.02	2.31	28.36
2013/14	33.08	16.1	20.31	14.87	26.38
2014/15	30.39	11.68	20.81	15.42	26.27
2015/16	22.04	22.21	18.87	16.08	21.69
2016/17	24.22	13.6	19.24	16.08	16.71
2017/18	25.49	11.81	14.8	13.58	11.48
2018/19	19.24	19.34	14.07	15.81	11.24
2019/20	18.28	14.78	16.2	12.97	16.31
2020/21	13.39	11.7	10.44	8.18	13.16
2021/22	7.47	11.2	6.26	11.32	8.62

Return on Total Assets (ROA)

Fiscal Year	MNBBL	JBBL	MBBL	JBBL	KSBBL
2012/13	1.24	2.03	0.83	0.2	1.14
2013/14	1.03	2.15	1.10	1.40	1.02
2014/15	1.43	1.36	1.31	1.42	2.15
2015/16	1.57	2.04	1.25	1.28	1.05
2016/17	2.01	2.12	1.37	1.49	1.50
2017/18	2.48	2.02	1.54	1.69	1.84
2018/19	2.36	2.71	1.97	1.66	2.64
2019/20	2.11	2.77	1.94	1.67	2.61
2020/21	1.46	1.86	1.17	0.95	1.71
2021/22	0.87	1.59	0.7	1.17	1.22

Correlation Analysis

	ROA	ROE	CHTDR	LATDR	NRBTDR	LACLR	CATAR
ROA	1						
ROE	.135	1					
CHTDR	.245	-.164	1				
LATDR	.250	-.446**	.588**	1			
NRBTDR	-.277	.080	.008	.115	1		
LACLR	.017	.005	-.328*	-.505**	.035	1	
CATAR	.061	-.101	-.446**	-.471**	.140	.710**	1

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

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.4701	.221	.423	.5199

a. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

b. Dependent Variables: ROA

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.376	5	0.675	2.866	0.004
	Residual	11.897	64	2.70		
	Total	15.273	69			

a. Dependent Variable: ROA

b. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.512	0.645		0.793	0.432
	CATAR	0.156	0.100	0.269	1.560	0.026
	CHTDR	0.009	0.008	0.206	3.672	0.014
	LATDR	-0.042	0.019	-0.320	-2.206	0.133
	NRBTDR	-0.001	0.010	-0.015	-0.074	0.941
	LACLR	0.023	0.014	0.331	1.632	0.010

Dependent Variable: ROA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.05746	0.3302	0.2541	5.6611

a. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

b. Dependent Variables: ROE

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	695.360	5	139.072	4.33	0.002
	Residual	1410.12	64	32.048		
	Total	2105.489	69			

a. Dependent Variable: ROE

b. Predictors: (constant), CHTDR, LATDR, NRBTDR, LACLR and CATAR

Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t-value	Sig.
		B	Std. Error	Beta		
1	(Constant)	46.361	7.019		6.605	0.000
	CATAR	0.332	1.086	0.049	2.508	0.031
	CHTDR	-0.337	0.085	-0.669	-3.963	0.000
	LATDR	0.089	0.205	0.005	0.443	0.667
	NRBTDR	-0.039	0.109	-0.067	-0.368	0.720
	LACLR	-0.292	0.155	-0.355	-2.489	0.016

Dependent Variable: ROE

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ABSTRACT Bank development and survival depend heavily on their capacity to manage liquidity and profitability, and managing the trade-off between the two is a critical skill. The most important factor influencing banks' profitability is liquidity.

The effect of liquidity on the profitability of development **banks in Nepal**