Examination of Specific Factors of the Form Affecting Profitability of Commercial Banks: A Case from Nepal

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ABSTRACT: This study investigates the determinants of operational performance in Nepalese commercial banks, with a particular focus on the roles of capital adequacy, cost-to-income ratio, and various performance indicators. The study underscores the pivotal role of maintaining an optimal level of capital adequacy and cost-to-income ratio in shaping the profitability of commercial banks.Bank size, nonperforming loans ratio, liquidity position, cost-to-income ratio, capital adequacy, and assets quality all exhibit a positive impact on overall bank performance. Prudent management of capital adequacy and cost-to-income ratio emerges as key factors influencing profitability. Analysis with one-year lagged variables reaffirms the significance of liquidity ratio, capital adequacy, and increased capital ratio in enhancing bank performance, particularly in terms of return on assets. An improved assets quality also contributes to overall bank performance. Effective liquidity management is crucial, emphasizing considerations of liquidity ratio, capital-to-assets ratio, investment-to-asset ratio, and quick ratio. Commercial banks are advised to operate within a threshold level of capital ratio, avoiding excessively high levels that may negatively impact profitability. The study recommends investing in well-trained manpower to enhance operational efficiency and customer service. In the broader economic context, the study highlights the vital role of banks in contributing to the country's development. It calls for strong supervision, monitoring, and the implementation of a one-window service in lending and investment activities. Commercial banks are encouraged to demonstrate their potential contribution to the national economy by ensuring a satisfactory rate of return on investment, efficient mobilization of savings, and strategic competitiveness.

KEYWORDS: Competitiveness, Economic Contribution, Manpower Investment, Capital Ratios, Liquidity.

1. INTRODUCTION

Commercial banks face challenges in enhancing their financial positions to cope with the risks associated with openness and globalization. Profitability is a crucial factor that can help them strengthen their financial foundations and resilience to negative shocks, ultimately contributing to the stability of the financial system (Abate & Mesfin, 2019).

The determinants of profitability, both managerial (internal) and environmental (external) factors, play a significant role in shaping the banking sector (Khalatur & Gushcha, 2018). Managerial factors are influenced by management decisions and objectives, such as capital ratio, credit risk management, productivity growth, and the bank's size and performance (Mishra, A.K, Kandel, D.R., & Aithal, P. S., 2021). On the other hand, environmental factors are shaped by external forces, including financial market structure, trade interdependence, economic growth, inflation, market interest rates, and ownership structure (Dang et al., 2021).

In the context of Nepal, the importance of this study is to identify the managerial factors that impact commercial banks (Dang et al., 2021). Commercial banks are fundamental to a nation's economic development, serving as key financial institutions that handle various financial transactions, including accepting deposits, disbursing loans, and offering other financial services. Their role in providing loans to investors is particularly important, as it fosters an environment conducive to investment and economic growth.

Liquidity management is a critical aspect of the financial system, with commercial banks serving as effective intermediaries between savers and borrowers. These banks, along with other liquidity management institutions, play a vital role in ensuring the efficient transfer of funds from fund lenders to fund seekers (Brahmaiah, 2018). They facilitate the allocation of resources from less essential uses to more productive investments, contributing to the overall liquidity management system's effectiveness (Koroleva et al., 2021).

Profitability remains a key goal for financial institutions, as it reflects their financial health and ability to continue operations. It also serves as an indicator of the effectiveness of investment, operational, and financing policies implemented by bank management(Ariyadasa et al., 2017). However, striking a balance between liquidity and efficiency can be challenging for many banks.

In the context of commercial banking, capital adequacy ratio is a crucial indicator of financial solvency and plays a vital role in ensuring stability and efficiency in the banking sector (Shukla et al., 2013). It serves as a safety measure to protect depositors and maintain the stability of the financial system.

Liquidity, on the other hand, is the ability to quickly convert assets into cash to meet immediate and short-term obligations. It is essential for a bank to have adequate liquidity to fulfill commitments, including lending, investment, withdrawals, deposits, and accrued liabilities (Njihia, 2005).

In summary, the profitability and liquidity of commercial banks are influenced by a multitude of internal and external factors, and understanding and managing these factors are essential for the financial stability of the banking sector and the overall economic development of a country(Mishra & Aithal, 2021a):(Mishra & Aithal, 2021b).

1.2 Statement of the problem:

Banks play a crucial role in facilitating business operations by utilizing funds accumulated from various depositors. While these financial institutions are registered under public acts, they also involve private shareholders alongside promoters, often referred to as public holdings. Nepal Rastra Bank regulates and supervises these banks, which, due to the absence of government shares, are sometimes considered private organizations. The performance of these banks is overseen by the manager or CEO, and shareholders rely on them to yield profits from their investments.

The decision-making process in a bank also involves a group of shareholders directly associated with the institution, collectively known as the board of directors. The manager formulates business strategies, which are subsequently approved by the board. These strategies empower the manager to make various business decisions independently, known as managerial decisions.

Capital adequacy is a critical measure of a bank's financial strength, reflecting its ability to manage unexpected losses. This ratio is positively correlated with a bank's financial stability and inversely related to the risk of failure (Saber Said Al-Delawi, 2019). The efficiency of bank management can be assessed through the cost-to-income ratio, a vital internal factor influencing bank capital and the cost of financial intermediation(Nsambu, 2014) . Studies have demonstrated that the cost-to-income ratio negatively impacts the financial performance of banks(Ojha, 2018).

In the context of Nepal, while studies on profitability exist, there is a scarcity of research conducted on the same variables. A study with variables such as ROA, CIR, EQR, BS, DER, and TCR found that the bank's equity ratio positively affects bank performance, while debt-to-equity ratio, bank size, and total capital adequacy ratio negatively impact return on assets(Khanal, 2016). These findings differ from those of previous research (Aryal, 2022), indicating that a higher cost-to-income ratio leads to poorer bank performance, primarily due to inadequate expense management (Jha & Hui, 2012). Despite existing empirical evidence from other countries and some research conducted in Nepal, there is a lack of recent data-specific evidence in the Nepalese context.

1.3 Research Objectives:

This study aims to address the following objectives:

The study seeks to investigate the relationship between capital adequacy, cost-to-income ratio, asset quality,

nonperforming loans, liquidity position, bank size, and profitability.

Furthermore, the study aims to determine whether capital adequacy, cost-to-income ratio, asset quality, nonperforming loans, liquidity position, and bank size have a significant impact on profitability within the Nepalese banking sector.

2 LITERATURE REVIEW

Commercial banks invest their deposits in profitable sectors based on directives from Nepal Rastra Bank (NRB) and their own bank's policies. NRB's policies and guidance evolve over time, making it essential for researchers and organizations to conduct up-to-date studies that align with the latest NRB guideline and latest research (Poudel, 2016):(Budhathoki & Rai, 2020):(Bhati et al., 2019):(Gnawali, 2018).

In Nepal, studies on these specific variables are scarce, although research on bank profitability exists with different variables. However, within this context, a study focusing on these variables within a commercial bank setting is lacking.

Financial analysis plays a pivotal role in assessing the financial performance of commercial banks, a matter of significant interest to stakeholders who seek insights into the bank's situation. This study employs a descriptive and causal comparative research design. Unlike previous studies that concentrated on comparative financial analysis related to factors like capital adequacy, debt-to-equity, equity ratio, and bank profitability, this research explores the influence of internal factors on the performance of Nepalese commercial banks, considering variables such as cost-to-income ratio, liquidity position, nonperforming loans, asset quality, capital adequacy, bank size, and profitability (Bhattarai, 2020): (Mishra et al., 2021): (Hakuduwal, 2021).

3 METHODOLOGY

3.1 Research Design

This study employs both descriptive research design and causal-comparative research design to conduct the research. Descriptive research aims to provide a comprehensive description of the characteristics of a particular population or phenomenon under study. In contrast, causal-comparative research investigates the impact of an independent variable on a dependent variable by comparing two or more groups of individuals.

3.2 Population and Sample Procedure

The study's population consists of all the commercial banks currently operating in Nepal. There are a total of 27 commercial banks in Nepal. To conduct the research, a sample of five commercial banks was selected using simple random sampling methods. This sample represents approximately 17.86% of the entire population. The selected banks for the sample include Standard Chartered Bank Limited, Nepal SBI Bank, Himalayan Bank, Everest Bank Limited, and NMB Bank.

Table 1: Selection of banks, study period, and number of observations

S. N	Name of the company	Study period	Observation
1.	Standard Charter Bank Limited	2014-2021	8
2.	Nepal SBI Bank Limited	2014-2021	8
3.	Himalayan Bank Limited	2014-2021	8
4	Everest Bank Limited	2014-2021	8
5	NMB Bank Limited	2014-2021	8
Total Observations			40

Thus, the study is based on 40 observations

3.3 Theoretical Framework

This study is guided by a conceptual framework that focuses on managerial factors affecting the profitability of Nepalese commercial banks. Specifically, it considers factors such as capital requirements, operating costs, asset quality, nonperforming loans, liquidity position, and the size of the bank as critical dimensions of the model. The study aims to examine the following hypothese
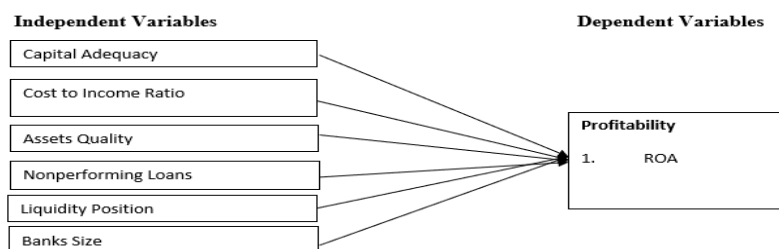

Figure 1 Research framework *(Source:* (Ojha, 2018):(Adhikari, 2021):(Marahatta et al., 2016)).

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Research Hypothesis

H1:   There is a significant relationship between Capital Adequacy and profitability.

H2:   There is a significant relationship between Cost to income and profitability.

H3:   There is a significant relationship between the Assets quality and profitability.

H4:   There is a significant relationship between Nonperforming loans and profitability.

H5:   There is a significant relationship between the Liquidity position and profitability.

H6:   There is a significant relationship between the size of bank and profitability.

H7:   There is a significant effect of Capital Adequacy on profitability.

H8:   There is a significant effect of Cost to income on profitability.

H9:   There is a significant effect of Assets quality on profitability.

H10: There is a significant effect of Nonperforming loans on profitability.

H11: There is a significant effect of Liquidity position on profitability.

H12: There is a significant effect of size of bank on profitability.

This study is based on quantitative data gathered primarily from secondary sources. The data were collected from the annual reports and websites of the selected sample banks, including Standard Chartered Bank Limited, Nepal SBI Bank Limited, Himalayan Bank Limited, Everest Bank Limited, and NMB Bank.

Additional reference materials were obtained from Nepal Rastra Bank publications, various journals, magazines, and other published reports to enhance the research process.

Regression Model

In this study, the initial model estimation assumes that the lending interest rate of joint venture commercial banks depends on factors such as operating cost to total assets ratio, deposit interest rate, profitability, and default risk. The model can be expressed as follows:

$$ROA=\beta_0+\beta_1 CR+\beta_2 OCE+ \beta_3 AQ +\beta_4 NLR+\beta_5 LP +\beta_6 BS +\acute{\varepsilon}$$

Where,

ROA= Return on Assets (ROA)
CAR= Capital Adequacy Ratio
CIR= Cost to Income Ratio

AQ= Assets quality
NLR= Nonperforming loans Ratio
LP= Liquidity Position
BS= Bank Size (BS)

Additionally, the study's preliminary model assumes that the performance of Nepalese commercial banks is influenced by various factors, including capital adequacy, cost-income ratio, debt-to-equity ratio, equity capital to assets ratio, bank size, and liquidity ratio.

Analysis of Data

Capital Adequacy

Capital adequacy ratio (CAR) is a measurement of a bank's available capital expressed as a percentage of a bank's risk-weighted credit exposures. The capital adequacy ratio, also known as capital-to-risk weighted assets ratio (CRAR).

Table 2: *Capital Adequacy (in Percentage)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	14.22%	11.52%	10.68%	10.43%	16.39%
2014/15	13.93%	11.21%	11.02%	11.02%	14.84%
2015/16	12.54%	12.39%	11.55%	11.59%	11.74%
2016/17	12.27%	13.28%	11.23%	11.31%	10.75%
2017/18	13.10%	14.03%	11.14%	13.33%	11.13%
2018/19	16.38%	13.49%	10.84%	12.66%	10.98%
2019/20	21.08%	15.71%	12.15%	14.54%	13.61%
2020/21	22.99%	15.15%	12.15%	14.20%	15.75%
Average	15.81%	13.35%	11.35%	12.39%	13.15%
Rank	1	2	5	4	3

(Source: Annual report of sample banks)

Table 1 shows that capital adequacy of SCBL holds the top rank with an average of 15.81% while HBL holds the bottom position with an average of 11.35%. Requirement ratio indicates good performance of capital adequacy on the bank. A bank with a high capital adequacy ratio is considered to be above the minimum requirements needed to suggest solvency. Capital adequacy of SCBL holds the top rank while HBL holds the bottom position. Requirement ratio indicates good performance of capital adequacy on the bank. Therefore, the higher a bank's CAR, the more likely it is to be able to withstand a financial downturn or other unforeseen losses.

Cost to Income Ratio

Cost to Income Ratio is primarily a metric that measures the efficiency of profit earned as a function of operating costs.

Figure 2 shows that Cost to Income Ratio of NMB Bank holds the top rank with an average of 79.89% while NSBI holds the bottom position with an average of

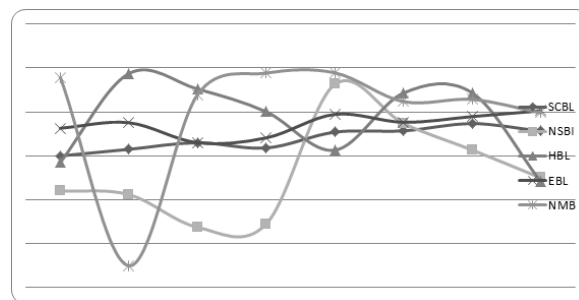52.89%. Higher ratio shows better position of the bank in terms of profit.

Figure 2 Cost to Income Ratio

Assets Quality

Assets quality banks make loans to households and businesses like farms and a whole heap of others – these are considered assets for the banks. A common way to measure the quality of these assets is by the amount of these loans that are Nonperforming.

Table 4: *Assets quality (in Percentage)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	72.50%	91.09%	38.45%	61.28%	49.91%
2014/15	87.62%	49.47%	56.47%	74.06%	59.41%
2015/16	57.84%	48.86%	74.85%	75.18%	74.33%
2016/17	56.11%	64.74%	70.07%	76.60%	75.56%
2017/18	48.32%	77.44%	72.72%	65.57%	74.31%
2018/19	56.17%	72.03%	77.57%	72.50%	81.85%
2019/20	61.47%	74.50%	82.25%	81.27%	83.52%
2020/21	66.45%	19.09%	21.04%	21.52%	75.43%
Average	63.31%	62.15%	61.68%	66.00%	71.79%
Rank	3	4	5	2	1

(Source: Appendixes)

Table 4 shows that Assets quality of NMB holds the top rank with an average of 71.79% while HBL holds the bottom position with an average of 68.68%. Higher ratio shows better position of the bank. The asset quality rating of a bank reflects its existing and potential credit risk associated with its loan and investment portfolios, other real estate owned, and other assets, as well as off-balance sheet transactions.

Nonperforming loans ratio

The nonperforming loan ratio, better known as the NPL ratio, is the ratio of the amount of nonperforming loans in a bank's loan portfolio to the total amount of outstanding loans the bank holds. The NPL ratio measures the effectiveness of a bank in receiving repayments on its loans

Table 5: *Nonperforming loans Ratio (in Percentage)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	0.90%	2.19%	0.76%	0.10%	0.81%
2014/15	1.20%	1.08%	6.34%	1.59%	1.42%
2015/16	0.78%	0.38%	2.99%	0.64%	4.71%
2016/17	0.49%	0.26%	2.01%	0.99%	4.49%
2017/18	0.34%	0.19%	3.34%	0.67%	2.47%
2018/19	0.33%	0.14%	1.26%	0.39%	0.65%
2019/20	0.20%	0.10%	0.87%	0.26%	1.37%
2020/21	1.37%	3.44%	2.64%	2.36%	1.15%
Average	0.70%	0.97%	2.53%	0.88%	2.13%
Rank	5	3	1	4	2

Table 5 shows that Nonperforming loans ratio of HBL holds the top rank with an average of 2.53% while SCBL holds the bottom position with an average of 0.70%. Lower ratio shows better position of the bank in terms of profit.

Liquidity Position

The liquidity position is the difference between the sum of liquid assets and incoming cash flows on one side and outgoing cash flows resulting from commitments on the other side, measured over a defined period, being the measure of the liquidity risk.

Table 6: *Liquidity Position (in Percentage)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	25.49%	10.44%	23.34%	19.32%	10.68%
2014/15	29.08%	13.29%	26.93%	16.91%	12.27%
2015/16	20.63%	12.12%	9.34%	17.06%	22.97%
2016/17	32.16%	10.89%	7.80%	18.70%	15.33%
2017/18	36.27%	14.23%	11.41%	25.33%	17.00%
2018/19	15.41%	13.23%	9.37%	20.30%	14.39%
2019/20	27.84%	13.25%	8.31%	18.35%	14.62%
2020/21	36.73%	11.58%	12.79%	22.30%	21.50%
Average	27.95%	12.38%	13.66%	19.78%	16.10%
Rank	1	5	4	2	3

Table 6 shows that Liquidity Position of SCBL holds the top rank with an average of 27.95% while NSBI holds the bottom position with an average of 12.38%. Higher ratio shows better position of the bank.

Bank size (natural logarithm of total assets)

Bank size is measured as the natural logarithm of the value of total assets in amount. On the activity side, we use the ratio of loans to total assets to capture the bank's involvement in market-based activities

Table 7: *Bank size (in log Unit)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	10.64	10.66	10.67	10.66	10.20
2014/15	10.62	10.76	10.74	10.75	10.27
2015/16	10.66	10.81	10.79	10.82	10.40
2016/17	10.73	10.79	10.87	10.85	10.48
2017/18	10.81	10.77	10.92	11.00	10.62
2018/19	10.81	10.89	11.00	11.06	10.87
2019/20	10.89	11.00	11.03	11.07	10.94
2020/21	10.92	12.01	11.07	11.16	10.96
Average	10.76	10.96	10.89	10.92	10.59
Rank	4	1	3	2	5

Table 7 shows that Bank size (natural logarithm of total assets) of NSBI hold the top rank with an average of 10.96 while NMB bank holds the bottom position with an average of 10.59. Higher ratio shows better position of the bank.

Return on Assets (ROA)

The return on assets ratio, often called the return on total assets, is a profitability ratio that measures the net income produced by total assets during a period by comparing net income to the average total assets.

Table 8: *Return on Assets (ROA) (in Percentage)*

Year	SCBL	NSBI	HBL	EBL	NMB
2013/14	2.55%	1.01%	1.91%	2.01%	1.39%
2014/15	2.80%	0.83%	1.75%	1.95%	1.36%
2015/16	2.67%	1.19%	1.54%	2.24%	1.43%
2016/17	2.51%	1.51%	1.30%	2.20%	1.36%
2017/18	1.99%	1.80%	1.34%	1.59%	1.21%
2018/19	1.98%	1.70%	1.94%	1.52%	1.49%
2019/20	1.84%	1.53%	2.03%	1.72%	1.69%
2020/21	2.61%	0.19%	1.61%	1.78%	1.91%
Average	2.37%	1.22%	1.68%	1.88%	1.48%
Rank	1	5	3	2	4

(Source: Appendixes)

Table 8 shows that Return on Assets (ROA) of SCBL hold the top rank with an average of 2.37% while NSBI bank holds the bottom position with an average of 1.22%. Higher ratio shows better position of the bank.

Descriptive Statistics

In Descriptive statistics includes minimum value, maximum value, mean value and standard deviation with sample of 5 commercial banks for the study period 2012/13 to 2018/19 that makes total of 40 observations. In this table Return on assets is dependent variable and Capital adequacy, Cost to income ratio, Assets quality, Nonperforming loan ratio, Liquidity position, Bank size are independent variables. Descriptive statistics are brief descriptive coefficients that summarize a given data set, which can be either a representation of the entire or a sample of a population. Descriptive statistics are broken down into measures of central tendency and measures of variability (spread). Measures of central tendency include the mean, median, and mode, while measures of variability include standard deviation, variance, minimum and maximum variables.

Table 9: *Descriptive Statistics*

Variables	Minimum	Maximum	Mean	SD
Capital Adequacy Ratio (%)	10	14	11.11	1.197
Cost to Income Ratio (%)	10	98	70.27	20.132
Assets quality (%)	19	91	64.99	17.415
Nonperforming loans ratio (%)	.10	6.34	1.4418	1.42592
Liquidity Position (%)	7.80	36.73	17.974	7.51706
Bank size (Log Unit)	10	12	10.82	.284
Return on Assets (%)	.19	2.80	1.7185	.51085

Table result shows that average performance of bank (ROA) with 5 samples of commercial banks is 1.7185% where minimum value is 0.19% and maximum value is 2.80% with volatility ratio 0.51085%. The capital adequacy ranges from10% to 14% with average of 11.11%, cost to income ratio (CIR) ranges from 10% to 98% with average is 70.27%. Average of the Assets quality is 64.99%. Average of the Nonperforming loans ratio is 1.44%. Average of the Liquidity Position is 17.97%. Average of the Bank size is 10.82%.

The mean shows the numerical value separating the higher half of a data sample. The standard deviation shows how much variation or dispersion exists from the mean. The low standard deviation indicates that the data are very close to the mean; high values of standard deviation indicate that the data set expands values. The difference is how the random variable is distributed near the mean value. The arithmetical average of the study variables is presented in table 4.8. The maximum and minimum values indicate high or low value variable.

Correlations Analysis

Table 10: *Correlations*

Variables		Capital requirement	Cost to income ratio	Assets quality	Nonperforming loans ratio	Liquidity Position	Bank size	Return on Assets
Capital requirement	Pearson Correlation	1						
	Sig. (2-tailed)							
	N	40						
Cost to income ratio	Pearson Correlation	-.086	1					
	Sig. (2-tailed)	.599						
	N	40	40					
Assets quality	Pearson Correlation	-.005	.310	1				
	Sig. (2-tailed)	.973	.052					
	N	40	40	40				
Nonperforming loans ratio	Pearson Correlation	.163	.254	-.120	1			
	Sig. (2-tailed)	.315	.114	.459				
	N	40	40	40	40			
Liquidity Position	Pearson Correlation	.028	.112	-.108	-.049	1		
	Sig. (2-tailed)	.865	.490	.508	.764			
	N	40	40	40	40	40		
Bank size	Pearson Correlation	-.279	-.030	-.314*	-.008	-.086	1	
	Sig. (2-tailed)	.081	.852	.049	.959	.600		
	N	40	40	40	40	40	40	
Return on Assets	Pearson Correlation	-.098	.173	.245	-.334*	.588**	-.267	1
	Sig. (2-tailed)	.547	.286	.127	.035	.000	.096	
	N	40	40	40	40	40	40	41

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

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

Table 10 it is found that the value of correlation coefficient r= -0.098 which means there is low negative linear relationship between Capital requirement and Return on Assets (ROA). It is found that the value of correlation coefficient r= 0.173 which means there is low positive linear relationship between Cost to income ratio and Return on Assets (ROA). It is found that the value of correlation coefficient r= 0.245 which means there is positive linear relationship between Assets quality and Return on Assets (ROA). It is found that the value of correlation coefficient r= -0.334 which means there is negative linear relationship between Nonperforming loans ratio and Return on Assets (ROA). It is found that the value of correlation

coefficient r= 0.588 which means there is positive linear relationship between Liquidity Position and Return on Assets (ROA). It is found that the value of correlation coefficient r= -0.267 which means there is negative linear relationship between Bank size and Return on Assets (ROA).

The various types of shrinkage are highly negatively correlated with water content, although the shrinkages in volume and surface area show the highest correlation ($r = -0.98$). Shrinkage of cooked meats increases with the volume of water removed; the more water is removed, the greater the pressure imbalance produced between the interior and the exterior of the meat, which

generates contracting stresses leading to shrinkage and changes in its shape (Mishra & Aithal, 2021a):(Mishra et al., 2021):(Mishra & Aithal, 2021b).

Summary of correlation, there is low negative linear relationship between Capital adequacy and Return on Assets (ROA). There is low positive linear relationship between Cost to income ratio and Return on Assets (ROA). There is positive linear relationship between Assets quality and Return on Assets (ROA). There is negative linear relationship between Nonperforming loans ratio and Return on Assets (ROA). There is positive linear relationship between Liquidity Position and Return on Assets (ROA). There is negative linear relationship between Bank size and Return on Assets (ROA).

Regression Analysis

Regression analysis helps to measure internal factors and profitability of commercial banks. Regression analysis has been conducted in Bank size, Nonperforming loans ratio, Liquidity Position, Cost to income ratio, Capital adequacy, and Assets quality is used as an independent variable and return on assets is used as dependent variable. Regression result is presented as follow.

Table 11: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746a	.557	.476	.37340

a. Predictors: (Constant), Bank size , Nonperforming loans ratio, Liquidity Position, Cost to income ratio, Capital requirement, Assets quality

Table 11 shows that R square is 0.557. R square of 0.557 indicates that 55.7 percent of variation on Return on Assets is explained by Bank size, Nonperforming loans ratio, Liquidity Position, Cost to income ratio, Capital requirement, Assets quality is (independent variable in the model).

Table 12: *ANOVA^b*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.779	6	.963	6.908	.000a
	Residual	4.601	33	.139		
	Total	10.380	39			

a. Predictors: (Constant), Bank size , Nonperforming loans ratio, Liquidity Position, Cost to income ratio, Capital adequacy, Assets quality

b. Dependent Variable: Return on Assets

Table 12 shows the significance of the regression model (significant of R square). Sig value of 0.000 of F test indicates that the model is significant at 5 percent level of significant. P value is less than 0.05; therefore we can say that the model used to show the impact in accepted.

From the above ANOVA it is clear that our regression model is statistically significant and we reject research null hypothesis and accept the alternative hypothesis i.e. there is a significant relationship between internal factors and bank's profitability.

Table 13: *Coefficients^a*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	4.968	2.872		1.730	.093
	Capital adequacy	-.047	.053	-.108	-.872	.009
1	Cost to income ratio	.003	.003	.117	.881	.005
	Assets quality	.005	.004	.172	1.274	.001
	Nonperforming loans ratio	-.108	.046	-.299	-2.367	.004

Liquidity Position	.039	.008	.565	4.700	.000
Bank size	-.352	.235	-.194	-1.499	.003

a. Dependent Variable: Return on Assets

Regression equation showing the relation between all independent variable and dependent variable

$Y=a+b_1X_1+b2X_2+b3X_3+b4X_4+b5X_5+b6X_6$ ....(i)

$Y=4.968-0.047X_1+0.003X_2+0.005X_3-0.108X_4+0.039X_5-0.352X_6$

One unit change in X1 will lead Y to change with -0.047 keeping X2, X3, X4, X5 and X6 constant, One unit change in X2 will lead Y to change with 0.003 keeping X1, X3, X4, X5 and X6 constant, One unit change in X3 will lead Y to change with 0.005 keeping X1, X2, X4, X5 and X6 constant, One unit change in X4 will lead Y to change with -0.108 keeping X1, X2, X3, X5 and X6 constant and One unit change in X5 will lead Y to change with 0.039 keeping X1, X2, X3, X4 and X6 constant finally One unit change in X6 will lead Y to change with -0.352 keeping X1, X2, X3, X4 and X5 constant

In the above equation No (i) the value of R^2 is 0.557 which means that 55.7% variation on Bank size, Nonperforming loans ratio, Liquidity Position, Cost to income ratio, Capital adequacy, Assets quality is explained by Return on Assets. Hence, there is significant relationship between Return on Assets and, Liquidity Position. P value is less than 0.05 at the 5% level of significance. There is insignificant relationship between Return on Assets and Bank size, Nonperforming loans ratio, Cost to income ratio, Capital adequacy, Assets quality. P value is more than 0.05 at the 5% level of significance.

The table results indicate that the average performance of banks, as measured by the Return on Assets (ROA), is 1.7185% across 5 commercial banks, with a minimum of 0.19% and a maximum of 2.80%. The volatility ratio is 0.51085%. Capital adequacy ranges from 10% to 14%, averaging 11.11%, while the cost-to-income ratio (CIR) ranges from 10% to 98%, with an average of 70.27%. Asset quality averages at 64.99%, nonperforming loans ratio at 1.44%, liquidity position at 17.97%, and bank size at 10.82%.

There is an expected decline in CIR, serving as a proxy for operational efficiency, which will lead to an increase in bank profits(Tuladhar, 2017):(Maharjan, 2022). This finding aligns with(Tharu & Shrestha, 2019):(SINGH et al., 2021) , who also identified an inverse relationship between the cost-to-income ratio and profitability.

The correlation summary reveals relationships between variables and ROA. There is a low negative linear relationship between capital requirement and ROA, a low positive linear relationship between CIR and ROA, a positive linear relationship between asset quality and ROA, a negative linear relationship between nonperforming loans ratio and ROA, a positive linear relationship between liquidity position and ROA, and a negative linear relationship between bank size and ROA.

The $R2$ value of 0.557 indicates that 55.7% of the variation in bank size, nonperforming loans ratio, liquidity position, CIR, capital requirement, and asset quality is explained by ROA. A significant relationship is observed between ROA and liquidity position ($p < 0.05$), while relationships with bank size, nonperforming loans ratio, CIR, capital adequacy, and asset quality are deemed insignificant ($p > 0.05$).

The commercial banks exhibit a positive and insignificant relation with ROA. A 1% increase in the PRCF results in a 5.9% change in ROA. Credit risk, arising from various banking activities, is inversely related to profitability(Maharjan, 2022):(Yadav, 2020):(Ariyadasa et al., 2017).

Theoretical considerations on bank size suggest potential economies of scale positively impacting profits, but diseconomies of scale may arise with excessive size, negatively affecting management efficiency confirm a direct relationship between bank size and profitability.

In summary , the $R2$ value of 0.557 underscores the significant relationship between ROA and liquidity position, while other variables show insignificant relationships at the 5% level of significance.

CONCLUSIONS

This study highlights the pivotal role of capital adequacy, cost-to-income ratio, and various performance indicators in shaping the operational landscape of Nepalese commercial banks. The findings underscore the significance of maintaining an optimal level of capital adequacy and cost-to-income ratio, as these factors play a crucial role in determining the profitability of commercial banks.

The study reveals a positive impact of bank size, nonperforming loans ratio, liquidity position, cost-to-income ratio, capital adequacy, and assets quality on overall bank performance. Notably, a prudent management of capital adequacy and cost-to-income ratio emerges as key factors influencing the profitability

of commercial banks. It is emphasized that commercial banks should operate within a threshold level of capital ratio, avoiding an excessively high level that may negatively impact profitability.

Furthermore, the analysis with one-year lagged variables reaffirms the significance of liquidity ratio, capital adequacy, and increased capital ratio in enhancing bank performance, as measured by return on assets. The positive relationship with assets quality suggests that an improvement in this aspect may contribute to an increase in overall bank performance. Implications drawn from the study stress the importance of effective liquidity management through considerations of liquidity ratio, capital-to-assets ratio, investment-to-asset ratio, and quick ratio. Commercial banks are advised to operate with prudence, avoiding excessively high capital-to-assets ratios. Additionally, the study recommends investing in well-trained manpower to enhance operational efficiency and customer service.

In the broader economic context, the study underscores the vital role of banks in contributing to the country's development. The need for strong supervision and monitoring, along with the implementation of a one-window service in lending and investment activities, is highlighted. The study encourages banks to demonstrate their potential contribution to the national economy by ensuring a satisfactory rate of return on investment, efficient mobilization of savings, and strategic competitiveness.

Looking forward, the study suggests comprehensive and drastic steps for restructuring banks, especially those with low and unstable levels of performance efficiency. Emphasis is placed on expanding the scope of businesses, promoting entry deregulations for well-capitalized and technologically advanced banking entities, and ensuring that deregulation efforts do not compromise the stability of financial firms. Ultimately, these recommendations aim to mitigate risk exposure and foster a more robust and competitive commercial banking sector in Nepal.

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