"Financial Performance of Commercial Banks in Nepal"

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Abstract

The study intends to investigate the effect of "Financial Performance of Commercial Banks in Nepal". The data was collected for the study from 10 commercial banks of 8 years of data from 2014/2015 to 2021/2022. The study employed descriptive and causal-comparative research designs, utilizing correlation and regression analyses for research investigation. Correlation analysis reveals the relationships between different financial indicators. The analysis of financial indicators highlights the importance of factors such as capital adequacy, asset quality, management efficiency, and earnings in driving profitability. Maintaining a strong capital base and high asset quality positively impacts profitability, while effective management practices significantly contribute to financial performance. Although not statistically significant, the cash reserve ratio may still indirectly influence profitability. The examined factors explain a significant proportion of the Return on assets and net profit margin variation. Incorporating these factors into decision-making and strategy development can enhance the organization's financial performance and sustainable growth. In conclusion, maintaining a strong capital base, high asset quality, efficient management practices, and favourable earnings are essential for enhancing financial performance in commercial banks. Strategic financial planning, risk management, and capital allocation can strengthen the capital base. Effective risk management strategies and promptly addressing non-performing assets are crucial for maintaining high asset quality. Optimizing processes, fostering collaboration, and investing in training can improve management efficiency. Diversifying revenue streams and monitoring vital financial metrics can drive profitability. Incorporating these factors into decision-making and developing strategies to leverage their positive effects can improve financial performance, competitiveness, and sustainable growth in the banking industry.

Keywords: *Capital adequacy, Asset quality, Management efficiency, Profitability, Cash reserve ratio, Return on assets, Net profit margin.*

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INTRODUCTION

Financial performance analysis plays a crucial role in evaluating the banking sector's stability, profitability, and overall health (Cruz-Rodríguez, 2018). One widely used approach for analyzing financial performance is the CAMEL framework, which was employed to represent Capital adequacy, Asset quality, Management, Earnings, and Liquidity. (Guru & Staunton, 2019). This framework comprehensively assesses a bank's financial strength by examining these key areas.

The concept of financial performance analysis using the CAMEL approach gained prominence after implementing Basel II and Basel III regulatory frameworks. These frameworks introduced more stringent capital adequacy requirements and emphasized the importance of risk management in the banking sector (Lepetit, Nys, Rous, & Tarazi, 2008). The CAMEL approach aligns with the objectives of these frameworks by focusing on crucial factors that determine the financial stability of the banking sector.

In advanced economies like the U.S. and European countries, regulatory authorities and financial institutions have widely adopted financial performance analysis using the CAMEL approach (Guru & Staunton, 2019). It enables regulators to monitor the banking sector's health and identify institutions that may pose a risk to financial stability (Lepetit et al., 2008). Moreover,

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banks utilize the CAMEL framework to evaluate their performance and make informed strategic decisions.

In recent years, there has been a growing interest in applying the CAMEL framework to assess the financial performance of banks in Asian countries. These countries, including emerging economies like China, India, and Indonesia, have experienced rapid growth in their banking sectors (Mamun, Hassan, & Maroney, 2018). However, they also face unique challenges like regulatory compliance, asset quality issues, and liquidity management.

Financial performance analysis using the CAMEL approach in Asian countries allows policymakers, regulators, and investors to gain insights into the strengths and weaknesses of banks operating in these regions (Mamun et al., 2018). It facilitates a comparative analysis across different countries, helping identify best practices and areas that require improvement (Jayaraman & Lee, 2015). Furthermore, it enables financial institutions to benchmark their performance against regional and global peers.

However, applying the CAMEL approach in Asian countries may present specific issues and complexities. These include variations in regulatory frameworks, data availability and quality, differences in accounting standards, and cultural factors that may influence risk management practices (Jayaraman & Lee, 2015). Addressing these challenges is crucial to ensure accurate and meaningful financial performance analysis and promote transparency and stability in the banking sector.

Financial performance analysis is critical to evaluating the stability, profitability, and overall health of the banking sector (Cruz-Rodríguez, 2018). The CAMEL approach has emerged as a widely utilized framework for analyzing financial performance within the banking industry (Guru & Staunton, 2019). It comprehensively assesses a bank's financial strength by examining key areas crucial for its stability and success.

Previous findings have highlighted the CAMEL approach's efficacy in assessing banks' financial outcomes. For instance, a study by (Guru and Staunton, 2019) compared the financial results of select private and public sector banks in India using this methodology. The findings revealed notable variations in the banking performance of these financial institutions across various CAMEL indicators, emphasizing the importance of each component in evaluating financial health. Similarly, a study by Mamun, Hassan, and Maroney (2018) examined the efficiency and profitability of banks in South Asian countries using the CAMEL model. The results indicated variations in financial performance across different countries, reflecting the region's diverse banking environments and regulatory frameworks.

Despite these previous findings, a research gap exists regarding applying the CAMEL approach in specific geographical regions or banking contexts. For example, limited research has been conducted regarding the financial results analysis of the banking sector in Asian countries, such as China, India, and Indonesia, using the CAMEL framework. These countries have witnessed substantial growth in their banking sectors and face unique regulatory compliance, asset quality, and liquidity management challenges. Likewise, the researcher has used Net profit margin as an independent variable, so earning has been discarded. Therefore, further research is needed to explore the applicability and effectiveness of the CAML approach in these contexts.

The financial performance analysis of banks is crucial for assessing stability and profitability in the banking sector (Cruz-Rodríguez, 2018). The CAMEL method is widely used in financial performance analysis (Guru & Staunton, 2019). However, there is a research gap in applying the CAMEL approach to evaluate the financial effectiveness of banks in specific Asian countries. Previous research has shown the effectiveness of the CAMEL approach in evaluating financial performance, such as the study conducted by Guru and Staunton (2019) in India. Variations in financial performance were observed across different banks, highlighting the importance of each CAMEL component. Mamun, Hassan, and Maroney (2018) also examined the efficiency and profitability of banks in South Asian countries using the CAMEL model, revealing differences in financial performance among countries. However, there is a need to explore the application of the CAMEL approach in Asian countries like China, India, and Indonesia, which face unique challenges related to regulatory compliance, asset quality, and liquidity management.

Conducting a comprehensive financial performance analysis using the CAMEL approach in these countries would provide valuable insights for policymakers, regulators, and investors, enabling informed decisions on regulatory measures, risk management strategies, and investments. Moreover, the study would enhance the current body of knowledge by broadening the understanding of financial performance analysis in diverse banking environments. The effectiveness of the CAMEL approach in emerging economies, particularly in Asian countries, remains relatively unexplored. The findings would bridge this gap and shed light on the challenges and dynamics of banking sectors in these regions. The study's outcomes could lead to development of tailored strategies and policies to improve financial stability and performance in Asian banks. Benchmarking performance against regional and global peers would assist institutions in enhancing risk management practices, resource allocation, and overall financial health. Additionally, comprehensive financial performance analysis would contribute to overall economic growth and stability in Asian countries. It would promote transparency, accountability, and efficiency in the banking sector, attracting investments, fostering economic development, and maintaining financial system integrity. In conclusion, research analyzing the bank's financial results in Asian countries using the CAMEL approach is needed. This research would fill the existing research gap, provide valuable insights, contribute to the literature, and have implications for policy formulation and regional economic stability. The problems that have been addressed in this stipulated research are as mentioned below:

- → Is there any relationship between Capital adequacy, Asset quality, Management, Liquidity and financial performance?
- → Do Capital adequacy, Asset quality, Management and Liquidity affect financial performance?

Objectives of the Study

The study's aims are mentioned below

- → To measure the relationship between Capital Adequacy, Asset quality, Management, Liquidity and financial performance.
- → To assess the effect of Capital Adequacy, Asset quality, Management and Liquidity on financial performance.

Hypothesis of the Study

A hypothesis is an initial assumption about the eventual result, which needs testing after data analysis. In the context of the study's research setting, the following alternative

hypotheses are developed to conduct and give direction to the study.

H1: There is a significant effect of Capital Adequacy on Return on assets.
H2: There is a significant effect of Asset quality on Return on asset.
H3: There is a significant effect of Management on Return on assets.
H4: There is a significant effect of Liquidity on Return on Asset.
H5: There is a significant effect of Capital Adequacy on Net Profit Margin.
H6: There is a significant effect of Asset quality on Net Profit Margin.
H7: There is a significant effect of management on the Net Profit Margin set.
H8: There is a significant effect of Liquidity on Net Profit Margin.

Rationale of the study

This research evaluates and analyses the financial assistance of commercial banks in Nepal. The results have significant implications for various stakeholders in the banking sector. Policymakers and regulatory authorities can benefit from the insights provided by this study to develop effective policies and regulations that promote a stable and resilient banking sector. Investors can utilize the study's findings to make informed decisions about investing in the banking sector, considering commercial banks' profitability and risk profiles. Bank management can use the analysis to identify areas of improvement, address weaknesses, and capitalize on strengths, leading to better strategic planning and resource allocation. Assessing financial performance is crucial for risk management and stability, as it helps identify potential risks and vulnerabilities within the banking system, enabling regulatory authorities to implement appropriate measures. Lastly, understanding the financial performance of commercial banks contributes to overall economic growth and development. Policymakers can foster sustainable economic development by promoting lending to productive sectors and supporting entrepreneurship. In conclusion, this research provides valuable insights into the financial performance of commercial banks in Nepal, enabling informed decision-making and contributing to the stability and growth of the banking sector and the overall economy.

THEORETICAL FRAMEWORK

Theoretical review

Capital Adequacy Theory: This theory suggests that maintaining sufficient capital is crucial for commercial banks' financial stability and performance (Hossain & Leo, 2016). In the CAMEL model, capital adequacy is one of the components, indicating the ability of a bank to absorb potential losses and maintain stability. A higher capital adequacy ratio reflects a stronger financial position, reducing the risk of insolvency and enhancing overall performance.

Asset Quality Theory: This theory emphasizes the importance of maintaining a high-quality loan portfolio in achieving financial performance (Hossain & Leo, 2016). The asset quality component in the CAMEL model assesses the level of credit risk and non-performing assets. A lower non-performing loan ratio and higher provision coverage ratio indicate healthier asset quality, contributing to profitability and stability.

Management Quality Theory highlights the significance of effective governance and risk management practices in driving financial performance (Hossain & Leo, 2016). In the CAMEL model, management quality

evaluates the expertise of the board of directors, internal controls, and risk management frameworks. Strong management practices enable informed decision-making, risk mitigation, and strategic planning, leading to improved financial performance.

Liquidity Theory: This theory emphasizes the importance of maintaining adequate liquidity levels for financial stability and performance (Hossain & Leo, 2016). Liquidity assessment in the CAMEL model evaluates a bank's ability to meet short-term obligations and manage funding sources effectively. Sufficient liquidity ensures a bank can withstand unexpected withdrawals and maintain ongoing operations, contributing to overall financial stability and performance.

These theories are relevant to the financial performance of commercial banks as they highlight key factors that influence profitability, stability, and overall success. The CAMEL model incorporates these theories by assessing banks' capital adequacy, asset quality, management quality, and liquidity, providing a comprehensive framework for analyzing financial performance. By understanding and effectively managing these components, commercial banks can enhance their financial performance and contribute to the stability and growth of the banking sector.

Empirical Review

Kundu and Das (2019) conducted a study to evaluate the financial performance of Indian banks through CAMEL analysis. They employed five years of secondary data from the financial records of chosen banks for their research. The research revealed significant variations in the financial performance among banks, with some banks exhibiting strong performance in capital adequacy, asset quality, management efficiency, earnings, and liquidity, while others lagged.

In their study, Afzal et al. (2017) investigated the economic performance of Islamic banks in Pakistan using CAMEL analysis. The researchers employed a mixed-methods approach, combining quantitative analysis of financial data and qualitative interviews with bank executives. The results suggested that Islamic banks demonstrated strong performance in capital sufficiency, asset quality, and liquidity but faced challenges in management efficiency and earnings due to limited product offerings and a relatively small customer base.

A study by Ibrahim and Aga (2018) aimed to evaluate the financial performance of Ethiopian commercial banks through CAMEL analysis. The researchers collected financial data from annual reports of selected banks and applied CAMEL ratios to evaluate their performance. The study revealed that the banks exhibited strong capital sufficiency and the quality of assets. However, managerial effectiveness and earnings were identified as areas for improvement, highlighting the need for better cost management and increased profitability.

In their research, Sharma and Saha (2016) examined the financial performance of commercial banks in Nepal using CAMEL analysis. The researchers collected financial data from bank annual reports and regulatory publications and analyzed them using CAMEL ratios. The findings indicated that the banks had satisfactory performance concerning capital sufficiency. And the quality of assets. However, efficiency in management and profitability were identified as areas requiring attention, suggesting the need for improved operational efficiency and profitability.

A study by Hassan et al. (2020) aimed to assess the financial performance of both

traditional and Islamic banks in Malaysia. Using CAMEL analysis. Methodology: The researchers gathered financial information from the chosen banks' annual reports and computed CAMEL ratios to assess their performance. The study discovered that traditional banks exhibited superior performance in terms of managerial efficiency and earnings, while Islamic banks demonstrated superior performance in capital adequacy and asset quality. Both types of banks had comparable levels of liquidity.

In their research, Dávalos and Velasco (2019) analyzed the economic performance of commercial banks in Ecuador using CAMEL analysis. The researchers collected financial data from regulatory reports and applied CAMEL ratios to assess bank performance. The study revealed that the banks exhibited satisfactory performance regarding capital sufficiency and the quality of assets. However, efficiency in management and profits. These were identified as areas for improvement, highlighting the need for better cost management and increased profitability.

A study conducted by Ali and Ahmed (2018) aimed to evaluate the financial performance of commercial banks in Bangladesh through CAMEL analysis. The researchers collected financial data from bank annual reports and regulatory publications and analyzed them using CAMEL ratios. The study found that the banks had satisfactory performance regarding capital sufficiency and quality of assets. However, managerial effectiveness and earnings were identified as areas requiring attention, indicating the need for improved operational efficiency and profitability.

In their study, Al-Harbi et al. (2021) aimed to analyze the financial performance of Saudi Arabian banking sectors using CAMEL analysis. The researchers collected financial data from annual reports and applied CAMEL ratios to evaluate bank performance. The study found that banks exhibited satisfactory capital sufficiency and asset quality performance. However, managerial efficiency and earnings were identified as areas requiring improvement, suggesting the need for enhanced cost management and profitability.

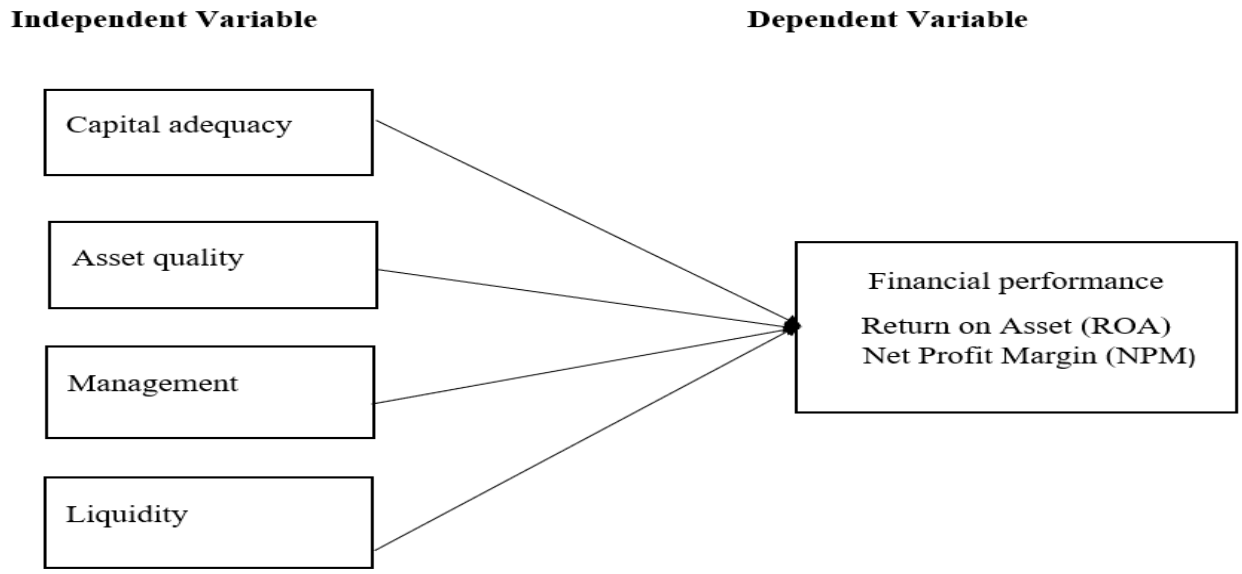
The study conducted by Al-Debei and Al-Lozi (2019) aimed to evaluate Jordanian banks' economic performance using CAMEL analysis. The researchers collected financial data from annual reports and utilized CAMEL ratios to assess bank performance. The findings indicated that banks performed well in capital sufficiency and asset quality. However, efficiency in managing operations and handling liquidity were identified as areas requiring attention, emphasizing improved operational efficiency and liquidity risk management.

A study by Al-Qudah and Abdallah (2020) aimed to evaluate the financial performance of banks in the United Arab Emirates (UAE) using CAMEL analysis. The researchers collected financial data from annual reports and employed CAMEL ratios to evaluate bank performance. The study revealed that banks demonstrated satisfactory performance in capital sufficiency and quality of assets. However, managerial efficiency and managing liquidity were identified as areas for improvement, suggesting the need for enhanced operational efficiency and liquidity risk management practices.

Research Framework

The CAMEL approach is a framework commonly used to assess the financial performance and stability of financial institutions, particularly banks. It involves evaluating various dimensions or factors that contribute to the overall financial health of an

institution. The acronym "CAML" represents the following concepts:



Source: *Adapted from Sanjeevnathan and Krishnan, 2021*

Figure 1: Research Frameworks

RESEARCH METHODOLOGY

This section deals with the research methodology of the study.

Research design

The study used a descriptive research design to provide a detailed subject description by collecting data and tabulating frequencies. This approach suits the study because it aims to describe the current situation without changing variables. The study also used a causal-comparative design to find relationships between independent and dependent variables after an event. This design helps determine if the independent variable influenced the outcome.

Population and Sample and Sampling Design

There are 21 commercial banks currently operating in Nepal. Thus, the population of the study is 21 commercial banks. Among these 21 commercial banks, 10 commercial banks have been chosen through a simple random sampling method. These ten commercial banks are listed below:

1. ADBL - Agricultural Development Bank Limited
2. NMB - NMB Bank Limited
3. HBL - Himalayan Bank Limited
4. SBL – Sunrise Bank Limited
5. PBL - Prabhu Bank Limited
6. SMBL – Sanima Bank Limited
7. NSBL - Nepal SBI Bank Limited
8. NBL – Nabil Bank Limited
9. MPBL- Machhapuchchhre Bank Limited
10. EBL- Everest Bank Limited

Nature and Sources of Data and Instrument for Data Collection

The study's data was obtained from secondary sources, which refers to data previously collected by someone else or for a different purpose. In this study, the researcher utilized secondary data to justify the study's objectives. Since the researcher focused on ten sampled commercial banks, data spanning eight years, from 2014/2015 to 2021/2022, was selected.

DATA ANALYSIS

This study employs descriptive and analytical methods to present and analyze data. Tables, mean, standard deviation, correlation, and regression are utilized for data presentation and analysis.

Regression Model

Regression Equation for ROA:

$ROA = \beta0 + \beta1(CA) + \beta2(AQ) + \beta3(MGMT) + \beta4(LQ) + \varepsilon$

In this equation, $\beta0$ is the intercept, while $\beta1$, $\beta2$, $\beta3$, and $\beta4$ are the regression coefficients for each independent variable, and ε represents the error term.

Regression Equation for NPM:

$NPM = \gamma0 + \gamma1(CA) + \gamma2(AQ) + \gamma3(MGMT) + \gamma4(LQ) + \varepsilon$

In this equation, $\gamma0$ represents the intercept, $\gamma1$, $\gamma2$, $\gamma3$, and $\gamma4$ represent the regression coefficients for each independent variable, and ε represents the error term.

Results and Discussion

Descriptive Statistics

Descriptive statistics are vital because presenting raw data can be challenging to interpret, especially with a large dataset. Descriptive statistics help us convey the data's meaning more effectively by summarizing and organizing it and providing a more straightforward interpretation of the data. Descriptive statistics show the standard deviation mean value of the selected life insurance companies. In addition, it also provides the maximum values of the variables.

Table 1: Descriptive Statistics

	ROA	NPM	MER	CRR	CAR	AQ
Mean	1.618500	21.82275	183.5819	18.25963	13.63913	1.449112
Median	1.630000	19.78000	165.1619	21.77500	13.20500	0.930000
Maximum	3.120000	53.79000	436.6014	36.21000	20.41000	8.830000
Minimum	0.700000	9.300000	51.23123	3.050000	10.61000	0.010000
Std. Dev.	0.505987	9.027313	85.65588	9.690178	2.151135	1.654258
Skewness	0.430036	1.292947	0.878181	-0.147066	1.368521	2.119590
Kurtosis	3.129444	4.791799	3.252096	1.583597	5.031752	8.318691
Jarque-Bera	2.521596	32.99132	10.49452	6.975705	38.73138	154.1971
Probability	0.283428	0.000000	0.005262	0.030566	0.000000	0.000000
Sum	129.4800	1745.820	14686.55	1460.770	1091.130	115.9290
Sum Sq. Dev.	20.22582	6437.898	579617.5	7418.064	365.5630	216.1889
Observations	80	80	80	80	80	80

Note: Results drawn from Eviews 12

The descriptive statistics of the variables are given in Table 1, and each variable shows the minimum, maximum, mean and standard deviation of ten commercial banks in Nepal. On average, those banks' profitability (ROA) and (NPM) are 1.62% and 21.82%. The ROA and NPM do not vary significantly across the bank because the standard deviation is about 0.51% and 9.03%, the minimum values are about 0.70% and 9.30%, and the maximum values are 3.12% and 53.79%. The average asset quality is 1.45%, minimum and maximum values are 0.01% and 8.83%, respectively, and standard deviation is 1.65%. The average Cash reserve ratio is 18.26%, minimum and maximum values are

3.05% and 36.21%, respectively, and the standard deviation is 9.69%. The capital adequacy ratio is 20.41%, the minimum is 10.61%, and the standard deviation average is 2.15% and 13.64%. The management efficiency ratio maximum values are 436.60%, a minimum value of 51.23%, an average of 183.58%, and a standard deviation of 85.66%.

Skewness quantifies the degree of symmetry, or more precisely, the absence of symmetry. A distribution or dataset is considered symmetric if it exhibits a mirrored pattern on both sides of its centre point.

When sk(p) = 0 indicates that the distribution is symmetrical or not skewed.

If sk(p) > 0, the distribution is positively skewed or right-skewed.

If sk(p) < 0, the distribution is negatively skewed or left-skewed.

Kurtosis measures whether data has heavier or lighter tails than a normal distribution. When kurtosis is greater than 3, it signifies heavier tails (more data in the tails). Conversely, when kurtosis is less than 3, it indicates lighter tails (less data in the tails) than a normal distribution.

In this context, the dataset has lighter tails than a normal distribution when the kurtosis values for bank size and cash reserve ratio are less than 3. Conversely, when the kurtosis values for asset quality, investment ratio, capital ratio, return on equity and return on assets are greater than 3, the dataset has heavier tails than a normal distribution, indicating more data in the tails.

The Jarque-Bera statistic quantifies how the skewness and kurtosis of a dataset compare to those of a normal distribution. It always yields a positive value, and a significant deviation from zero suggests that the sample data diverges from a normal distribution.

Correlations

Correlation analysis is a valuable tool for assessing the extent of the relationship between two variables. It helps us determine whether this relationship is positive, meaning that as one variable increases, so does the other, or negative, indicating that as one variable increases, the other decreases. The correlation coefficient, which ranges from +1 to -1, provides a numerical measure of this relationship. A coefficient of +1 signifies a perfect positive correlation, while a coefficient of -1 indicates a perfect negative correlation.

Table 2: *Correlation*

Correlation Probability	ROA	NPM	MER	CRR	CAR	AQ
ROA	1.000000 -----					
NPM	0.559917 0.0000	1.000000 -----				
MER	0.503051 0.0000	0.333640 0.0025	1.000000 -----			
CRR	0.188695 0.0937	0.008778 0.9384	-0.166444 0.1400	1.000000 -----		
CAR	0.358712 0.0011	-0.255984 0.0219	-0.071489 0.5286	0.246473 0.0275	1.000000 -----	
AQ	0.179114 0.1119	0.405924 0.0002	-0.434741 0.0001	0.050675 0.6553	0.113115 0.3178	1.000000 -----

Note: Results drawn from EViews 12

The value of correlation r = 0.179, which suggests a weak positive linear connection between asset quality and return on assets. Additionally, there is a low degree of moderate positive linear relationship between asset quality and net profit margin, i.e., 0.405. With a correlation coefficient of 0.358, a moderate positive linear relationship exists between the capital adequacy ratio and return on assets. Conversely, a correlation coefficient -0.256 suggests a negative linear relationship between the capital adequacy ratio and net profit margin.

The value of the correlation coefficient r= 0.189 means a lower positive linear relationship exists between the cash reserve ratio and return on assets. Similarly, the value of correlation coefficient r= 0.008 means a significantly lower positive linear relationship between cash reserve ratio and net profit margin.

The value of the correlation coefficient r= 0.503 means a significant positive linear relationship exists between the management efficiency ratio and return on assets. Similarly, the value of the correlation coefficient r= 0.33 indicates a moderate positive linear relationship between earnings per share and net profit margin.

Regression analysis

Regression analysis with Return on Assets

Regression analysis has been conducted to determine the profitability of the Commercial Bank of Nepal. An Asset quality, Capital Adequacy Ratio, Cash Reserve Ratio and management efficiency Ratio is used as independent variable, and Return on Assets as the dependent variable. The regression result is presented as follows;

ROA= $\beta 0+\beta 1CRR+\beta 2ER+\beta 3CAR+\beta 4AQ$ …… (1)

Table 3: Panel Least Squares for ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.607726	0.256832	-2.366245	0.0206
MER	0.004509	0.000474	9.510344	0.0000
CRR	0.011301	0.003894	2.902001	0.0049
CAR	0.072286	0.017409	4.152222	0.0001
AQ	0.142296	0.024357	5.842070	0.0000

R-squared	0.618377	Mean dependent var	1.618500
Adjusted R-squared	0.598024	S.D. dependent var	0.505987
S.E. of regression	0.320804	Akaike info criterion	0.624489
Sum squared resid	7.718641	Schwarz criterion	0.773365
Log likelihood	-19.97955	Hannan-Quinn criter.	0.684178
F-statistic	30.38224	Durbin-Watson stat	1.092533
Prob(F-statistic)	0.000000		

Note: Results drawn from Eviews 12

The findings from the pooled regression analysis suggest the presence of a significant association between certain independent factors and the dependent variables. The ordinary least square regression has been performed; the result is presented in Table 10. Further, the Breusch-Pagan test has been applied to confirm the pooled ordinary square method.

Breusch-Pagan test

Table 4: Breusch-Pagan

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.012472 (0.9111)	79.21667 (0.0000)	79.22914 (0.0000)

Note: Results drawn from Eviews 12

If the P value > 5%, accept the null hypothesis and run polls. If the P value is less than 0.05, reject the null hypothesis and use a fixed or random effect model. So, P>0.05 then go for pols.

The established multiple linear regression equation becomes:

ROA=-0.67726+0.142296AQ+0.072286CAR+0.011301CR+0.004509MER

Table 10 shows the probability of an independent variable asset's quality is 0.0000, less than 0.05. So, AQ is a significant independent variable for this regression model. The probability of an independent variable capital adequacy ratio is 0.0001, less than 0.05. So, CAR is a significant independent variable for this regression model. The probability of an independent variable cash reserve ratio is 0.0049, less than 0.05. So, CRR is a significant independent variable for this regression model. The probability of an independent variable Management efficiency ratio is 0.0206, less than 0.05. So, MER is a significant independent variable for this regression model.

In Table 10, the AQ, CAR, CRR, and MER coefficients are 0.142296, 0.072286, 0.011301, and 0.004509, respectively. If AQ increases by 1 unit, ROA increases by 0.142296 units, keeping other factors constant. The quality of assets favourably influences the Return on assets (ROA). If the CAR increases by 1 unit, the ROA increases by 0.072286 units, assuming all other parameters stay constant. Capital Adequacy Ratio positively impacts Return on assets (ROA). If CRR increases by 1 unit, ROA increases by 0.011301 units, keeping other factors constant. The Cash Reserve ratio has a favourable influence on the ROA. If MER increases by 1 unit, then ROA increases by 0.004509 units. Management efficiency ratio positively impacts Return on assets (ROA).

The Independent variable will forecast a 61.84% actual value of a dependent variable. The R-squared value is 0.618377, which explains the independent variables predicting 61.84% of the dependent variable. The adjusted R squared value is 0.598024, which implies that the independent variables cumulatively determine 59.80% of the dependent variables.

F statistic illustrates the influence of all independent factors on the dependent variable. If F-Stats likelihood is more significant than 5% or 0.05, error is likely and combined impact is negligible. However, F-Stats probability values below 5% or 0.05 indicate a strong combination impact. The model fits because prob(F-statistic) is 0.000000, less than 5%. Regression analysis with Net profit margin

The regression analysis has been conducted to determine the profitability of the Commercial Bank of Nepal. An Asset quality, Capital Adequacy Ratio, Cash Reserve Ratio and management efficiency Ratio is used as independent variable, and

Net Profit Margin as the dependent variable. The regression result is presented as follows;

$$NPM = \beta 0+\beta 1CRR+\beta 2ER+\beta 3CAR+\beta 4AQ \quad \ldots\ldots (2)$$

Table 5: Panel Least Squares for NPM

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.77067	4.728513	4.181161	0.0001
MER	0.068369	0.008729	7.832637	0.0000
CRR	0.150831	0.071694	2.103802	0.0387
CAR	-1.387513	0.320516	-4.328991	0.0000
AQ	3.913473	0.448439	8.726875	0.0000

R-squared	0.593604	Mean dependent var	21.82275
Adjusted R-squared	0.571930	S.D. dependent var	9.027313
S.E. of regression	5.906306	Akaike info criterion	6.450380
Sum squared resid	2616.334	Schwarz criterion	6.599256
Log likelihood	-253.0152	Hannan-Quinn criter.	6.510069
F-statistic	27.38731	Durbin-Watson stat	1.174669
Prob(F-statistic)	0.000000		

Note: Results drawn from Eviews 12

The pooled regression analysis links various independent factors and the dependent variables. The ordinary least square regression has been performed; the result is presented in Table 5. Further, the Breusch-Pagan test has been applied to confirm the pooled ordinary square method.

Table 6: Beusch Pagan test

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	1.463210 (0.2264)	31.94581 (0.0000)	33.40902 (0.0000)

Note: Results drawn from Eviews 12

Accept the null hypothesis and use pols if the P value exceeds 5%. Reject the null hypothesis and use a fixed or random effect model if the P value is less than 0.05. So, P>0.05then go for pols.

The established multiple linear regression equation becomes:

NPM=19.77067+3.913473AQ-1.387513CAR+0.150831CRR+0.068369MER

In Table 6, the probability of an independent variable asset quality is 0.0000, less than 0.05. So, AQ is a significant independent variable for this regression model. The probability of an independent variable capital adequacy ratio is 0.00000, more than 0.05. So, CAR is a significant independent variable for this regression model. The probability of an independent variable cash reserve ratio is 0.0387, less than 0.05. So, CRR is a significant independent variable for this regression model. The probability of an independent variable Management efficiency ratio is 0.0000, less than 0.05. So, MER is a significant independent variable for this regression model.

Table 6 shows the AQ, CAR, CRR and MER coefficients of 3.913473, -1.387513, 0.150831, and 0.068369, respectively. If AQ increases by 1 unit, then NPM increases by 3.913473 units, keeping other factors constant. Assets Quality has a positive impact on net profit margin (NPM). Keeping everything fixed, NPM decreases by 1.387513 units when CAR rises by 1 unit. CA Ratio lowers net profit margin. If CRR increases by 1 unit, then NPM increases by 0.150831 units, keeping other factors constant. The Cash Reserve ratio positively impacts the net profit margin (NPM). If MER increases by 1 unit, then NPM increases by 0.068369 units. Management efficiency ratio positively impacts net profit margin (NPM).

The Independent variable will forecast a 59.36% actual value of a dependent variable. The value of R-squared is 0.593604, which explains the independent variables predicting 59.36% of the dependent variable. The value of adjusted R squared is 0.571930, which means the independent variables cumulatively determine 57.19% of the dependent variables.

F statistic reveals the dependent variable influence of all independent factors. F-Stats with a probability greater than 5% or 0.05 indicate considerable inaccuracy and an insignificant combined impact. While F-Stats probability values below 5% or 0.05 indicate significant combination impact. Our model fits since prob(F-statistic) is 0.000000, less than 5%.

DISCUSSION

The banking sector is of utmost importance in any economy, and evaluating its financial performance is crucial for stakeholders such as investors, regulators, and policymakers. The CAMEL model provides a comprehensive framework for analyzing a bank's performance and assessing its financial health and stability.

The first component of the CAMEL model is capital adequacy, which assesses a bank's financial soundness and loss-absorbing capacity. Capital adequacy ratios like CET1, Tier 1 capital, and Total Capital are used to assess a bank's capital status. These ratios provide insights into a bank's financial strength and capacity to withstand adverse economic conditions (Hossain & Leo, 2016).

Asset quality assessment is the second component of the CAMEL model and evaluates the loan portfolio quality of a bank and the level of credit risk. Key indicators such as the NPL ratio, provision coverage ratio, and loan loss reserves measure asset quality. A lower NPL ratio and higher provision coverage ratio indicate a healthier loan portfolio, reflecting sound credit risk management practices. Effective asset quality management contributes to a bank's overall stability and performance (Hossain & Leo, 2016).

The management quality component of the CAMEL model assesses the effectiveness of a bank's governance and risk management practices. Factors such as the expertise of the board of directors, the effectiveness of internal controls, and risk mitigation frameworks are considered. Effective management practices are crucial for decision-making, risk mitigation, and strategic planning, ultimately impacting banks' total financial performance (Hossain & Leo, 2016).

Liquidity assessment is the final component of the CAMEL model, which evaluates a bank's capacity to meet its short-term obligations and manage various funding sources effectively. Key liquidity ratios, including the loan-to-deposit ratio, cash ratio, and liquid assets-to-total assets ratio, provide insights into a bank's liquidity position.

Adequate liquidity levels ensure a bank can withstand unexpected deposit withdrawals and maintain ongoing operations, contributing to its financial stability (Hossain & Leo, 2016).

In conclusion, the CAMEL model is a valuable method for evaluating banks' financial performance and stability. By evaluating capital adequacy, asset quality, management quality, and liquidity, stakeholders gain insights into a bank's financial position and ability to withstand economic shocks. However, it is essential to note that the CAMEL model should be used alongside other financial analysis tools and qualitative assessments to provide a holistic view of a bank's performance. Regular monitoring and analysis of financial performance using models like CAMEL enable stakeholders to make informed decisions, promote transparency, and contribute to the stability of the banking sector (Hossain & Leo, 2016).

CONCLUSION

The values of R2 indicate that a significant proportion of the variation in both Return on assets and net profit margin can be explained by the examined factors, including capital adequacy ratio, cash reserve ratio, management efficiency ratio, and asset quality. Further, the result supports the importance of these factors in influencing profitability.

In conclusion, the analysis of financial performance indicators in commercial banks highlights the significant influence of asset quality on ROA and NPM. The findings suggest that maintaining a high-quality loan portfolio and effectively managing credit risk are crucial for improving financial performance in commercial banks. Banks can enhance their profitability and overall financial performance by prioritizing asset quality and implementing sound credit risk management practices. This conclusion underscores the importance of prudent lending practices, effective risk management, and continuous monitoring of asset quality to achieve sustainable growth and profitability in the banking sector.

IMPLICATIONS

The implications of the analysis of financial performance indicators in commercial banks have several policy support, further research, and organizational implications:

Policy Support: The findings emphasize policymakers and regulatory bodies need to prioritize and enforce measures that promote strong asset quality and effective credit risk management in commercial banks. This can include setting minimum standards for capital adequacy ratio, cash reserve ratio, and management efficiency ratio and implementing regulations and guidelines that encourage banks to maintain high-quality loan portfolios. Policymakers should also support initiatives enhancing banks' risk management capabilities and promoting continuous monitoring of asset quality.

Further Research: The results of this analysis provide a foundation for further research in banking and finance. Future studies could explore the specific mechanisms through which asset quality influences ROA and NPM in commercial banks. Additionally, researchers can investigate the impact of other factors not included in this analysis, such as macroeconomic conditions or regulatory changes, on financial performance indicators. Further research can also identify best practices in credit risk management and asset

quality monitoring that banks can adopt to improve profitability.

Organizational Implications: The analysis underscores banks' importance in prioritizing asset quality and implementing sound credit risk management practices. Banks should maintain a high-quality loan portfolio by conducting thorough credit assessments, monitoring borrower performance, and promptly addressing any signs of deterioration in asset quality. They should also invest in robust risk management systems and processes that enable effective identification, measurement, and mitigation of credit risks. Furthermore, banks should continuously monitor and evaluate their financial performance indicators to identify areas for improvement and take proactive measures to enhance profitability.

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