The Quest for Optimal Capital Structure

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Abstract

This study aims to determine an optimal capital structure (CS) and profitability in Nepalese commercial banks over ten years spanning from 2008/09 to 2017/18. The study utilizes 10 sampled banks and employs statistical techniques such as correlation analysis and regression analysis, along with descriptive statistics. The findings reveal that the debt assets ratio is inversely proportional to net profit but directly proportional to return on equity (ROE). It is observed that the average debt/equity ratio of Nepalese commercial banks over the past decade was 0.103551, indicating a high reliance on debt. Correlation analysis demonstrates that capital structure decisions significantly impact net profit but not ROE, except for paid-up capital. Regression analysis further confirms the negative impact of bank size and paid-up capital on profitability. The study concludes that Nepalese commercial banks prefer equity financing and should carefully consider capital structure decisions to maximize profitability. Additionally, it suggests further research on variables such as capital adequacy ratio, growth, tax, and market value of paid-up capital to better understand the relationship between capital structure and profitability. The article recommends stakeholders to focus on equity financing and analyze all factors impacting bank profitability. Optimal capital structure decisions based on study-based findings are crucial for the long-term survival of Nepalese commercial banks.

Keywords: Optimal capital structure, Banks, Profitability, Return on equity

1. Introduction

The relationship between capital structure and profitability has been a subject of significant interest in research studies. Numerous studies conducted in various countries have explored capital structure, its determinants, and its impact on the profitability of banks (Addae, Nyarko-Baasi, & Hughes, 2013). In the context of commercial banks, capital structure decisions hold great importance due to their direct influence on profitability. Commercial banks play a crucial role in the national economy by attracting substantial deposits and generating substantial profits. However, despite the uniform increase in paid-up capital to 8 billion by all Nepalese commercial banks, variations in profitability among these banks raise important questions. The change in capital structure, whether through debt or equity capital, is a primary factor driving the disparity in profitability among commercial banks. This research study aims to examine how changes in the capital structure, particularly the level of debt, affect the profitability of commercial banks. Additionally, the study investigates the impact of increased capital requirements on profitability, following the mandated 8 billion paid-up capital for each commercial bank.

Numerous studies have highlighted the significance of optimal capital structure in maximizing a firm's value and profitability. The addition of debt in the capital structure, due to its tax deductibility and the associated improvement in profitability, is often considered a favorable option for firms. However, excessive debt increases default risk and the likelihood of bankruptcy. Therefore, firms must strive for an optimal capital structure (Gill, Biger, & Mathur, 2011). Some studies have shown that the adoption of technological innovation and employee professionalism have a significant impact on the performance of any firm, with the emergence of e-payment services and retail loan products being particularly significant in banking (Bhattarai et al., 2020; Dahal et al., 2020; Karki, et al., 2021; Bhandari et al.,

2021). Previous research has also emphasized the impact of capital structure on profitability in various sectors, such as the cement industry in Pakistan (Ahmad, 2014) and banks in India (Pinto et al., 2018). These studies have demonstrated that profitability is significantly related to capital structure, with higher debt levels negatively impacting earnings. Furthermore, the level of risk generated by different strategies has been found to correlate with their return rates (DeYoung & Rice, 2004).

In the Nepalese banking context, the recent increase in capital requirements aims to strengthen the financial health of banks and ensure their sustainability. Consequently, capital structure decisions have gained even greater importance, given their direct link to bank profitability and long-term viability. This research study aims to present a comprehensive analysis of the capital structure and its effects on the profitability of Nepalese commercial banks.

The decision to raise capital structure, whether through debt or equity, poses challenges for commercial banks. Debt is often considered a cost-effective option compared to issuing equity, primarily due to tax advantages and the absence of ownership dilution. However, excessive debt increases the risk of bankruptcy due to the burden of interest payments. Determining the optimal capital structure that maximizes bank profitability remains an unanswered question. Therefore, all stakeholders must understand the relationships between capital structure and profitability to make informed financing decisions. This study addresses the need for comprehensive research on the relationship between capital structure and profitability in Nepalese commercial banks. It also examines the effects of changes in debt-to-assets ratio, debt-to-equity ratio, paid-up capital, and bank size on profitability.

2. Literature Review

The topics of capital structure and profitability have been extensively examined on a global scale. According to Myers (2001), three conditional models are supported, namely the tradeoff theory, the pecking order hypothesis, and the free cash flow theory. These theoretical frameworks elucidate the mechanisms through which firms manage the trade-off between the advantages derived from debt tax benefits, the potential risks associated with financial distress, and the imperative of securing external funding. In his study, Abor (2005) delves into the examination of the capital structure and performance of Ghanaian corporations. The findings of the study propose a positive correlation between profitability and borrowing tendencies among these companies. According to the research conducted by Iannotta, Nocera, and Sironi (2007), it was observed that mutual and government-owned banks tend to have reduced profitability despite their comparatively lower costs. On the other hand, mutual banks demonstrate superior loan quality and decreased asset risk. The concentration of ownership has a significant impact on loan quality, asset risk, and insolvency risk within banks, while it does not appear to have a direct effect on bank profitability.

Antoniou, Guney, and Paudyal (2008) conducted a comprehensive analysis of the factors that determine capital structure in the United States, the United Kingdom, France, Germany, and Japan. Their study revealed that various factors, including economic conditions, corporate governance practices, tax regulations, and exposure to capital markets, exert significant influence on a firm's capital structure. In a study conducted by Salawu (2009), it was observed that Nigerian firms exhibited a significant reliance on short-term debt and external financing, accounting for approximately 60% of their overall financial structure. In their seminal work, Shleifer and Vishny (2010) put forth a financial intermediary hypothesis that establishes a connection between the leverage of banks and the fluctuations observed in loan and investment cycles, ultimately resulting in increased market volatility. The model posits a pervasive vulnerability in the banking sector and underscores the significance of mitigating banks' protracted debt to facilitate economic recuperation.

Chen and Chen (2011) provided empirical evidence in support of capital structure theories, emphasizing the influence of firm size and industry characteristics on firm valuation. According to the pecking order theory, highly profitable firms tend to depend less on external investment, resulting in a decrease in leverage and accompanying costs. In their study, Fan, Titman, and Twite (2012) conducted an analysis of capital structure and loan maturity on a global scale. Their findings shed light on the significant impact of legal systems, corruption levels, and the preferences of capital suppliers in shaping these financial aspects. In a study conducted by Kusi, Yensu, and Aggrey (2012), it was discovered that there exists a negative correlation between leverage and the performance of banks in Ghana. This finding emphasizes the advantages associated with banks that maintain low levels of debt. Boahene, Dasah, and Agyei (2012) presented findings that challenge previous research by demonstrating the existence of profitability in Ghanaian banks, even in the face of considerable credit risk. In a study conducted by Goyal (2013), the author emphasized the significance of capital structure concerning Indian listed public sector banks. The findings revealed that the utilization of short-term debt had a positive effect on specific performance indicators.

In their research, Yegon et al. (2014) examined the relationship between capital structure and firm profitability within the banking sector of Kenya. Their findings suggest that an optimal capital structure for banks in Kenya involves a combination of debt and equity, rather than relying solely on debt financing. The study concludes that a complete

reliance on debt financing, up to 100% of the capital structure, may not be advantageous for banks in terms of maximizing profitability. The strategy aims to decrease the capital expenditure and mitigate the likelihood of insolvency. In their study, Kodongo, Mokoaleli-Mokoteli, and Maina (2015) analyzed the capital structure, profitability, and firm value in the context of Kenya. They observed a rise in debt financing and restricted utilization of the corporate bond market. The profitability of a firm is influenced by several factors, namely tangibility, sales growth, and firm size. Among these factors, tangibility has been observed to hurt profitability, while the effects of sales growth and firm size on profitability remain to be further explored. In their study, Saputra, Achsani, and Anggraeni (2015) employed panel data analysis to examine the relationship between capital structure and the return on assets (ROA) of Indonesian firms. Their findings indicated a negative association between capital structure and the ROA of firms in the funding, securities, and insurance sectors. According to the Pecking Order theory, it is recommended that companies with high profitability prioritize the utilization of internal financing. The capital structure of banking and insurance industries has been found to positively impact their return on equity (ROE), primarily due to the advantageous debt-to-asset ratios prevalent in these sectors. Karki's (2020) research in the context of Nepalese insurance companies found that earnings and dividends hurt stock market performance, although GDP and money supply have a positive impact.

The significance of bank capital in augmenting profitability was underscored by Mutua (2016), who emphasized that long-term funding for banks primarily stems from equity rather than debt. In a study conducted by Yakubu et al. (2017), it was observed that there exists an inverse association between short-term and long-term debt and bank performance in the context of Ghana. Conversely, a positive correlation was identified between total debt and bank performance. According to the findings of Musah (2018), it was observed that the profitability of banks in Ghana was negatively impacted by both short-term and long-term debt ratios. The study conducted by Pinto et al. (2018) demonstrated a significant relationship between capital structure and the financial performance of banks in India. In Nepal, finance literature, driven by its vital role in the economy, explores various factors shaping the stock market performance, including those triggering overreactions or underreactions (Karki, 2018; 2020). Numerous studies have been conducted, particularly focusing on identifying the factors that influence the financial performance of banks.

Despite numerous studies, the results remain inconclusive, necessitating further investigation. This study is particularly relevant as the Nepal Rastra Bank has mandated commercial banks to increase their paid-up capital to 8 billion as part of its monetary policy (FY 2015/16) to strengthen their capital base and build investor and depositor trust. In this concern, this study aims to delve deeper into capital structure concerns and profitability within the Nepalese context and purposes to test the following hypotheses:

H1: A significant relationship exists between the capital structure's leverage factors (D/A, D/E) and the profitability (ROE, NP) of Nepalese commercial banks.

H2: A significant relationship exists between capital structure's scale factors (size, paid-up) and the profitability (ROE, NP) of Nepalese commercial banks.

Conceptual Framework

The profitability of commercial banks depends on capital structure. It can be represented as a function:

P = f (CS),   *Where, P= Profitability and CS= Capital Structure*

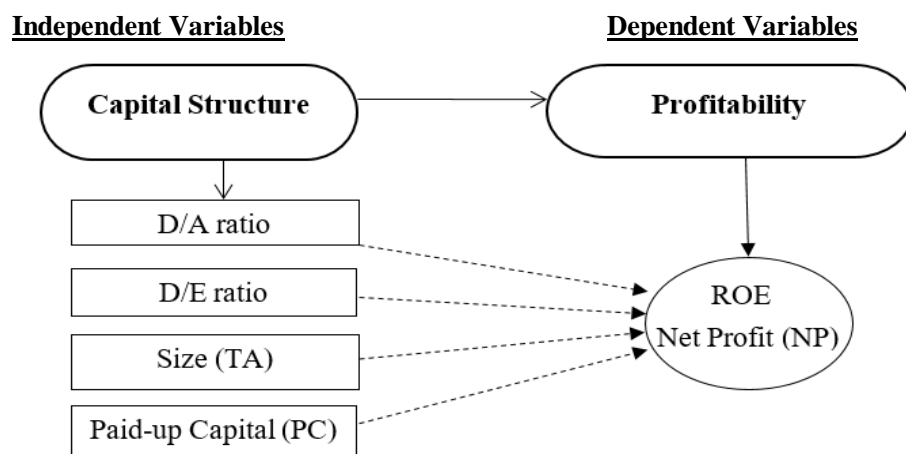Based on the literature review, a conceptual framework is developed as in Figure 1:

Figure 1: Theoretical Framework of the Study

3. Research Methods

The research employed a quantitative approach, specifically utilizing a descriptive and causal-comparative design. Descriptive data analysis was chosen to provide an overview of the current situation and key issues. The study aimed to examine the relationship between capital structure and profitability, with profitability measured through two variables: Return on Equity (ROE) and Net Profit. Capital structure was assessed using four variables: Debt-to-Equity ratio (D/E), Debt-to-Assets ratio (D/A), Capital Adequacy Ratio (CAR), and Paid-up Capital. The research analyzed the impact of debt financing on profitability by studying changes in commercial banks' profitability resulting from variations in the debt component of their capital structure. Similarly, the relationship between paid-up capital and profitability was investigated by comparing changes in commercial banks' profitability associated with increased capital. Hypotheses were formulated and tested accordingly.

A sample size of 10 commercial banks, representing 36% of the total population of 28 banks, was selected using stratified sampling. The banks were divided into three strata based on their net profit, and a simple random sampling technique was employed within each stratum. Almost 45% of banks have a net profit of $1 to $2 billion on average. As a result, four samples were taken from the average group and three from each of the lower and greater profit categories.

Table 1: Sample Size Determination

Net profit (in Million)	No. of samples taken	Names of selected banks
Greater than 2000	Three	ADBL, NIBL, EBL
Between 1000 and 2000	Four	SCBNL, NSBI, PBL, SBL
Below 1000	Three	MBL, KBL, LBL

Secondary data spanning from 2008/09 to 2017/18 were collected from the Nepal Rastra Bank as of mid-July 2018. Descriptive, correlation, and regression methods of analysis were employed. Descriptive statistics were used to characterize the commercial banks' features during the reference periods, including measures such as minimum, maximum, mean, and standard deviation. The Pearson Correlation Coefficient was utilized to determine the direction of relationships between the dependent and independent variables. Regression analysis was employed to assess the magnitude of the impact of independent variables on dependent variables. The model specifications for this study are based on and adjusted from two influential research works by Pinto, et al. (2018) and Yegon, et al. (2014). The resulting regression models, developed specifically for this study, are as follows:

$ROE_{it} = \beta_0 + \beta_1\, D/A_{it} + \beta_2\, D/E_{it} + \beta_3\, SIZE_{it} + \beta_4\, PC_{it} + \epsilon_{it}$ ----------- ---------- (i)

$NP_{it} = \beta_0 + \beta_1\, D/A_{it} + \beta_2\, D/E_{it} + \beta_3\, SIZE_{it} + \beta_4\, PC_{it} + \epsilon_{it}$ ----------- ------------ (ii)

ROE_{it} & NP_{it} = Dependent Variables; return on equity and log of net profit for bank 'i' during the period 't'

D/A_{it} = Debt to assets ratio for bank 'i' during the period 't'. The debt ratio can help investors determine a company's risk level.

D/E_{it} = Debt to equity ratio for bank 'i' during the period 't'. Debt equity ratio greater than one indicates that a firm is using more debt for financing operations.

$SIZE_{it}$ = Size of the bank measured by the log of total assets for bank 'i' during the period 't'.

PC_{it} = Paid up capital measured by the log of promoters' equity for bank 'i' during the period 't'.

β_0 = Constant

β_i = Regression coefficients for respective independent variables

ϵ_{it} = Error component

The formulated hypotheses were tested using correlation and regression analysis. Significance tests and multicollinearity assessments were conducted at a 95% confidence level to ensure the validity of the results. The research adhered to a systematic procedure in data analysis, ensuring the reliability and validity of the findings.

4. Data Analysis and Results

The proposed models were used to analyze the data, which includes information gathered from ten sample banks that were chosen from a population of 28 institutions. The short descriptions of the dependent and independent variables, along with their mean values and standard deviations, are given in Table 1.

Table 2: Descriptive Statistics

Variables	Minimum	Maximum	Mean	Std. Deviation
Debt/Asset ratio (D/A)	0.0466	0.9449	0.889826	0.0917485
Debt/Equity ratio (D/E)	0.0029	0.4476	0.103551	0.0566856
Total Assets (SIZE)	13456	170495	59350.48	34024.219
Paid-up Capital (PC)	874	13938	4357.8	3335.831
Return on Equity (ROE)	0.0055	0.3662	0.19479	0.0704524
Net Profit (NP) in million	8.92	3696.27	1068.617	787.9625

For the study, the descriptive statistics presented in Table 2 indicate that the profitability ratios, as measured by Return on Equity (ROE) and Net Profit, exhibited an average value of 19.479% and 1068.617 million, respectively. The variables related to capital structure, namely the ratio of debt to assets, the ratio of debt to equity, total assets, and paid-up capital, were observed to be 0.8898, 0.1035, 59350.48, and 4357.8 respectively. This finding suggests that debt accounts for approximately 89% of the total assets, thereby affirming the notion that banks are institutions with a high degree of leverage. The capital structure and profitability variables components exhibit simultaneous variation across Nepalese commercial banks, with minimum and maximum values being observed.

Table 3: Correlation of Independent Variables on Bank's Profitability

Variables	D/A ratio	D/E ratio	ln_size	ln_PC	ROE	ln_NP
D/A ratio	1	0.361**	-0.266**	-0.426**	0.108	-0.268**
		0.003	0.007	0.00	0.284	0.007
D/E ratio		1	-0.293**	-0.524**	0.147	-0.269**
			0.003	0.00	0.146	0.007
ln_size			1	0.832**	0.206*	0.864**
				0.00	0.04	0.00
ln_PC				1	-0.187	0.682**
					0.063	0.00
ROE					1	0.491**
						0.00
						100
ln_NP						1

*. Significant at the 0.05 level (two-tailed).
**. Significant at the 0.01 level (two-tailed).

The correlation coefficients between the dependent variables (Return on Equity - ROE and Net Profit - NP) and independent variables (Debt-to-Assets Ratio - D/A, Debt-to-Equity Ratio - D/E, Firm Size - SIZE, and Paid-Up Capital - PC) are presented in Table 3 using Pearson correlation coefficient. These correlations reveal important insights into the relationships among these variables.

The correlation coefficient of 0.108 between the D/A ratio and ROE indicates a weak positive correlation. Although the correlation is weak, it suggests that as the debt-to-assets ratio increases, there is a slight tendency for ROE to increase. However, the p-value indicates that this association is not statistically significant. On the other hand, the correlation coefficient between the D/A ratio and NP is -0.268, indicating a negative correlation. This implies that higher debt-to-assets ratios are associated with lower net profit. The statistically significant p-value supports the reliability of this relationship. These findings suggest that higher debt levels can potentially impact both ROE and NP, but other factors may also influence these performance measures.

Similarly, the D/E ratio shows a negative correlation with NP, as indicated by a correlation coefficient of -0.269. The statistically significant p-value suggests that higher debt-to-equity ratios are associated with lower net profit. However, the correlation between the D/E ratio and ROE is 0.147, suggesting a modest positive correlation. The p-value indicates that this association is not statistically significant. These results imply that the impact of the D/E ratio on performance measures may vary, and it is essential to consider other factors alongside debt-to-equity ratios.

The study also reveals a positive correlation between firm size (total assets) and ROE, with a correlation coefficient of 0.206. This implies that as the total assets of a company increase, there is a tendency for ROE to increase as well. The statistically significant p-value supports the reliability of this relationship. A larger asset base can provide more opportunities for generating profits and improving ROE. Similarly, a significant positive correlation exists between firm size (total assets) and NP, with a correlation coefficient of 0.864. This indicates that as the size of banks (measured by total assets) increases, their net profit tends to increase as well. This relationship is statistically significant, suggesting that a larger asset base can contribute to higher profitability.

Regarding paid-up capital (PC), there is a negative correlation with ROE, as indicated by a correlation coefficient of -0.187. However, the p-value suggests that this association is not statistically significant. Conversely, a positive correlation exists between paid-up capital (PC) and NP, with a correlation coefficient of 0.682. The statistically significant p-value supports the reliability of this relationship. These findings suggest that higher levels of paid-up capital can positively influence net profit.

Two regression models, as described in the methodology section, were utilized to assess the statistical robustness and reliability of the obtained results. The objective of the regression analysis was to ascertain the potential influence of capital structure variables on the banks' performance.

Table 4: Multivariate Regression Analysis of ROE and Independent Variables

Variables	Beta	t	Sig	VIF
(Constant)	-0.344**	-2.753	0.007	
D/A	-0.056	-0.869	0.387	1.283
D/E	-0.211	-1.854	0.067	1.546
ln_SIZE	0.152**	9.062	0.000	3.631
ln_PC	-0.128**	-8.405	0.000	4.859
Adj. R^2	0.463			
F	22.308			
Sig	0.00			

*. *Significant at the 0.05 level (two-tailed).*
**. *Significant at the 0.01 level (two-tailed).*

Based on the findings presented in Table 4, a regression equation was formulated to analyze the relationship between ROE (Return on Equity) and the independent variables. The equation is represented as:

$$ROE_{it} = -0.344 - 0.056\,D/A_{it} - 0.211\,D/E_{it} + 0.152\,SIZE_{it} - 0.128\,PC_{it} \quad ----------- ---------- \text{(iii)}$$

The regression coefficient of the D/A ratio is -0.056, indicating that a one percent change in the D/A ratio leads to a 5.6 percent negative change in ROE. However, the corresponding p-value of 0.387 is greater than the significance level of 0.05, suggesting that there is no significant relationship between ROE and the D/A ratio of the selected Nepalese commercial banks. Similarly, the regression coefficient of the D/E ratio is -0.211, meaning that a one percent change in the D/E ratio results in a 21.1 percent negative change in ROE. The p-value of 0.067 is also higher

than the significance level, indicating no significant relationship between ROE and the D/E ratio of the selected banks. On the other hand, the bank's size, represented by the variable SIZE, has a regression coefficient of 0.152. This implies that a one percent change in total assets leads to a 15.2 percent change in ROE. The p-value (0.00) is less than the significance level of 0.05, indicating a significant relationship between ROE and the total assets of the selected Nepalese commercial banks. Similarly, the regression coefficient of paid-up capital (PC) is -0.128, indicating that a one percent change in paid-up capital results in a 12.8 percent negative change in ROE. The p-value (0.00) is less than the significance level, signifying a significant relationship between ROE and the paid-up capital of the selected banks.

The variance inflation factor (VIF) of each variable considered is less than 5, suggesting no multicollinearity issues among the independent variables. The adjusted R-square value is 0.463, meaning that a one percent change in the independent variables leads to a 46.3 percent change in the dependent variable (ROE). The corresponding F value of 22.308 and a p-value of 0.00, which is less than 0.05, indicate a significant relationship between ROE and the independent variables (D/A ratio, D/E ratio, size, and paid-up capital). These results demonstrate the influence of these variables on the ROE of the selected Nepalese commercial banks.

Table 5: Multivariate Regression Analysis of NP and Independent Variables

Variables	Beta	t	Sig	VIF
(Constant)	-8.33**	-7.045	0.00	1.283
D/A	-0.748	-1.234	0.22	1.546
D/E	-1.081	-1.003	0.318	3.631
ln_SIZE	1.669**	10.496	0.00	4.859
ln_PC	-0.287*	-1.991	0.049	
Adj. R^2	0.747			
F	74.155			
Sig	0			

*. *Significant at the 0.05 level (two-tailed).*
**. *Significant at the 0.01 level (two-tailed).*

Based on the findings presented in Table 5, a regression equation was formulated to examine the relationship between NP (Net Profit) and the independent variables. The equation is represented as:

$NP_{it} = -8.33 - 0.748\,D/A_{it} - 1.081\,D/E_{it} + 1.669\,SIZE_{it} - 0.287\,PC_{it}$ ----------- ---------- (iv)

The regression coefficient of the D/A ratio is -0.748, indicating that a one percent change in the D/A ratio leads to a 74.8 percent negative change in net profit. However, the corresponding p-value of 0.22 is higher than the significance level of 0.05, suggesting no significant relationship between net profit and the D/A ratio of the selected Nepalese commercial banks. Similarly, the regression coefficient of the D/E ratio is -1.081, implying that a one percent change in the D/E ratio results in a 108.1 percent negative change in net profit. The p-value of 0.318 is also greater than the significance level, indicating no significant relationship between net profit and the D/E ratio of the selected banks. On the other hand, the bank's size, represented by the variable SIZE, has a regression coefficient of 1.669. This indicates that a one percent change in total assets leads to a 167 percent change in net profit. The corresponding p-value (0.00) is less than the significance level of 0.05, signifying a significant relationship between net profit and the total assets of the selected Nepalese commercial banks. Similarly, the regression coefficient of paid-up capital (PC) is -0.287, indicating that a one percent change in paid-up capital results in a 28.7 percent negative change in net profit. The corresponding p-value (0.049) is equal to the significance level of 0.05, suggesting a significant relationship between net profit and paid-up capital of the selected banks.

The variance inflation factor (VIF) of each variable considered is less than 5, indicating no multicollinearity issues among the independent variables. The regression model produced compelling results, demonstrating a robust and significant association between the variables studied. The model's adjusted R-Square of 0.747 implies that the independent variables in the model explained 74.7% of banking performance. Adjusted R-Square values consider the model's predictors and provide a conservative estimate of explanatory power. The strong adjusted R-Square value further confirms the strong link between the dependent and independent variables, enhancing the reliability of the model's conclusions. Based on these findings and statistical analyses, the study concludes the hypotheses testing as follows:

Table 6: Summary of Hypothesis Testing

Hypothesis	Contents of Hypothesis	Findings
H_1:	A significant relationship exists between capital structure's leverage factors (D/A, D/E) and the profitability (ROE, NP) of Nepalese commercial banks	Rejected
H_2:	A significant relationship exists between capital structure's scale factors (size, paid-up) and the profitability (ROE, NP) of Nepalese commercial banks.	Accepted

Table 6 presents intriguing and coherent results from the hypothesis testing. Notably, there is a disparity in the findings between correlation analysis and regression analysis. As opposed to correlation analysis, Regression analysis indicates that there is no significant impact of capital structures' leverage factors (D/A & D/E ratios) on the profitability (ROE & NP) of Nepalese commercial banks. On the other hand, the regression analysis demonstrates a significant relationship between the scale factors of capital structure (SIZE and PC) and the profitability measures (ROE and NP) of Nepalese commercial banks. The results indicate that the size of a bank has a noteworthy negative impact on its profitability. Additionally, an increase in paid-up capital leads to a decrease in a bank's profitability. These findings shed light on the importance of managing capital structure scale factors to optimize profitability, highlighting the potential challenges faced by Nepalese commercial banks in this regard.

5. Conclusion

This study aimed to explore the impact of capital structure on the profitability of commercial banks in Nepal, focusing on leverage factors (D/A: debt-to-assets ratio & D/E: debt-to-equity ratio) and scale factors (SIZE & PC: paid-up capital). The research successfully addressed all initial inquiries and provided insightful findings. Correlation analysis revealed that the debt-equity ratio, debt-asset ratio, and total assets did not show a significant relationship with return on equity (ROE), while they exhibited a significant association with net profit. This finding supports the previous research conducted by Abor (2005) in Ghana, which also found a positive correlation between profitability and borrowing tendencies among companies. However, the regression analysis results diverge from expectations and contradict some prior studies. The leverage factors of capital structure (D/A & D/E ratios) do not demonstrate a statistically significant influence on the profitability of Nepalese banks. This finding differs from the commonly perceived pattern observed in foreign banks, where leverage is often considered crucial for profitability. Equity financing emerges as a crucial factor in shaping the profitability of Nepalese banks, highlighting the need for stakeholders to prioritize equity while not neglecting debt financing entirely. This finding aligns with the research conducted by Myers (2001), who proposed the tradeoff theory, pecking order hypothesis, and free cash flow theory, emphasizing the mechanisms through which firms manage the trade-off between debt tax benefits, financial distress risks, and securing external funding.

Examining the relationship between capital structure and profitability, the study found a significant decline in profitability as the size of commercial banks increased. Increased paid-up capital also had a significantly negative effect on profitability. These findings resonate with the research by Antoniou, Guney, and Paudyal (2008). The findings indicate that commercial banks in Nepal focus on establishing a strong financial position and earning customer trust, prioritizing these outcomes over maximizing profits. Consequently, there exists a clear and meaningful correlation between capital structure scale variables and profitability. The sampled period showcased improved profitability for Nepalese commercial banks, driven by a preference for equity financing over debt financing among financially successful banks. This finding is in line with the study conducted by Yegon et al. (2014) in Kenya, which concluded that an optimal capital structure for banks involves a combination of debt and equity rather than relying solely on debt financing. Additionally, bank size exerted a substantial influence on profitability, with larger banks experiencing reduced profitability. This aligns with the research conducted by Chen and Chen (2011), which emphasized the influence of firm size on profitability and firm valuation. Hence, managing the capital structure effectively to optimize profitability poses challenges for commercial banks in Nepal.

Completing this research study raises an intriguing question regarding why paid-up capital in the balance sheet is presented at its book value rather than its market value. Future researchers could further investigate the effects of additional variables such as capital adequacy ratio, growth, tax, and market value of paid-up capital to explore the relationships and impacts between capital structure and profitability. Understanding the optimal capital structure that maximizes profitability is crucial for investors, shareholders, employees, and customers within the banking sector.

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