IMPACT OF CAPITAL STRUCTURE AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS

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CERTIFICATION OF AUTHORSHIP

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

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REPORT OF RESEARCH COMMITTEE

Mr. Sanjay Mehta has defended research proposal entitled **"IMPACT OF CAPITAL STRUCTURE AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS"** successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestion and guidelines of supervisor Asso. Prof. Dr. Kapil Khanal Submit the thesis for evaluation and viva-voce examination.

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APPROVAL SHEET

We, the undersigned, have examined the thesis entitled **"IMPACT OF CAPITAL STRUCTURE AND PROFITABILITY OF NEPALESE COMMERCIAL BANKS"** Presented by Sanjay Mehta Candidate for the degree of Master of Business Studies (MBS Semester) and conducted the Viva voce examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

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Sanjay Mehta

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ABBREVIATION

ADBL	Agriculture Development Bank Limited
BS	Bank size
BOKL	Bank of Kathmandu Limited
CAR	Capital adequacy ratio
NIM	Net Interest Margin
NPL	Non-Performing Loan
NRB	Nepal Rastra Bank
ROA	Return on assets
ROE	Return on Equity
SBL	Sunrise Bank Limited
STDA	Short term debt to assets
TDA	Total deposit to assets
TDE	Total debt to equity

ABSTRACT

Financial system in broad and banking system in specific is one of the energetic elements for the economic development of the country. So, it is essential to control and regulate bank operation by the apex institutions to protect customers and depositors to make sure customer's safety, strengthen and promote soundness, stability, and efficiency of the banking system. Inefficiency in the banking performance may cause financial crisis which invites the economic breakdown as happened in USA in 2007 (Marshall, 2009). Capital structure of a firm describes the way in which a firm raises capital needed to establish and expand its business activities. The capital structure decision is one of the most important decisions made by financial managers in this modern era. The capital structure decision is at the center of many other decisions in corporate finance. One of the many objectives of a corporate financial manager is to ensure low cost of capital and thus maximize the wealth of shareholders.

The study attempts to examine the determinants of capital structure in Nepalese commercial banks. Return on assets and net interest margin are the dependent variables. The independent variables are total debt to total assets ratio and total debt to total equity ratio, capital adequacy ratio, short term debt to assets, and bank size. The study is based on secondary data of from 3 commercial banks in Nepal for the period of 10 years from 2012/13 to 2021/22. This sample size represents the 30 percent of the population which is representative and commendable of Nepalese commercial banks. The secondary data used are of annual in nature. The secondary data are collected from the Banking and Financial Statistics and bank supervision report published by Nepal Rastra Bank and annual reports of the selected commercial banks.

The descriptive statistics shows that bank size has highest average return and return on assets has lowest average return of Nepalese commercial bank. This study reveals the correlation test between both dependent and independent variables using correlation coefficient matrix. The correlation test shows that total debt to total asset, short term debt to assets, bank size has inverse relationship with return on assets of Nepalese commercial bank with 1 percent level of significance. Likewise total debt to total equity, capital adequacy ratio has positive relationship with the return on assets.

Similarly, total debt to total asset, total debt to total equity, short term debt to assets and bank size has inverse relationship with net interest margin with significance level and positive relationship with the capital adequacy ratio with net interest margin of commercial bank.

CHAPTER I

INTRODUCTION

Background of the study

Banking sector provides a mechanism to channelize the funds from surplus to deficit sector in an economy. In every economy, the banking sector is a vital source of financing economic activities (Bobakova, 2003). Accordingly, bank is defined as a financial institution that invests the money of its clients and investors, and works as a financial broker between the investors who have a surplus of money (depositors) and the investors who borrow these money to cover their investment needs (borrowers) (Albertazzi and Gambacorta, 2010).

The capital structure decision is a critical challenge faced by firm management, as it significantly influences the firms. This information holds substantial importance not only for managers and regulators but also for shareholders (Tarek et al., 2014). Diamond and Rajan (2000) emphasize that capital structure plays a crucial role in the stability of banks, highlighting the need to understand the factors that drive capital structure decisions in the banking sector. Myers (2001) contends that there is no universal theory of the debt-equity choice, suggesting that variations are to be expected. According to Lim et al. (2012), capital structure represents the means by which a firm secures the necessary funds to finance its operations.

In contemporary finance, as it directly affects the cost of capital and, by extension, shareholder wealth. Modigliani and Miller's (1958) pioneering work on capital structure has led to extensive research, particularly in developed economies, to understand the factors influencing firms' capital structure choices. Various studies have identified key determinants of capital structure. For instance, Ashenafi (2005) found negative correlations between the debt-to-equity ratio and factors Similarly, Maghyereh (2005) explored significant value of, growth, age, size, earnings volatility, and non-debt tax shields on capital structure. Octavia and Brown (2008) support the view that traditional determinants of capital structure also apply to banks in developing countries, where the banking system plays a crucial role in economic growth (Levine, 1997).

Research has also examined the impact of capital structure on financial performance. Ronoh and Ntoiti (2015) found that capital structure negatively impacts the financial performance of Kenyan commercial banks, measured by return on assets. Bokhari and Ali (2009) assert that capital adequacy is crucial for banks to manage risks and maintain stability. Bank profitability, a key indicator of financial health, is influenced by factors such as capitalization, lending activities, credit risk, and cost management (Ramadan et al., 2011). However, the relationship between bank size and profitability remains a subject of debate, with studies like Goddard et al. (2004) finding no significant correlation.

Capital structure refers to the mix of debt and equity a firm employ, with the optimal combination being one that maximizes firm value while minimizing capital costs. The trade-off theory suggests that firms can achieve an optimal capital structure by balancing the benefits of debt, such as tax deductibility, against its costs, including the risk of bankruptcy (Fama & French, 2002). Jensen's (1986) free cash flow theory posits that higher debt levels can enhance firm value by reducing the free cash flow problem, despite the potential risks of financial distress.

In the banking sector, capital structure decisions are particularly crucial due to their impact on profitability and risk management. Almazari (2013) found a positive correlation between ROA ROE, BS, but a negative relationship with CAR and the cost-to-income ratio. The role of capital adequacy in limiting investment risk and influencing profitability is further highlighted by Mathuva (2009), who observed varying effects of different capital adequacy measures on profitability.

Research on capital structure in Nepal is still emerging but gaining importance. Ghimire et al. (2016) analyzed the determinants of capital structure and profitability, with liquidity and BS. On the other hand, Pradhan and Pokharel (2016) reported no significant influence of capital structure on corporate performance. Other studies, such as Bam et al. (2015), found a positive correlation of the DTA and ROA in Nepalese banks, while Poudel (2006) emphasized the importance of interest income from loans in driving bank profits.

In conclusion, capital structure remains a complex and multifaceted area within corporate finance, with varying theories and empirical evidence offering different insights depending on the context and specific factors considered. Consequently, this

research seeks to comprehensively assess the impact of capital structure and profitability of Nepalese commercial banks.

1.2 Statement of the problem

The financial industry is inherently risky and, therefore, is subject to extensive regulation by governments and central banks in most countries. Regulatory agencies play a critical role in maintaining oversight of banks, given that their performance is essential to the proper functioning of the economy. The primary objective of banking regulators is to establish a framework that is both suitable and effective for banks, particularly in managing their risk (Rose & Hudgins, 2008).

The issue of which factors influence capital structure decisions continues to be unresolved. For years, the determinants of capital structure have been a contentious issue within corporate finance literature. The ongoing debate is fueled by the fact that only theories often yield different, sometimes conflicting, conclusions (Rajan and Zingales, 1995). As highlighted by Morri and Beretta (2008), despite numerous theoretical frameworks and empirical studies examining these matters, a universally accepted or well-supported theory has yet to emerge. As a result, the debate surrounding the importance of the determining factors remains inconclusive.

Octavia and Brown (2008) note that the capital structure of banks is still a relatively understudied topic within banking literature. The distinct features of deposit contracts, the high level of leverage in the banking sector, and the regulatory have historically led to the exclusion of banks and financial institutions from empirical studies on standard capital structure choices. Nikoo (2015) explained a positive impact of capital structure decisions on the profitability of the banks in his sample. Likewise, Umar et al. (2012), analyzing data from 100 publicly listed companies between 2006 and 2009, found a strong positive correlation between capital structure and firm performance. The study evaluated performance using return on assets (ROA), earnings per share (EPS), and net profit margin, while capital structure was represented by short-term debt to total assets (STDTA), long-term debt to total assets (LTDTA), and total debt to total assets (TDTA). In a similar study, Salteh et al. (2012) examined how capital structure decisions impacted the profitability of 28 companies listed on the Tehran Stock Exchange concluding that capital structure

variables positively influence firm performance. Over the last few decades, capital structure has been a highly debated topic and a subject of considerable academic interest across different sectors in corporate finance literature, with ongoing research attention (Niresh, 2012).

Akdal (2010) demonstrated that profitability and growth are negatively related to leverage, while size and tangible assets are positively related. Similarly, Gaud et al. (2005) concluded that size and tangible assets have a positive relationship with leverage, whereas growth and profitability are negatively related. Cole (2008), in a study on small enterprises in the USA, found that leverage is negatively associated with size and profitability but positive to tangible assets. Bas et al. (2009) explored the impact of capital structure in small and medium enterprises (SMEs) in developing countries, discovering that tangible assets and profitability, which are negatively related to leverage, are the main determinants. Size and growth are positively related to leverage according to the study of the research. Ramlall (2009) identified a positive correlation between firm size and leverage, along with a negative correlation between tangible assets and leverage, was observed, indicating that larger firms are more inclined to issue debt due to reduced bankruptcy costs stemming from market confidence, whereas smaller firms prefer lower debt levels to avoid the risk of liquidation during financial distress. In contrast, Faris (2010) found a negative relationship between leverage and firm size, while Teker et al. (2009) reported that the coefficient for firm size is statistically insignificant and close to zero.

Wippern (1966) used the debt-to-equity ratio and earnings-to-market ratio across various industries and found a positive relationship between debt and profitability. Similarly, Margaritis and Psillaki (2010) observed that the debt ratio positively impacts firm performance. Amsaveni (2009) reported a negative relationship between leverage and future growth, particularly for firms whose growth opportunities are either not recognized by the capital markets or are insufficiently valuable to outweigh the negative effects of debt. The study also confirmed that leverage does not hinder growth for firms known to have promising profit opportunities.

In the context of Nepal, Ghimire et al. (2016) found that profitability, followed by liquidity and bank size, are the major factors influencing the capital structure of

Nepalese commercial banks. Rajbahak et al. (2014) found that board size, firm size, and firm growth have a positive and significant effect on ROE and ROA

Pradhan and Pokharel (2016) found no significant link between capital structure and corporate performance, whereas Khadka (2006) identified a negative correlation between leverage and the overall cost of capital. Similarly, Bhattarai (2016) reported a negative relationship between capital structure and the performance of manufacturing firms in Nepal. On the other hand, Neupane (2013) observed a positive association between the debt-to-equity ratio and the operational efficiency of banks. While there is empirical evidence on the impact of capital structure on profitability across various contexts and countries, as well as some studies in Nepal, research focusing specifically on the effect of capital structure on the profitability of Nepalese commercial banks remains scarce.

The research aims to address the following questions:

- What is the current state of capital structure and profitability of Nepalese commercial banks?
- Is there a relationship between capital structure and profitability in commercial banks in context of Nepal?
- What is the impact of capital structure and profitability of commercial banks in context of Nepal?

This research question seeks to examine the capital structure of Nepalese commercial banks has been evolving in response to regulatory mandates and market conditions. These banks maintain a mix of equity and debt, with a significant focus on bolstering their equity base to comply with Nepal Rastra Bank's (NRB) capital adequacy requirements under Basel III regulations. This has led to banks raising additional capital through rights issues and retaining earnings. While the equity capital has been strengthened, the reliance on debt, particularly long-term borrowings, has been cautiously managed to avoid excessive financial risk. Profitability in these banks is assessed through indicators such as Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). Although some banks have reported stable profitability, factors such as increasing competition, rising non-performing assets (NPAs), and changing regulatory environments have created challenges. Overall,

profitability remains stable but under pressure, with banks needing to balance growth with prudent risk management.

A balanced capital structure, where equity and debt are optimally managed, can positively influence profitability by providing financial stability and reducing the cost of capital. Banks with a higher equity base tend to have better capital adequacy, which can enhance investor confidence and allow for competitive lending, thereby improving profitability. Conversely, a capital structure heavily reliant on debt can lead to increased interest expenses, which might reduce profitability unless the debt is used effectively to finance high-return investments. However, the relationship is not always linear—excessive equity might lead to under-leveraging, while too much debt could result in financial distress. Therefore, the relationship between capital structure and profitability varies depending on how well banks manage their capital in response to market conditions and regulatory requirements.

A well-structured balance between equity and debt can provide the bank with the financial stability needed to manage risks effectively, thus supporting sustained profitability. A lower cost of capital, achieved through a judicious mix of equity and low-cost debt, can lead to higher profit margins by reducing interest expenses. However, if a bank has an overly leveraged capital structure, the burden of interest payments can diminish profitability, especially in adverse economic conditions or when non-performing assets rise. Furthermore, regulatory constraints on capital adequacy can limit the extent to which banks can use debt to enhance returns, potentially dampening profitability. The overall impact is also moderated by external factors such as economic conditions and internal factors like management efficiency, making it crucial for banks to carefully strategize their capital structure to optimize profitability.

1.3 Objective of study

The main purpose for research is to analyze the impact of capital structure and profitability of Nepalese commercial banks.

The specific objectives are as follows:

- To explore the current situation of capital structure and profitability of Nepalese commercial banks.

- To analyze the relationship between capital structure and profitability of Nepalese commercial banks.
- To analyze the impact of capital structure and profitability of Nepalese commercial banks.

1.4. Rationale of the study

The study is focused on analyzing the impact of capital structure and profitability of commercial banks in context of Nepal. It focuses on studying the relationship among different dependent variables and independent variables. Manager and potential investors are always concerned about the capital structure and profitability ratios of organization. First, even though research studies related to the area of capital structure decisions are plenty, those that are concerned in the financial system of developing countries are few. This study, therefore, attempts all its best to contribute to the literature by assessing the capital structure decision determining firm-specific factors of commercial banks in the developing countries like Ethiopia. Second, the study will have great importance to external investors and shareholders, bank managers, lenders, and policy makers in making knowledgeable decisions and regulations considering the financing patterns of the banking sector in Nepal. Finally, the study notably contributes to other studies to be made in different economic sectors by providing the picture of the firm level factors determining capital structure decisions of commercial banks in Nepal by serving as a reference point.

This study examines the impact of various factors such as, capital adequacy ratio, DTA, DTE, BS, STDA on the profitability of the commercial banks. All these information helps to make bank officials regarding to increase profit in baking industry. Hence, it is useful for policy formulators and academic professionals, students particularly those involves in commerce, financial institutions to formulate policies and plans based on the performance of the banks. Therefore, the study findings will benefit management and staff of banks who will gain insight into the importance of managing these variables and its effect on profitability. The findings also useful for the government sectors for collecting more taxes and boost that sector. Hence, this study is important for them to assess the impact of various factors on profitability. Anderson (2002) found that firms with high liquid assets prefer high degree of long-term leverage without changing the structure of their liquid assets. Liquid assets are a guarantee that in times of lower earnings, or when it is difficult for

a company to get financed on the capital market, or when the cost of capital is extremely high, can survive such situations.

Demirguc-Kunt et al. (2013) focused on banks' capital effect on stock returns during the global financial crisis. They examine whether well-capitalized banks were viewed more positively by the market during the crisis and hence experienced higher stock returns. Tarazi (2013) found that the growth opportunities have a dominant role in explaining the variation in the total debt ratio of companies.

The analysis of determinant of capital structure of commercial banks in Nepal plays vital role in the managerial decision. Every organization must analyze its capital structure in every step of its operation, promotion, and expansion. This research will aid Nepalese commercial banks in enhancing their financial performance by identifying the optimal capital structure. It provides valuable insights to shareholders, management, regulators, and other stakeholders of commercial banks.

CHAPTER II
LITERATURE REVIEW

2.1 Introduction

This section aims to review the literature on impact of capital structure and profitability of commercial banks in context of Nepal. A literature review involves a thorough analysis of existing research, including summarizing, classifying, and comparing previous studies, as well as reviewing theoretical works. It is organized into three parts. The first part provides a theoretical framework, offering a detailed examination of related research in the banking sector across both developed and emerging markets. This section also includes various studies on the interactions among different variables and a brief overview of empirical research within Nepal. The second part presents the study's conceptual framework, detailing its organization and the selection of various variables. Finally, the third part provides concluding remarks and reflections on the empirical review.

2.2 Theoretical Review

Anderson (2002) found that firms with high liquid assets prefer high degree of long-term leverage without changing the structure of their liquid assets. Liquid assets are a guarantee that in times of lower earnings, or when it is difficult for a company to get financed on the capital market, or when the cost of capital is extremely high, can survive such situations. Such firms will avoid riskier projects that might bring them 12 higher profit and for that reason growth of the company will be slower.

Zafar et al. (2016) explored how capital structure influences the performance of Pakistani banks, focusing on a sample of 25 banks listed on the Karachi Stock Exchange (KSE) or registered with the State Bank of Pakistan (SBP). The study aimed to determine whether capital structure functions as an effective strategy within Pakistan's financial sector, especially in the banking industry. By employing multiple regression models to analyze the relationship between capital structure and bank performance, the research identified a positive link between capital structure variables and the performance of the banking sector.

Demirguc-Kunt et al. (2013) focused on banks' capital effect on stock returns during the global financial crisis. They examine whether well-capitalized banks were viewed more positively by the market during the crisis and hence experienced higher stock returns. Tarazi (2013) found that the growth opportunities have a dominant role in explaining the variation in the total debt ratio of companies.

Sharma (2011) highlighted the importance of financial ratios like earnings per share and dividends per share in determining market prices in the Indian context, which can be analogized to the banking sector where capital structure ratios such as Debt-to-Equity and Total Debt-to-Total Assets play a crucial role in shaping profitability. Banks that effectively balance their debt and equity levels can potentially optimize their cost of capital, thereby enhancing their profitability.

Quy and Loi (2016) investigated the impact of economic factors on financial markets and concluded that GDP and inflation significantly influence stock prices. For commercial banks, the Capital Adequacy Ratio and overall bank size are critical in determining how capital structure impacts profitability. Larger banks with higher capital adequacy are generally more resilient to economic fluctuations, allowing them to maintain stable profitability even during periods of macroeconomic instability. This resilience is crucial for long-term financial sustainability in the banking sector.

2.3 Empirical Review

A literature review is a deliberate overview of existing research, discussions, and findings on a particular topic. It involves summarizing and analyzing current knowledge in the field of inquiry. The review critically identifies similarities and differences across previous related studies. In this study, the literature review is structured as follows:

2.1.1 Review of literature on capital structure and profitability

2.1.2 Review of literature in Nepalese context

2.1.1 Review of literature on capital structure and profitability

This section consists of review of earlier literature related to the interrelationship between capital structure and profitability of the banks. It reviews the empirical works along with the major conclusions. The summary of major studies on capital structure and profitability are shown in Table 2

Table 1

Review of literature on capital structure and profitability

Studies	Major Findings
Appiadjei (2014)	There is a direct relationship of capital structure and profitability.
Zafar et al. (2016)	There is a positive correlation of capital structure and profitability.
Hailu (2015)	There is a negative relation between capital structure and the profitability.
Nguyen and Nguyen (2015)	Capital structure is negatively correlated to the firm's performance.
Goyal (2013)	There is an inverse impact of profitability and capital structure.
Awunyo and Badu (2012)	There is a negative impact of capital structure and profitability.
Chechet and Olayowola (2014)	There is inverse relation of capital structure and profitability.
Nikoo (2015)	There is a positive impact of capital structure and profitability.
Nirajini & Priya (2013)	There is a positive relationship between capital structure and profitability.
Caprau and Ihnatov (2014)	Profitability of a bank is positively related with the capital adequacy ratio.
Asikhia & Sokefun (2013)	There is a positive impact of CAR and ROE.
Christian et al. (2008)	Profitability of a bank is influenced by higher capital requirement.
Datta (2018)	CAR has positive impact on ROE
Ajay and Olatayo (2019)	There is strong positive impact of CAR and ROA
Nguyen (2020)	CAR is positively related with ROA.

Appiadjei (2014) explored the effect of capital structure and ROA and ROE in commercial bank. The research used eleven years of data of the sampled ten banks composed of the financial statements of the concerned banks during 2006-2016. The population of this study was all banks operating in Pakistan i.e. conventional and Islamic banks. The study used independent samples T-test for finding the comparison between the capital structure of Islamic and conventional banks while regression analysis (Fixed effects model) was used for assessing the impact of capital structure on profitability. The results showed that the capital structure of both types of banks was similar except for bank size which differed significantly. Moreover, ROA was negatively correlated to the capital structure of both conventional and Islamic banks. In contrast, ROE was positively correlated to the capital structure of both conventional and Islamic banks. In addition to that, two explanatory variables were positively correlated while two were negatively correlated to EPS for both Islamic and conventional banks. This study proved the existence of prominent theories of capital structure (pecking order theory and trade-off theory) for both conventional and Islamic banks in Pakistan and also validates the economies of scale.

Zafar et al. (2016) examined the impact of capital structure on the performance of banks in Pakistan, using a sample of 25 banks that were either listed on the Karachi Stock Exchange (KSE) or classified as scheduled banks by the State Bank of Pakistan (SBP). The research primarily explored whether capital structure was a suitable policy for implementation in Pakistan's financial sector, particularly within the banking industry. By employing multiple regression models to estimate The study showed a positive link between capital structure factors and the overall performance of the banking sector, highlighting a favorable relationship between capital structure and bank performance.

Hailu (2015) examined the effect of capital structure on the profitability of core business operations in Ethiopian commercial banks. The study analyzed a sample of eight banks, consisting of two state-owned and six private institutions, using panel data covering a twelve-year period (2002 to 2013) with 96 observations. The research aimed to explore the link between capital structure variables and the profitability of core banking operations in Ethiopia, while also evaluating how financing decisions or capital structure influenced profitability. Descriptive statistics and multiple regression models were applied, along with various diagnostic tests to ensure the model's validity based on the assumptions of the Classical Linear Regression Model. The results indicated that capital structure had a significant negative effect on the profitability of commercial banks' core business operations.

Goyal (2013) examined the influence of capital structure on the profitability of public sector banks in India. The study used the sample of banks, which are listed on national stock exchange. The data for study was collected from audited financial statements of listed banks, website of National Stock Exchange (NSE) and Reserve Bank of India. The study used regression models to find out The study investigated the relationship between capital structure characteristics and bank performance, concluding that there is an indirect relationship between capital structure and profitability.

Vitor & Badu (2012) explained the impact of capital structure and performance of listed bank in Ghana. The sample was used data on banks listed on the Ghana Stock Exchange over a period of ten years spanning from 2000 to 2010. The data were collected from different sources including audited accounts of the listed banks as well

as from the fact book of the Ghana Stock Exchange data on banks listed on the Ghana Stock Exchange over a period of ten years spanning from 2000 to 2010. The study used panel regression methodology. The study concluded that banks listed on the Ghana Stock Exchange were heavily leveraged, which negatively impacted their performance. It highlighted that the high level of gearing among these banks could be attributed to their reliance on short-term debt, influenced by the relatively high Bank of Ghana lending rates and limited bond market activity. The regression analysis further indicated that capital structure had an inverse relationship with the performance of the listed banks.

Chechet and Olayowola (2014) investigated the relationship between capital structure and profitability of firms listed in Nigeria. Particularly the study focused on assessing the impact of debt ratio on firm profitability in Nigeria and studying the impact of equity financing on firm profitability in Nigeria. The study utilized panel data for the firms and applied fixed effects, random effects, and Hausman Chi-Square estimations for analysis. Capital structure was measured using two independent variables: the debt ratio (DR) and equity over time (EQT), while profitability (PROF) was the single dependent variable. The findings revealed a negative relationship between capital structure and profitability.

Nikoo (2015) explored the impact of capital structure and profitability of commercial bank. The study used the sample size of seventeen (17) banks. The data utilized in the study was sourced from the Tehran Stock Exchange, covering a six-year period from 2009 to 2014. A model was developed to assess the impact of capital structure on bank efficiency, with efficiency measured through return on assets (ROA), return on equity (ROE), and earnings per share (EPS).The study found that capital structure had positive impact on bank profitability. The significant levels were positive between dependent variable and independent variable which the study such as ROE, EOA, EPS and debt to equity.

Nirajini & Priya (2013) analyzed the impact of capital structure and profitability of firms in Sri Lanka. The research study used the sample size of 11 trading listed companies of Sri Lanka. And seven years data were collected to analyze the financial performance of the companies. Particularly the study focused on identifying the company's capital structure, relationship between debt and equity, and factors

determining the optimal capital structure. The study used correlation and multiple regression analysis. Capital structure and financial performance. The findings revealed a positive correlation between capital structure and financial performance, demonstrating that capital structure significantly affects profitability. The results indicated that the debt-to-asset ratio, debt-to-equity ratio, and long-term debt were associated with both the gross profit margin (GPM) and net profit margin.

Capraru and Ihnatov (2014) conducted an analysis of bank profitability in selected Central and Eastern European countries from 2004 to 2011. The study examined a sample of 143 commercial banks across Romania, Hungary, Poland, the Czech Republic, and Bulgaria. The research was carried out in two distinct stages. First, the study assessed the impact of various determinants of bank performance on profitability. To measure bank profitability, the study used commonly applied ratios: ROE, ROA, the second stage, the researchers conducted a robustness test by introducing a "crisis" dummy variable for the period from 2008 to 2011, aiming to capture the effects of the global financial crisis. The data for this analysis was sourced from the ECB Statistical Data Warehouse. The findings revealed that the capital adequacy ratio has positive impact on profitability ratios, indicating that banks with higher capital adequacy tend to be more profitable.

Asikhia and Sokefun (2013) investigated the impact of capital adequacy on the profitability of deposit-taking banks in Nigeria. They surveyed 518 bank employees using questionnaires, achieving a response rate of 76%. The research incorporated both primary data, gathered through questionnaires, and secondary data, derived from the published financial reports of banks for the period 2006 to 2010. The analysis of the primary data showed an insignificant relationship between capital adequacy and profitability. Nevertheless, the analysis of secondary data uncovered a positive and significant link between the two variables, suggesting that capital adequacy is crucial in affecting the profitability of deposit-taking banks in Nigeria.

Christian et al. (2008) evaluated the effect of CAR on profitability of banks. The study used multivariate panel OLS regression model for analysis. Profitability of commercial banks were measured in terms of relevant influencing variables as: assets turnover, size of firm, capital adequacy ratios. The result revealed that the CAR had positive impact on the profitability of the commercial banks. Moreover, the positive

relationships within profitability and various capital adequacy ratios emphasized the fact that higher capital adequacy ratios would enhance profitability of a bank. This study could shed light on earlier argument regarding stringent bank regulation and supervision on capital management.

Datta (2018) explained the impact of capital structure and profitability of commercial bank. Determinants of banks' profitability like ROA and ROE have been assessed by the panel data (232 observations) of 29 listed banks out of 30, for the time of eight years (2007-2014). These sample banks cover approximately 62% of total banking sector asset in the year 2014 in Bangladesh. In this study, profitability has been quantified in terms of regulatory capital, operating efficiency, bank's asset size, loan structure and leverage. This study found that the regulatory capital held by banks is greater than the minimum capital requirement guided under Basel II accord. Again, it has been showed that explanatory variables like capital adequacy, operating efficiency and loan structure are positively related to profitability of a bank.

Ajayi and Olatayo (2019) explored the impact of the Capital Adequacy Ratio (CAR) on the profitability of Deposit Money Banks (DMBs). The study analyzed data from a sample of eight commercial deposit money banks, using the OLS method through SPSS 20.0. The research focused specifically on DMBs with international operating licenses in Nigeria for the year 2017. The findings revealed a strong positive correlation of 0.846 (84.6%) between CAR and the profitability of these banks. Based on the results, the study concluded that there is a significant positive relationship between capital adequacy and the profitability of DMBs in Nigeria, indicating that CAR plays a crucial role in profit planning and capital structure decisions. Additionally, the study recommended that regulators should not only prioritize capital adequacy but also emphasize strategic monitoring and evaluation to sustain the financial strength and stability of banks in Nigeria.

Nguyen (2020) analyzed the impact of CAR on the profitability of banks. In addition to the capital adequacy ratio, the research controlled for several potential determinants of profitability, including bank-specific factors (such as capital adequacy ratio, net interest margin, non-performing loans, non-interest income, ownership structure, and a regulatory variable representing the bank's adoption of

Basel standards) and macroeconomic indicators (such as GDP growth rate and inflation rate). The study revealed that CAR NIM, and non-interest income are positively associated with profitability indicators, while non-performing loans and state ownership negatively impact bank profitability. The study further differentiated the effects of capital adequacy on profitability by dividing the sample into two subgroups: large-sized banks and small-sized banks. It was observed that capital adequacy positively influenced ROA for small-sized banks but had no significant effect on profitability for large-sized banks in Vietnam. Additionally, the study revealed that the implementation of Basel II had no significant correlation with ROA or ROE for large banks, whereas it was statistically significant for the profitability of small banks.

2.1.2 Review of literature on Nepalese context

This section consists of review of earlier literature conducted on Nepalese context. The summary of major studies on is shown in Table 3.

Table 2

Review of literature on Nepalese context

Studies	Major Findings
Baral (2004)	There is a statistically significant relationship between bank size of capital structure.
Singh and Singh (2016)	There is a significant negative relationship between debt and profitability.
Silwal (2016)	There is a positive relationship between leverage and profitability.
Bhattarai (2016)	Liquidity has significant positive impact on capital structure with size
Singh (2017)	There is positive relationship between capital structure and earnings per share
Pandey (2017)	There is negative correlation between capital structure and profitability.
Parajuli (2016)	The relationship of capital adequacy is positive and significant with return on assets
Pradhan and Khadka (2017)	There is a positive relationship of banks' profitability with STDR with bank
Acharya (2019)	Long term debt to asset total debt to asset is significant to ROE and ROA.
Shrestha (2017)	Profitability is negatively related to total assets ratio.
Shrestha (2015)	The Debt to Asset ratio of NABIL, HBL and NIBL is insignificant.
S and Jain (2020)	ROE is positively corelated with LTD and deposits.
Poudel (2018)	A capital adequacy ratio total asset has significant positive impact on profitability.
Neupane (2013)	There is a positive relationship between capital adequacy and profitability.
Tuladhar (2017)	Capital adequacy ratio has a positive impact on bank performance.

Baral (2004) explored the impact of capital adequacy and profitability of commercial bank. The study used multiple regression analysis to measure the capital structure of commercial bank. In the model specification, return on assets (ROA) and return on equity (ROE) were designated as the dependent variables, while the independent variables included the capital adequacy ratio (CAR), liquidity ratio (LR), bank size (BS), and asset quality (AQ). Initially, the analysis encompassed manufacturing companies, commercial banks, insurance firms, and finance companies. However, due to an anomalous sign issue in the model's constant term, manufacturing companies were excluded from the final analysis. The study found that size, growth rate, and earnings rate are statistically significant factors influencing the capital structure of the listed companies.

Singh and Singh (2016) investigated the Impact of Capital structure on firm's profitability. The objective of this study is to investigate the impact of capital structure on firm's profitability through the selected cement companies in India. The study is based on secondary data i.e. five years financial statements collected from PROWESS data base of CMIE. Profitability was assessed using return on assets and return on equity as the dependent variables. The independent variables included capital adequacy ratio, non-performing loan ratio, cost per loan asset, and cash reserve ratio. The study employed descriptive statistics and correlation analysis for its methodology. The findings revealed a significant negative correlation between debt and profitability, indicating that companies with a higher debt ratio generally experience lower profitability.

Silwal (2016) examined on asset liquidity and capital structure in the Nepalese context. The data was gathered from non-financial listed firms from 2005 to 2014. Multivariate regression analysis was employed to answer the study question as to what extent liquidity influences on capital structure. Result revealed that decision making on the capital structure is highly influenced by liquidity position of the nonfinancial firms. It showed that leverage is positively associated to liquidity. The study revealed that the firm should focus on the liquidity management to have financing decision on the capital structure which augment the firm value in long-run perspective.

Bhattarai (2016) examined the effect of liquidity on capital structure of Nepalese manufacturing companies. The pooled data of 5 manufacturing companies for the period of 2008 to 2014 was analyzed using regression model. The descriptive and causal comparative study design was adopted for the study. The firm size is also significantly negatively related to capital structure. Growth and dividend have positive but statistically insignificant impact on capital structure. The regression results revealed that liquidity is significantly negatively associated with capital structure. The study concluded that liquidity has significant impact on capital structure with controlling the effect of firm size. Larger size manufacturing companies in Nepal borrow less as compare to that of small size.

Singh (2017) examined the impact of interest rates on the profitability of commercial banks in Nepal. The study utilized return on assets (ROA) and earnings per share (EPS) as the dependent variables, while independent variables included capital adequacy ratio, liquidity, loan rate, deposit rate, bank rate, Treasury bill rate, and reverse repo rate. Data were obtained from the Banking and Financial Statistics and Supervision Report issued by Nepal Rastra Bank, as well as from the annual reports of selected banks. Regression models were used to evaluate the significance and influence of interest rates on the profitability of Nepalese commercial banks. The results showed that capital adequacy, loan rate, and liquidity were positively and significantly related to earnings per share. Moreover, while the deposit rate had a positive and significant effect on earnings per share, both the Treasury bill rate and deposit rate were negatively correlated with return on equity.

Pandey (2017) investigated the influence of capital structure on the financial performance of 23 commercial banks in Nepal over the period from 2009/10 to 2014/15. The study utilized regression models to evaluate the significance and effects of capital structure on the financial performance of these banks. Earnings per share (EPS) and Tobin's Q were employed as dependent variables, while independent variables comprised the capital adequacy ratio, debt-to-asset ratio, debt-to-equity ratio, firm size, long-term debt, and inflation. The results revealed that the capital adequacy ratio exhibited a negative correlation with EPS and Tobin’s Q in private sector banks. Similarly, in joint venture banks and Nepalese public commercial

banks, the capital adequacy ratio was also found to be negatively correlated with both EPS and Tobin's Q.

Parajuli (2016) examined the factors influencing the profitability of both domestic and foreign commercial banks in Nepal. The study analyzed return on assets (ROA), return on equity (ROE), and net interest margin (NIM) as the dependent variables. The independent variables included capital adequacy, asset quality, liquidity, and bank size. The analysis was conducted using a panel dataset that encompassed 18 domestic and 6 foreign commercial banks in Nepal over the period from 2008/09 to 2012/13. A multiple regression model was utilized to assess the relationships between the dependent and independent variables. The findings revealed a positive and significant relationship between capital adequacy and ROA, ROE, and NIM. Additionally, asset quality was positively associated with bank profitability. Liquidity also showed a positive relationship with profitability, significantly affecting ROA, ROE, and NIM. Furthermore, bank size was positively related to ROA, ROE, and NIM for both domestic and foreign commercial banks.

Pradhan and Khadka (2017) investigated the impact of debt financing on the profitability of commercial banks in Nepal. The profitability of the banks was assessed using return on assets, return on equity, and net interest margin as the dependent variables. The independent variables included short-term debt to total assets, long-term debt to total assets, total debt to total assets, debt-to-equity ratio, interest coverage ratio, and bank size. Data were obtained from various editions of the Banking and Financial Statistics and Bank Supervision Report published by Nepal Rastra Bank, as well as from the annual reports of selected commercial banks. The study utilized a sample of 148 observations from 22 commercial banks in Nepal for the period 2008 to 2014. Regression models were applied to evaluate the significance and impact of debt financing on the profitability of these banks. The findings revealed a positive association between bank profitability and short-term debt to total assets, interest coverage ratio, and bank size, indicating that increases in these factors lead to higher bank profitability. Conversely, profitability was negatively related to long-term debt to total assets, total debt to total assets, and the debt-to-equity ratio. The regression analysis showed that beta coefficients were positively significant for short-term debt to total assets, interest coverage ratio, and bank size in relation to

profitability, while they were negatively significant for long-term debt to total assets, total debt to total assets, and debt-to-equity ratio.

Acharya (2019) analyzed the relationship of capital structure and bank performance of commercial banks in Nepal. The study used the sample size of eleven commercial banks based on availability of data. This study had been conducted with the secondary data obtained from the financial statements; annual publications of NRB and even from the official website of respective banks for period 2008-2015.The study used four independent variables total debt to equity ratio, long term debt to assets, short term debt to assets and total debt to assets. Profitability was the dependent variable and measured by the return on assets (ROA) and return on equity (ROE) to determine the variables. A multiple regression model was utilized to analyze the data. The study found that long-term debt to assets, total debt to assets, and total debt to equity ratios are statistically significant with respect to return on equity (ROE) and return on assets (ROA).

Shrestha (2015) examined capital structure management of commercial banks. Specifically, the study examined the capital structure of commercial banks to examine the correlation and the significance of their relationship between different ratios related to capital structure to analyze the debt servicing capacity of the sample banks and to analyze effect of capital structure on ROA, ROE and Dividend payout Ratio. The study made sample size of three commercial banks. The study used net income approach. The findings of the study revealed that The Debt to Asset ratio of NABIL, HBL and NIBL is insignificant because long term Debt is negligible compared to Total assets. Overall debt asset ratio of NABIL is low. Its average ratio is 3%. Similarly, Debt asset ratio of HBL is quite steady even their ratios are low. The average ratio of HBL is 4%. On the other hand the average Debt to Asset ratio of NIBL is similar to NABIL which is 2%.

S and Jain (2020) explored the impact of the capital structure and the profitability of commercial bank. The study collected financial NRB BI Statistics and Bank Supervision Report for the period of 2010-2019. Return on Equity (ROE) was employed as a measure of profitability, while short-term debt, long-term debt, deposits, and the total debt-to-assets ratio were used as proxies for capital structure, alongside control variables such as bank size and asset growth. The study found that

over 40 percent of bank profitability, as indicated by ROE, is explained by the capital structure variables. It was revealed that ROE has an insignificantly positive relationship with long-term debt and deposits, while it shows an insignificant negative association with short-term debt and total debt. Across all regression models, profitability was found to be significantly positively associated with bank size, suggesting that larger banks tend to provide higher returns for shareholders.

Poudel (2018) explored the impact of capital structure on the profitability of commercial banks in Nepal. The study utilized data from a sample of 15 commercial banks within the Nepalese economy over the period from 2002/03 to 2014/15. Employing a One-Way Fixed Effect Model (FEM) for panel data analysis, the study assessed bank profitability using return on equity (ROE) and examined its relationship with various bank-specific and macroeconomic variables. The results indicated that capital structure had a significant negative effect on the profitability of Nepalese commercial banks. Additionally, the study found that the solvency ratio, interest spread rate, and inflation had an insignificant negative impact on profitability. In contrast, the capital adequacy ratio, total assets, and GDP growth were shown to significantly positively influence profitability. Moreover, the inter-bank interest rate was found to have an insignificant positive effect on profitability.

Neupane (2013) investigated the change in efficiency and productivity of banking industry during the period of 2007/08 to 2011/12. The study used methodology of Malmquist Index as to measure the efficiency and productivity whereas Tobit regression was used as to analyze the determinants of efficiency. The study collected the data from the annual financial statements of banks. Overall, the results showed that the productivity change of commercial banks in Nepal has improved over the sample period and that the increase in productivity change in Nepalese commercial banks is due to the technical progress rather than efficiency components. The study also noted that the decrease in efficiency is attributable to reductions in both pure efficiency and scale efficiency. The Tobit regression model identified a positive relationship between the debt-to-equity ratio and efficiency, as well as between capital adequacy and efficiency. Additionally, banks that are more profitable, with lower leverage and higher capital adequacy ratios, were found to be more efficient.

Moreover, bank loans appear to be valued more highly than alternative bank outputs, such as investments and securities.

Tuladhar (2017) examined the effect of credit risk management on the profitability of commercial banks in Nepal. The study aimed to identify indicators of financial performance for Nepalese commercial banks and to determine the relationship between the factors influencing risk management and financial performance indicators. A sample of 28 commercial banks was analyzed over the period from 2011 to 2015. The research employed pooled regression analysis and panel data analysis. In the model, return on assets (ROA) and return on equity (ROE) were used as indicators of bank profitability, while capital adequacy ratio (CAR), liquidity ratio (LR), bank size (BS), asset quality (AQ), leverage ratio (LER), non-performing loan ratio (NPLR), cash reserve ratio (CRR), coverage ratio (CR), and the number of female board members (FBM) were utilized as indicators of credit risk management. The results revealed that credit risk management significantly affects the profitability of Nepalese commercial banks. Specifically, the coverage ratio, capital adequacy ratio, and bank size positively influence bank performance, whereas the leverage ratio, non-performing loan ratio, and the number of female board members have a negative impact on performance. However, the liquidity ratio, asset quality, and cash reserve ratio were found to be insignificant in determining bank performance.

Shrestha (2017) investigated the effect of credit risk management on the profitability of Nepalese commercial banks, focusing on the correlation and significance of various ratios related to capital structure. The study analyzed a sample of 18 commercial banks in Nepal, utilizing 118 observations. Return on assets and return on equity were employed as the dependent variables, while the independent variables included capital adequacy ratio, non-performing loan ratio, cost per loan asset, cash reserve ratio, asset growth ratio, and leverage ratio. Data were gathered from bank supervision reports published by Nepal Rastra Bank and annual reports of selected commercial banks. The study applied descriptive statistics, correlation analysis, and diagnostic tests to validate the assumptions of the linear regression model. The regression models were used to assess the significance and impact of credit risk management on profitability. The findings indicated that capital adequacy ratio, cost per loan asset, and asset growth ratio were positively associated with both return on

assets and return on equity, suggesting that higher capital adequacy ratios lead to greater returns on assets and equity.

2.4 Research Gap

A substantial body of literature exists that examines the relationship between capital structure and profitability across various industries and geographical regions. These studies have explored factors like debt ratios, equity ratios, and capital adequacy, providing valuable insights into how these variables influence financial performance. However, there is a noticeable gap in the research when it comes to the specific context of Nepalese commercial banks. The existing literature seems to lack comprehensive studies that analyze the impact of capital structure variables—such as Total Debt to Total Assets, Capital Adequacy Ratio, and Bank Size—on the profitability of these banks. To address this gap, the present study aims to explore these relationships within the Nepalese banking sector, offering important findings that could benefit industry stakeholders and inform future financial strategies.

2.5 Limitation of the study

The Nepalese economy is in a phase of development, and the banking sector is still in its early stages. During this period, economic and financial institutional policies, acts, and regulations are evolving and undergoing reform. These factors significantly influence the efficiency of the banking sector. The relationship between capital structure and profitability in commercial banks remains a debated research topic, which this study aims to explore within the Nepalese context. However, every study faces limitations due to various factors, including institutional differences, study duration, data reliability, analytical methods, and variances. The following are the primary limitations of this study:

1.The study has employed linear regression model in analyzing the relationship between capital structure variables and performance of Nepalese commercial banks for the sake of simplicity. But some of the studies has evidence of using simultaneous equation model with partial correlation and regression model were also used.

2.This study follows the quantitative approach for the data analysis and inferences. However, the study could have considered the qualitative (complete, detailed description) approach as well.

3. There are other different models to analyze the collected data but only regression model is used to analyze the panel data to examine the relationship between firm & specific variables and efficiency level.

4. The study has used only Due to NRB and Due to BFIS for calculation of short-term debt to assets as other study has used other liabilities too.

5. No attempts are made to examine the reliability of the available secondary data since they are officially released by the related banks and Nepal Rastra Bank.

6. This research assumes that every bank operates in the same market. Therefore, the analysis is not based on bank & market segmentation.

7. The weakness points in this study are estimating the capital structure of one country only (there is no comparison between any countries).

CHAPTER III
RESEARCH METHODOLOGY

3.1 Research design

This study utilized both descriptive and causal-comparative research designs to address the core issues related to the relationship between capital structure and profitability in Nepalese commercial banks. The descriptive research design facilitates the identification and gathering of relevant information regarding the capital structure variables. This method entails the organized gathering and presentation of data to offer a thorough understanding of the context. Descriptive statistics are utilized in relation to variables such as the capital adequacy ratio, total debt to total assets ratio, total debt to equity ratio, bank size, and short-term debt to total assets ratio, to analyze the characteristics of the data concerning the capital structure and profitability of commercial banks.

This study also utilizes a causal-comparative research design to examine the relationship between capital structure and profitability in Nepalese commercial banks. The causal-comparative design is instrumental in identifying cause-and-effect relationships between various independent and dependent variables. This approach has been adopted to explore and comprehend the direction, magnitude, and nature of the observed relationship between the impact of capital structure and the profitability of Nepalese commercial banks.

3.2 Population and sample

Population refers to the entire group of people, events, or things of interest that the research wishes to investigate (Sekaran, 2003). The population of this research is the Nepalese commercial banks. A sample is a subset of the population. It comprises some members selected from it (Sekaran, 2003). To examine the relationship of capital structure and profitability of commercial banks in context of Nepal, this study contains a sample of 3 commercial banks of Nepal data are collected from 2012/13 to 2021/22 leading to a total of 30 observations. The variables used in the study are capital adequacy ratio, bank size, total debt to assets, total debt to equity, short term debt to assets, return on assets, return on assets. Annual secondary data are used in the

study. Overall, the period covered in study with respect to bank specific variables ranges from fiscal year.

3.3 Nature and sources of data and the instrument of data collection

The study is based on the secondary data which are gathered from 3 commercial banks in Nepal for the period of 10 years from 2012/13 to 2021/22. This sample size represents the 30 percent of the population which is representative and commendable of Nepalese commercial banks. The secondary data used are of annual in nature. Secondary data were obtained from the Banking and Financial Statistics and supervisory reports issued by Nepal Rastra Bank, as well as from the annual reports of the chosen commercial banks. Data pertaining to the dependent and independent variables of the sampled banks were collected and assigned unique codes for each bank, enabling easy identification and analysis.

3.4 Method of analysis

The primary objective of data analysis in this study is to assess the impact of capital structure on the profitability of Nepalese commercial banks. Consequently, this section discusses the statistical and econometric models employed for analyzing the secondary data. The study uses descriptive, correlation, and regression analysis methods.

Descriptive statistics are employed to present quantitative data in a manageable format, helping to simplify large datasets in a meaningful way (such as mean, standard deviations, minimum and maximum values) to explain the characteristics of the sample firms during the period from 2012/13 to 2021/22. Correlation is used to analyzed the variables using available statistical data, identifying the direction and magnitude of the relationship between two sets of variables. Additionally, regression analysis is a statistical technique used to estimate the relationships among variables, helping to determine the influence of independent variables on dependent variables both individually and in combination with other variables. This analysis includes various statistical tests of significance, such as the t-test and F-test, as well as linear regression analysis, to validate the models with SPSS.

3.5 Research framework and definition of variables

3.5.1 Conceptual Framework

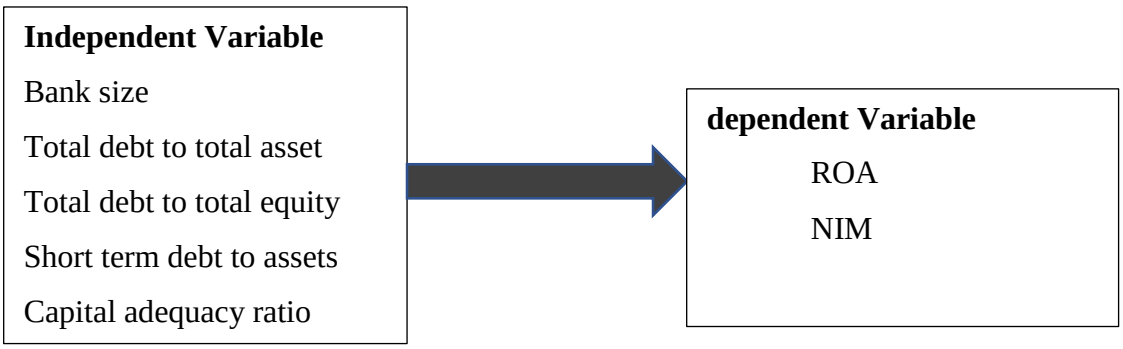

Figure 13.1*: Conceptual Framework*

Academic Research Journals

3.5.2 Definition of Variables

3.5.2.1 Dependent Variable

Return on assets (ROA)

Return on assets (ROA) is calculated as the ratio of net income to total assets. Often referred to as the firm's return on total assets, ROA assesses the overall efficiency of management in generating profit from the assets available to the firm. It indicates the profit earned per dollar of assets and reflects the effectiveness of bank management in utilizing the bank's real investment resources to generate profits (Naceur, 2003). Nassar (2016) found that a high level of debt has a negative impact on a firm's ROA. Antoniou et al. (2008) reported that the leverage ratio tends to decrease as a firm's profitability increases, and that the significance and effectiveness of profitability as a determinant are influenced by the legal and financial frameworks of the country. Phung and Le (2013) observed that firm performance metrics, such as ROA and ROE, are negatively impacted by capital structure, with ROA serving as an indicator of a company's profitability relative to its total assets.

Net interest margin (NIM)

Net interest margin is defined as the ratio of annual net interest income that is interest income less interest expense, to total assets (Maudos & Guevara, 2004). Mahdi and Abbes (2018) found that positive impact of the net interest margin on the liquidity of

the banking industry of conventional banks indicates that the most profitable banks maintain higher liquidity ratios. The study also showed that the net interest margin and loan growth rate are expected to adversely affect the liquidity buffer. The effects of bank's interest margin on the level of welfare of a country can be twofold. In cases when the margin is low, it usually indicates a competitive market with low intermediation costs for their clients. On the other hand, a high interest margin might reflect that bank are well-capitalized and stronger towards market shocks, benefiting high profit levels but this causes the clients to bear higher costs (Saunders & Schumacher, 2000). Kosmidou and Pasiouras (2005) found that significant positive relationship between credit to deposit ratio and net interest margin. Isah Serwadda (2019) found a positive relationship between bank size and net interest margin.

3.5.2.2 Independent Variable

Capital adequacy ratio

Berger (1995) investigated the relationship between return on equity and the capital adequacy ratio for a group of US banks. The study identified a significant positive correlation between return on equity and the capital adequacy ratio. Similarly, Diamond and Raghuram (2000) demonstrated that higher bank capital decreases the likelihood of financial distress. Umoru and Osemwegie (2016) found that capital adequacy plays a crucial role in enhancing the financial performance of banks. Furthermore, Aruwa and Musa (2014) established a significant positive association between capital adequacy and the financial performance of banks. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between capital adequacy ratios and bank profitability.

Total debt to total assets ratio

Berger (1995) investigated the relationship between return on equity and the capital adequacy ratio for a group of US banks. The study identified a significant positive correlation between return on equity and the capital adequacy ratio. Similarly, Diamond and Raghuram (2000) demonstrated that higher bank capital decreases the likelihood of financial distress. Umoru and Osemwegie (2016) found that capital adequacy plays a crucial role in enhancing the financial performance of banks. Furthermore, Aruwa and Musa (2014) established a significant positive association

between capital adequacy and the financial performance of banks. Based on these findings, this study proposes the following hypothesis:

H_2: There is a positive relationship between total debt to total asset ratio and bank profitability.

Total debt to total equity ratio

Profitability has been found to be negatively correlated with the debt-to-equity ratio (Shah et al., 2004). Similarly, Amato and Burson (2007) discovered that the debt-to-equity ratio has an adverse effect on performance. Taani (2013) indicated that bank performance, as measured by net profit, return on capital employed, and net interest margin, is significantly and negatively related to the total debt-to-equity ratio. Likewise, Rahman et al. (2019) revealed that long-term debt to total assets, total debt to total assets, and the debt-to-equity ratio negatively impact bank profitability. Based on it, this study develops the following hypothesis:

H_3: There is a negative relationship between total debt to total equity ratio and bank profitability.

Bank size

Bank size is gauged by the total assets held by the bank. The size of a bank can influence market competition and enable larger banks to benefit from economies of scale and scope, which can substantially enhance their performance (Rose and Hudgins, 2009). Larger banks typically receive higher credit ratings for their debt issues and incur lower interest rates on debt capital (Pinches and Mingo, 1973). Aladwan (2015) examined the impact of bank size on profitability for Jordanian listed commercial banks across various size categories. The study found a positive association between bank size, as measured by total assets, and bank profitability. The effect of bank size on profitability is generally anticipated to be positive (Smirlock, 1985). Halkos and Salamouris (2004) explored the impact of bank assets on the efficiency of Greek banks, concluding that greater bank assets are associated with increased efficiency. Based on it, this study develops the following hypothesis:

H_4: There is negative relationship between bank size and bank profitability.

Short term debt to total assets ratio

Abor (2005) investigated the effect of capital structure on the performance of companies listed on the Ghanaian Stock Exchange. The study identified a significant positive effect of the short-term debt to total assets ratio and total debt to total assets ratio on return on equity. Similarly, Siddik et al. (2017) explored the relationship between capital structure and the performance of banks in Bangladesh, finding a positive correlation between the short-term debt to total assets ratio and the performance of the banking sector. Likewise, Arbabiyan and Safari (2009), analyzing data from 100 firms over the period 2001–2007, reported a significant positive association between the short-term debt to total assets ratio and the debt ratio with return on equity. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between short term debt to total assets ratio and bank profitability.

Regression Model

The regression will be run by using least squares method of regression analysis. The following regression model is used in the study to examine the impact of capital structure and profitability of Nepalese commercial banks. Thus, the following model equation is designed to test the hypothesis. From the conceptual framework the function of dependent variables takes the following form:

ROA= f (TDTA, TDTE, STDTA, CAR and BS)

NIM= f (TDTA, TDTE, STDTA, CAR and BS)

More specifically, the given model has been segmented into following models:

Model I

In this model, the dependent variable is performance indicated by return of assets of the commercial bank's capital adequacy ratio, bank size, total debt to assets, total debt to equity, short term debt to assets are independent variables which are tested on capital structure of banks. The model is presented as follows:

$$ROA_{it} = \beta 0 + \beta 1\ TDTA_{it} + \beta 2\ TDTE_{it} + \beta 3\ STDTA_{it} + \beta 4\ CAR_{it} + \beta 5\ BS_{it} + e_{it} \ldots\ldots (I)$$

Model II

In this model, the dependent variable is performance indicated by net interest margin of the commercial bank's capital adequacy ratio, bank size, total debt to assets, total debt to equity, short term debt to assets are independent variables which are tested on capital structure of banks. The model is presented as follows:

$$NIM_{it} = \beta_0 + \beta_1 TDTA_{it} + \beta_2 TDTE_{it} + \beta_3 STDTA_{it} + \beta_4 CAR_{it} + \beta_5 BS_{it} + e_{it} \quad \text{.....(II)}$$

Where,

β_0 is the constant term and β is coefficient of variable

TDA=Total debt to total assets ratio, in percentage

TDE= Total debt to total equity ratio, in percentage

STDA=Short term debt to total assets ratio, in percentage

BS=Bank size is measured by total assets of bank, Rs in billion.

CAR = Capital adequacy is measured as tier1 capital plus tier 2 capital to risk weighted assets, in percentage.

ROA=Return on assets is measured as net profit to total assets, in percentage.

NIM=Net interest margin is measured as the ratio of net interest income to earning Assets, in percentage.

e = Error term

α = Constant term

β_1, β_2, β_3, β_4, and β_5 = Beta coefficients of variables.

CHAPTER IV
RESULT AND DISCUSSION

As the research explained in the previous chapters, the main objectives of this research are to examine the impact of capital structure and profitability of commercial banks in context of Nepal**.** This leads to division of this chapter's observations, analysis, conclusions into three sections. The study's variable was described and their correlations examined in the first section; the regression model's assumptions were verified in the second section; and the regression's result was presented in the third section. Using data analysis methodologies for ratio scale measurement, the ratio of the given dependent and independent variables was found for additional statistical analysis. The collected data was analyzed using SPSS version 26, a statistical tool.

4.1 Results

4.1.1 Descriptive statistics of variables

Table 2 presents descriptive statistics for the dependent and independent variables used in the study illustrate the range of performance measures. The results show the minimum and maximum performance levels related to the impact of capital structure on the profitability of Nepalese commercial banks. dependent variable return on assets and net interest margin and the independent variables are bank size, total debt to total asset, total debt to total equity, short term debt to assets and capital adequacy ratio are included in this section.

Table 3

Descriptive statistics of variables of stock price

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	30	0.61	2.24	1.51	0.42
NIM	30	1.24	4.20	3.00	0.64
TDA	30	1.20	92.00	27.53	38.42
STDA	30	0.00	46.00	4.76	10.49
DE	30	0.65	10.58	5.64	3.56
BS	30	33.69	264.32	121.88	61.42
CAR	30	11.15	15.71	13.29	1.22

Source: SPSS output

Table 2 shows the descriptive statistics of dependent and independent variables used in the research study of Nepalese commercial bank. The total debt to total asset is the first independent variable. During the research period. the average was 27.53 percent,

with a standard deviation of 38.42. The largest value was 92 percent, and the smallest was 1.2 percent. Similarly, the short-term debt to assets, which is the second independent variable, exhibits variation between a minimum of 0 percent and a high of 46 percent, with an average of 4.76 percent and a standard deviation of 10.49. The third independent variable is total debt to total equity ranges from 0.65 percent minimum to 10.58 percent maximum at average value of 5.64 percent and standard deviation of 3.56. The fourth independent variable is bank size ranges from 33.69 billion minimum to 264.32 billion maximums at average value of 121.88 billion and standard deviation of 61.42. The last independent variable, capital adequacy ratio, reveals that this variable ranges from 11.15 percent at the lowest to 15.71 percent at the highest, with a median of 13.29 percent and a SD of 1.22

The ROA summary indicates that throughout the research period, the average return on assets was 1.51 percent with a standard deviation of 0.42, with the highest return on assets 2.24 percent and the lowest being 0.61 percent. How successfully commercial bank use their information to produce profit is shown by the return on assets. The average net interest margin is 3 percent, with a minimum of 1. 24 percent and a maximum of 4.2 percent. This is adequate. Because of this the net interest margin standard deviation, which is 0.64.

4.1.2 Correlation analysis

A table 3 is displaying correlation coefficients between variables is called a correlation matrix. Each cell in the table shows the correlation between two corresponding variables. A correlation matrix can summarize this data, providing an overview of how variables correlate with varying strengths and levels of significance. A correlation value of 0 indicates no linear relationship between the variables. The correlation coefficient ranges from +1, indicating a perfect positive correlation, to -1, indicating a perfect negative correlation. Table 4.2 presents the correlation matrix as follows.

Table 4

Pearson's correlation coefficients of study variables

Variables	ROA	NIM	TDA	STDA	DE	BS	CAR
ROA	1						
NIM	0.835**	1					
TDA	-0.771**	-0.629**	1				
STDA	-0.602**	-0.400*	0.486**	1			
DE	0.025	-0.083	0.028	0.1	1		
BS	-0.529**	-0.511**	0.810**	0.27	0.046	1	
CAR	0.067	0.077	-0.139	0.08	0.301	-0.001	1

Source: SPSS output

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 3 reveals the correlation test between both dependent and independent variables using correlation coefficient matrix. The correlation test shows that total debt to total asset, short term debt to assets, bank size has inverse relationship with return on assets of Nepalese commercial bank with 1 percent level of significance. Likewise total debt to total equity, capital adequacy ratio has positive relationship with the return on assets. Similarly, total debt to total asset, total debt to total equity, short term debt to assets and bank size has inverse relationship with net interest margin with significance level and positive relationship with the capital adequacy ratio with net interest margin of commercial bank.

4.1.3 Regression analysis

It encompasses various modeling and analysis techniques to examine the relationship between the dependent variables—return on assets and net interest margin—and the independent variables such as BS, TDA, TDE, STDA, and CAR of Nepalese commercial banks. Ordinary Least Squares (OLS) regression is a key analytical method used in panel data analysis.

4.1.3.1 Analysis of Return on Assets Regression

Return on assets is the dependent variable and independent one's BS, TDA, TDE, STDA, CAR to analyze the impact of capital structure and profitability of Nepalese commercial banks.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824a	0.679	0.613	0.26274

a Predictors: (Constant), CAR, BS, STDA, DE, TDA

The coefficient of determination (R2) in multiple regression is a summary statistic that shows how well the sample regression line fits the data. Put another way, the R2 statistic shows what proportion of the variance of the dependent variable can be accounted for by the independent variables. In this case, the model fits, or accounts for. the variance of the dependent variable, ROA, at 67.9 percent. The strength of the variables' relationship is determined by calculating the R statistic, which has a value of 0.824 and shows that there is a significant degree of association between the research variables (multiple correlation coefficients). This implies that the ROA was significantly impacted by the independent factors. The standard error of estimate has a perfect correlation with *regression analysis.*

Table 6

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.512	5	0.702	10.176	.000b
	Residual	1.657	24	0.069		
	Total	5.169	29			

a Dependent Variable: ROA

b Predictors: (Constant), CAR, BS, STDA, DE, TDA

An ANOVA analysis (F-value) suggests that the impact of the dependent variables can be best explained by various combinations of predictor variables. The results indicate that the ROA indicator has a significant impact. For ROA, the F-values of 10.176 ($p = 0.000 < 0.05$) for bank size, total debt to total assets, total debt to total equity, short-term debt to assets, and capital adequacy ratio demonstrate a strong correlation between the dependent variable (ROA) and the independent variables.

Table 7
Regression coefficient of Independent Variables with ROA

Variables	Coefficient	T	sig.
(Constant)	1.812	3.232	0.004
TDA	-0.885	-3.419	0.002
STDA	-1.072	-1.901	0.069
DE	0.009	0.659	0.516
BS	0.001	0.912	0.371
CAR	-0.017	-0.376	00.71

Source: SPSS output

Table 6 presents the regression coefficient of independent variables BS, TDA, TDE, STDA, CAR and the intercept value of dependent variable ROA. The total debt to total assets regression result indicates a negative impact with ROA, with a coefficient estimate of -0.885 percent. This suggests that an increase in the total debt to total assets (TDA) will cause the return on assets (ROA) of the commercial bank to decline by -0.885 percent, holding all other independent variables equal. At the five percent significance level, the TDA is statistically significant, as indicated by its p value of 0.002. The findings therefore corroborate the working hypothesis that the TDA has a major impact on the ROA of commercial bank.

The findings of the regression model indicated inverse impact between the STDA and ROA, with a coefficient estimate of -1.072. This suggests that an increase in the STDA will cause the return on assets (ROA) of the commercial bank to decline by -1.072 percent, holding all other independent variables equal. At the five percent significance level, the STDA is statistically significant, as indicated by its p value of 0.069. The findings therefore corroborate the working hypothesis that the STDA has a major impact on the return on assets (ROA) of commercial bank.

The findings of the regression indicated a positive correlation between the total debt to total equity (DE) and ROA, with a coefficient estimate of 0.009 percent. This shows that the return on assets (ROA) of commercial bank improves by 0.009 percent for every one percent increase in the total debt to total equity (DE) while maintaining the same levels of other independent variables. The rise in total debt to total equity is significant at the 5 percent significance level, as indicated by the TDE p value of 0.516.

The findings of the regression model indicated a positive impact between the bank size (BS) and ROA, with a coefficient estimate of 0.001. This shows that the return on assets (ROA) of commercial bank improves by 0.001 for every one percent increase in the bank size (BS) while maintaining the same levels of other independent variables. The rise in BS is statistically significant at the five percent significance level, as indicated by the BS p value of 0.371.

The findings of the regression model indicated inverse impact between the CAR and ROA, with a coefficient estimate of -0.017. This suggests that an increase in the CAR will cause the return on assets (ROA) of the commercial bank to decline by -0.017 percent, holding all other independent variables equal. At the five percent significance level, the CAR is statistically significant, as indicated by its p value of 0.71. The findings therefore corroborate the working hypothesis that the CAR has a major impact on the return on assets (ROA) of commercial bank.

4.1.3.2 Analysis of Net interest margin Regression

Net interest margin is the dependent variable and independent one's BS, TDA, DE, STDA, CAR to analyze the impact of capital structure and profitability of Nepalese commercial banks.

Table 8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642a	0.412	0.29	0.53634

a Predictors: (Constant), CAR, BS, STDA, DE, TDA

The coefficient of determination (R2) in multiple regression is a summary statistic that shows how well the sample regression line fits the data. Put another way, the R2 statistic shows what proportion of the variance of the dependent variable can be accounted for by the independent variables. In this case, the model fits, or accounts for. the variance of the dependent variable, NIM, at 41.2 percent. The strength of the variables' relationship is determined by calculating the R statistic, which has a value of 0.642 and shows that there is a significant degree of association between the research variables (multiple correlation coefficients). This implies that the NIM was significantly impacted by the independent factors. The standard error of estimate has a perfect correlation with regression analysis.

Table 9

Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.843	5	0.969	3.367	.019b
	Residual	6.904	24	0.288		
	Total	11.747	29			

a Dependent Variable: NIM

b Predictors: (Constant), CAR, BS, STDA, DE, TDA

ANOVA analysis (F-value) suggests that the effect of the dependent variables is best explained by various combinations of predictor variables. The findings reveal that the NIM indicator has a significant impact. For NIM, the F-values of 3.367 ($p = 0.019 < 0.05$) for BS, TDA, TDE, STDA, and CAR indicate a strong correlation between the dependent variable (NIM) and the independent variables.

Table 10

Regression Coefficient of Independent Variables with NIM

Variables	Coefficient	T	sig.
(Constant)	3.172	2.772	0.011
TDA	-0.849	-1.606	0.121
STDA	-0.797	-0.692	0.495
DE	-0.011	-0.383	0.705
BS	-0.001	-0.203	0.841
CAR	0.018	0.201	0.843

Source: SPSS output

Table 9 presents the regression coefficient of independent variables BS, TDA, DE , STDA, CAR and the intercept value of dependent variable NIM. The total debt to total assets regression result indicates a negative impact with NIM, with a coefficient estimate of -0.849 percent. This suggests that an increase in the total debt to total assets (TDA) will cause the net interest margin (NIM) of the commercial bank to decline by -0.849 percent, holding all other independent variables equal. At the five percent significance level, the TDA is statistically significant, as indicated by its p value of 0.121. The findings therefore corroborate the working hypothesis that the TDA has a major impact on the net interest margin (NIM) of commercial bank.

The findings of the regression model indicated inverse impact between the STDA and NIM, with a coefficient estimate of -0.797 This suggests that an increase in the STDA will cause the net interest margin (NIM) of the commercial bank to decline by -0.797 percent, holding all other independent variables equal. At the five percent significance level, the STDA is statistically significant, as indicated by its p value of 0.495. The findings therefore corroborate the working hypothesis that the STDA has a major impact on the net interest margin (NIM) of commercial bank.

The findings of the regression model indicated inverse impact between the total debt to total equity (DE) and NIM, with a coefficient estimate of -0.011 This suggests that an increase in the total debt to total equity (DE) will cause the net interest margin (NIM) of the commercial bank to decline by -0.011 percent, holding all other independent variables equal. At the five percent significance level, the total debt to total equity (DE) is statistically significant, as indicated by its p value of 0.705. The findings therefore corroborate the working hypothesis that the total debt to total equity (DE) has a major impact on the net interest margin (NIM) of commercial bank.

The findings of the regression model indicated inverse impact between the bank size (BS) and NIM, with a coefficient estimate of -0.001. This suggests that an increase in the bank size will cause the net interest margin (NIM) of the commercial bank to decline by -0.001 percent, holding all other independent variables equal. At the five percent significance level, the BS is statistically significant, as indicated by its p value of 0.841. The findings therefore corroborate the working hypothesis that the bank size has a major impact on the net interest margin (NIM) of commercial bank.

The findings of the regression model indicated a positive impact between the capital adequacy ratio and NIM, with a coefficient estimate of 0.018 percent. This shows that the net interest margin (NIM) of commercial bank improves by 0.018 percent for every one percent increase in the capital adequacy ratio (CAR) while maintaining the same levels of other independent variables. The increase in total CAR is statistically significant at the 5% level, as demonstrated by the p-value of 0.843 for total CAR.

4.2 Discussion

The primary aim of this study is to investigate how capital structure affects the profitability of Nepalese commercial banks. The study considered the bank specific

variables: BS, TDA, DE , STDA, CAR. The dependent variables are measured in terms ROA and NIM. The correlation test shows that total debt to total assets (TDA) has significant negative relation with ROA in 1 percent level of significance. This finding is opposite with the finding of Nassar (2016). At the same time, gross domestic product has significant negative relation with NIM which is consistent with the finding of Antoniou et al. (2008). Likewise, there is significant negative correlation between short term debt to assets and ROA which is inconsistent with the finding of Phung and Le (2013). Then short debt to assets has also significant inverse relationship with NIM. This is inconsistent with the (Maudos & Guevara, 2004). Moreover, bank size has significant negative relationship with ROA which is not consistent with the finding of (Saunders & Schumacher, 2000) and it has significant negative relationship with NIM of the commercial banks. This is consistent with the finding of Abbes (2018). Likewise, total debt to total equity has positive relationship with return on assets. This finding is similar with finding to Taani (2013). Likewise, total debt to total equity ratio has inverse relationship with NIM. This finding is consistent with finding of Rahman et al. (2019). Similarly, capital adequacy ratio (CAR) has positive relationship with both ROA and NIM. This finding is similar with the finding of Berger (1995).

The multiple regression analysis found that the TDA has significant negative effect on ROA of commercial bank which is inconsistent with the finding of Saeed and Amjad (2013). Then, STDA has a significant negative impact on ROA. This finding is inconsistent with the findings Siddik et al. (2017). In addition, capital adequacy ratio has significant negative impact on ROA of commercial bank in Nepal. This finding contrasts with the findings of Aruwa and Musa (2014). Likewise total debt to total equity has positive impact on ROA. This finding is like finding of Amato and Burson (2007). Similarly, bank size has positive impact on ROA and this finding is consistent to finding of Aladwan (2015).

On regression net interest margin (NIM), TDA has significant negative effect on NIM of commercial bank. This finding is inconsistent to the findings of Gill et al. (2011). STDA has a significant negative impact on NIM. This finding is consistent with the findings of Arbabiyan and Safari (2009). The result of regression also shows total debt to total equity has inverse impact on NIM. This finding is like the findings of

Taani (2013). Similarly, bank size has negative impact on NIM and this finding is consistent to finding of Salamouris (2004). In addition, capital adequacy ratio has significant positive impact on NIM of commercial bank in Nepal. This finding contrasts with the findings of Umoru and Osemwegie (2016).

CHAPTER V

SUMMARY AND CONCLUSION

5.1 Summary

Numerous studies have been conducted on capital structure; however, the majority have focused on the banking sectors of Western and developed nations. In contrast, empirical research on developing countries is relatively limited. This study aims to address this gap by providing new empirical evidence on the capital structure of banks in Nepal. Initially, using SPSS software, the study calculated the return on assets (ROA), return on equity (ROE), and net interest margin (NIM) ratios for individual banks within the Nepalese banking sector. The capital structure decision is one of the most crucial decisions made by financial managers in the modern era, sitting at the core of many other corporate finance decisions. The banking system plays a vital role in fostering economic growth, and understanding the factors that influence banks' capital structure decisions is essential, especially considering the significant role of capital ratios in prudential regulation (Levine, 1997). Profitability serves as an indicator of a bank's competitive position within the banking industry and reflects the quality of its management, which is critical to maintaining a healthy banking system. It is often used as a proxy for financial performance, one of the primary objectives of banking institutions. Consequently, banks must focus on factors that likely affect profitability and the extent of their influence to ensure strong financial performance (Yesmine and Bhuiyah, 2015).

The main objective of this study is to investigate the impact of capital structure on the profitability of Nepalese commercial banks. The specific objectives include analyzing the structure and pattern of ROA and NIM in Nepalese commercial banks, assessing the relationship between the capital adequacy ratio (CAR), total debt to equity, and total debt to assets on bank profitability, exploring the relationship between short-term debt to assets and bank size with profitability, and identifying the most critical factors determining the impact of capital structure on the profitability of Nepalese commercial banks.

This study relies on secondary data collected from three commercial banks in Nepal over a 10-year period from 2012/13 to 2021/22. This sample, representing 30% of the population, is both representative and adequate for Nepalese commercial banks. The

secondary data are of an annual nature. The study employs both descriptive and causal-comparative research designs, as it examines the impact of BS, TDA, DE , STDA, CAR on the profitability of commercial banks in Nepal. Relationships between dependent and independent variables are analyzed using correlation and simple and multiple regression analyses. Specifically, ROA and NIM are treated as dependent variables, while bank size, total debt to total assets, total debt to total equity, short-term debt to assets, and capital adequacy ratio are the independent variables.

The study's correlation analysis reveals the relationships between both dependent and independent variables using a correlation coefficient matrix. The results show that total debt to total assets, short-term debt to assets, and bank size have an inverse relationship with ROA in Nepalese commercial banks, with a 1% level of significance. Conversely, total debt to total equity and capital adequacy ratio exhibits a positive relationship with ROA. Similarly, BS, TDA, DE , STDA, have an inverse relationship with NIM, while the capital adequacy ratio has a positive relationship with NIM in commercial banks.

The regression model findings indicate that total debt to total assets, short-term debt to assets, and capital adequacy ratio have a negative impact on ROA. The results also show a positive correlation between total debt to total equity and bank size with ROA. Moreover, total debt to total assets, short-term debt to assets, total debt to total equity, and bank size have a negative impact on NIM, while capital adequacy ratio positively impacts NIM.

5.2 Conclusion

The study's primary conclusion is that total debt to assets and bank size are the key determinants of the capital structure in Nepalese commercial banks. It also finds a negative and significant impact of short-term debt to assets, total debt to assets, and the capital adequacy ratio on return on assets (ROA). This suggests that as short-term debt to assets, total debt to assets, and the capital adequacy ratio increase, the ROA tends to decrease. Conversely, bank size and total debt to equity have a positive impact on ROA, indicating that larger bank size and higher total debt to equity lead to an increase in ROA. Additionally, the study reveals that total debt to assets, short-term debt to assets, total debt to equity, and bank size negatively affect the net interest

margin (NIM), meaning that as these variables increase, NIM tends to decrease. On the other hand, the capital adequacy ratio positively impacts NIM. The study concludes that total debt to assets, followed by bank size, are the most influential factors in determining ROA, while the capital adequacy ratio is the most significant determinant of NIM.

The correlation analysis within the study indicates that total debt to assets, short-term debt to assets, and bank size have an inverse relationship with the ROA of Nepalese commercial banks. In contrast, total debt to equity and the capital adequacy ratio shows a positive relationship with ROA. Similarly, total debt to assets, total debt to equity, short-term debt to assets, and bank size exhibit a negative relationship with NIM, whereas the capital adequacy ratio shows a positive relationship with NIM in commercial banks.

Furthermore, descriptive statistics from the study indicate that bank size has the highest average return, while ROA has the lowest average return among Nepalese commercial banks.

5.3 Implications

The inquiry has yielded the following implications regarding the impact of capital structure and profitability of Nepalese commercial bank.

The results of this study demonstrate that bank size significantly impact of capital structure and profitability of commercial banks in Nepal. Consequently, the study's findings are expected to provide valuable insights into how these factors influence the capital structure and profitability of Nepalese commercial banks. This information is crucial for policymakers and commercial bank management in making informed financial decisions.

This research offers up-to-date information, statistics, and insights regarding capital structure and profitability, making it valuable for investors and shareholders. As such, the study holds significance for these stakeholders.

- Future scholars and investors can derive substantial benefits from the study's insights, as it serves as a valuable resource for future research.

- The study suggests that further research should be conducted over a period exceeding ten years, utilizing a larger sample size that includes more than three commercial banks and other financial institutions such as finance companies, development banks, and microfinance institutions. Such comprehensive research could yield more robust results for policy implementation. Moreover, this study focused solely on five independent variables: BS, TDA, DE , STDA, CAR Therefore, additional research is needed to consider other variables such as the liquidity ratio, long-term debt to equity ratio, and tangible assets, among others.

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APPENDIX

BankName	Year	ROA	NIM	TDA	STDA	DE	BS	CAR
EBL	2012/13	2.24	4.20	0.019	0.006	4.79	65.74	11.59
	2013/14	2.20	4.14	0.012	0.005	5.26	70.45	11.15
	2014/15	1.85	2.90	0.014	0.004	6.68	99.15	13.33
	2015/16	1.59	2.83	0.021	0.012	10.58	114.02	12.66
	2016/17	1.83	3.25	0.018	0.009	7.85	116.95	14.54
	2017/18	1.97	3.36	0.014	0.007	7.79	144.81	14.2
	2018/19	1.94	3.35	0.025	0.011	8.65	170.077	13.74
	2019/20	1.42	2.87	0.89	0.014	8.92	185.02	13.38
	2020/21	0.89	1.24	0.9	0.017	9.23	211.64	12.48
	2021/22	1.13	2.29	0.896	0.025	9.181	225.38	11.89
NSBI	2012/13	1.19	2.51	0.015	0.003	6.35	64.8	12.39
	2013/14	1.51	2.86	0.019	0.003	7.25	61.08	13.28
	2014/15	1.64	3.45	0.02	0.003	8.83	59.28	14.03
	2015/16	1.59	3.07	0.069	0.003	10.14	78.74	13.49
	2016/17	1.57	3.00	0.072	0.062	8.81	99.95	15.71
	2017/18	1.97	4.04	0.036	0.026	7.54	102.54	15.15
	2018/19	1.94	3.98	0.034	0.026	7.43	118.314	14.12
	2019/20	1.17	3.05	0.64	0.033	8.42	132.4	15.55
	2020/21	0.70	2.09	0.67	0.38	7.9	137.81	13.86
	2021/22	0.70	2.19	0.882	0.46	7.94	153.1	13.25
SBL	2012/13	1.43	3.44	0.051	0	1.02	33.69	11.59
	2013/14	1.74	3.34	0.028	0.003	1.34	40.28	11.15
	2014/15	1.51	2.84	0.03	0	1.6	50.65	13.33
	2015/16	1.69	2.85	0.029	0.001	1.15	74.4	12.66
	2016/17	1.56	2.95	0.019	0.005	0.93	89.9	14.54
	2017/18	1.59	2.87	0.019	0.008	0.71	119.87	14.2
	2018/19	1.60	3.23	0.086	0.065	0.65	144.48	13.74
	2019/20	1.26	3.05	0.9	0.073	0.79	182.67	13.38
	2020/21	1.25	2.41	0.91	0.078	0.74	245.02	12.48
	2021/22	0.61	2.49	0.92	0.087	0.78	264.32	11.89

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