Analyzing the Trade-offs Between Credit Risk Management and Profit Maximization in Nepalese Development Banks

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Abstract

Effective credit risk management helps mitigate potential drawbacks and enhances the financial performance of development banks. This, in turn, leads to rewarding outcomes for both employees and shareholders, acknowledging their contributions and investments. Credit risk management serves as a crucial predictor of a bank's profitability. Therefore, it significantly influences the financial performance of the bank. The main objective of the study is analyzed the relationship between credit risk management and profitability of Nepalese development banks. Data from a sample of 8 national level development banks operating in the Nepali economy between 2013 to 2023 were collected and analyzed using various statistical methods such as mean, standard deviation, correlation, and regression analysis. Correlation and Regression analysis model of panel data analysis was the primary analytical tool used. In the model specification, Return on assets (ROA) served as the indicator of bank profitability, while indicators of credit risk management included credit to deposit ratio (CDR), Non-performing loan ratio (NPLR), Capital adequacy ratio (CAR), liquidity ratio (LR) and Interest rate spread (IRS). Utilizing data from a sample of development banks, the analysis reveals that the Non-Performing Loan Ratio (NPLR) and Liquidity Ratio (LR) exhibit significant effects on ROA, with associated p-values of 0.00 and 0.04, respectively. Conversely, the Credit to Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), and Interest Rate Spread (IRS) do not significantly influence ROA, as indicated by their p-values exceeding the threshold of 0.05. The overall regression model is statistically significant (F-value of 6.63, p-value of .000), indicating its ability to explain a substantial portion of the

variance in ROA. Among the predictors, only the Interest Rate Spread (IRS) demonstrates a positive impact on ROA, while Credit Default Rate (CDR), Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), and Loan-to-Deposit Ratio (LR) have negative effects on ROA. The findings suggest that maintaining lower levels of credit defaults and non-performing loans, along with higher liquidity ratios, may positively influence ROA. However, further research is warranted to delve into the underlying mechanisms and guide strategic decision-making within the banking industry.
Key words: Return on assets, Credit to deposit ratio, capital adequacy ratio, liquidity ratio and non-performing loan ratio.

Introduction

Banks operate in a complex environment facing various risks. These risks can be broadly categorized into three main areas: financial, operational, and environmental (Bratanovic and Greuning, 2009). As a critical player in any economy, the banking industry plays a significant role in granting credit, which fuels investment and economic growth (Kargi, 2011). While credit plays a vital role in a bank's income generation, it also exposes them to a specific risk: credit risk. Credit risk arises from the possibility of borrowers defaulting on their loans, leading to banks losing a portion or even the entirety of the outstanding loan amount. This risk is formally defined by the Basel Committee on Banking Supervision as the potential for financial loss due to a borrower's inability to repay a loan. In simpler terms, credit risk stems from the inherent uncertainty associated with lending – there's always a chance that borrowers may not fulfill their repayment obligations(Basel Committee on Banking Supervision , 2001).

Credit Risk Management (CRM) within financial institutions begins with establishing robust lending principles and implementing an efficient framework for risk management. This involves developing policies, industry-specific standards, and guidelines, along with setting risk concentration limits

under the oversight of a risk management committee. These established protocols dictate how credit risk is assessed, monitored, reported, and mitigated. Given the rapidly changing market conditions, it is imperative to regularly review the adequacy and effectiveness of internal controls to manage credit risk proactively (Santimero, 1997). Furthermore, in today's context, credit risk management not only impacts individual institutions but also has implications for the national economy. For instance, providing credit to retailers elevates their status and facilitates transactions in various sectors, thereby contributing to economic growth. Moreover, by extending credit to businesses, financial institutions enable economic activities that generate tax revenue for the government, thereby bolstering the national economy. Additionally, effective credit risk management serves to safeguard the interests of depositors. While credit is often perceived as a means to maximize wealth, it is crucial to acknowledge that various factors influence profitability and wealth maximization. Among these factors, credit risk management stands out as particularly pivotal. Managing credit risk effectively is challenging as it forms the backbone of commercial banking operations. Therefore, prudent management of credit is imperative, considering the inherent risk of default associated with extending credit to borrowers. Failure to accurately gauge the default propensity of borrowers can lead to fluctuations in earnings, exposing banks to additional risks and potentially impacting their profitability (Chatterjee, 2005).

Review of Literature

In this section of the study, we revied the findings and conclusion of the previous study regarding credit risk management and its relationship with profitability. Jain and Sheikh (2012) delved into two main aspects of the banking industry: The Relationship Between the Banking Industry and Private Banks and Performance Analysis of Loans, Net Profit, and NPAs: The

researchers focused on these specific metrics to assess the health and performance of private banks. Notably, the study covered a period from 2007 to 2011.The study identified potential shortcomings in the lending policies of the analyzed private banks. The researchers suggest that these banks might have lacked proper financing practices and may not have provided customers with sufficient information about their lending policies. This observation highlights the importance of sound lending practices and clear communication with borrowers for private banks to maintain financial stability and responsible lending behavior.

Kenneth (2013) conducted a research study in Nigeria to investigate the relationship between credit risk management, capital adequacy, and the financial performance of commercial banks. The study covered a six-year period from 2004 to 2009. The research revealed that both sound credit risk management practices (lower NPLs and LLPs) and strong capital adequacy (higher CAR) had a positive impact on the financial performance (ROA) of the commercial banks. This suggests that banks with effective risk management and sufficient capital reserves tend to be more profitable. Interestingly, the study also found a negative association between loans and advances (LA) and profitability. This could be interpreted in a few ways: Banks that issue a high volume of loans might be extending credit to riskier borrowers, leading to potential defaults and decreased profitability. Alternatively, it's possible that banks with lower profitability may resort to issuing more loans in an attempt to generate income, but this strategy might not be effective.

Annor and Obeng (2017) investigated the link between credit risk management practices and the profitability of commercial banks in Ghana. Their research focused on six banks listed on the Ghana Stock Exchange. The research identified a significant relationship between credit risk management and bank profitability. A higher Capital Adequacy Ratio (indicating a stronger capital buffer) was positively associated with a bank's

profitability. Conversely, higher levels of Non-Performing Loans, Loan Loss Provisions Ratio, and Loan-to-Asset Ratio were all found to have a statistically significant negative impact on profitability. This suggests that these factors increase a bank's credit risk exposure and reduce its earning potential. Based on these findings, the study emphasizes the importance of banks actively monitoring and managing credit risk indicators. By effectively controlling credit risk, banks can minimize their exposure to potential losses and ultimately improve their profitability.

Ali and Dhiman (2019) set out to investigate the relationship between credit risk management practices and the financial performance of public sector commercial banks in India. They focused on the top ten banks based on their total assets. The research revealed a significant influence of credit risk management on the financial performance of the selected public sector banks. A higher Capital Adequacy Ratio (CAR), stronger Management practices (M), and better Earnings ability (E) were all found to be positively associated with a bank's profitability (ROA). This suggests that banks with robust capital buffers, effective management, and higher earnings tend to perform better financially. Conversely, Asset Quality (AQ) and Liquidity (L) were found to have a negative impact on profitability. This implies that banks holding riskier assets and facing liquidity challenges might experience lower profitability. The study by Ali and Dhiman highlights the importance of a multi-faceted approach to credit risk management for public sector banks in India. By addressing factors like NPLs, capital adequacy, and asset quality, banks can enhance their financial performance and contribute to a more stable banking sector.

Risal and Poudel (2019) conducted research to understand how credit risk impacts the performance of different classes of financial institutions in Nepal. Their study focused on two categories: A-Class Commercial Banks: These banks are typically larger and considered to be financially stronger. B-

Class Commercial Banks: These banks are generally smaller and may have a different risk profile. This study highlights the complex relationship between credit risk and performance for different bank classes in Nepal. While B-class banks might offer higher returns, they also face greater credit risk vulnerability. A-class banks, on the other hand, exhibit lower risk but potentially lower returns and a narrower interest rate spread.

Saleh and Afifa (2020) directed their research efforts towards understanding how credit risk, liquidity risk, and bank capital affect a bank's profitability. Their study focused on an emerging market and examined data over a nine-year period, from 2010 to 2018. The research revealed that all three factors – credit risk, liquidity risk, and bank capital – have a significant impact on bank profitability. This highlights the importance of a balanced approach to risk management and maintaining adequate capital reserves. The study also emphasizes the significance of understanding Basel requirements, a set of international banking regulations. By adhering to these guidelines, both local and foreign banks can enhance their efficiency, improve profitability, and better manage risks, ultimately contributing to a more stable banking system.

My and Quoc (2022) embarked on a comprehensive study to explore the relationship between credit risk and financial stability in Vietnamese commercial banks. Their research spanned a period of 15 years, from 2005 to 2019. The study revealed a significant positive relationship between credit risk, profitability, and financial stability. Higher credit risk has a direct negative impact on a bank's financial stability. Profitability plays a mediating role. Banks with good profitability are better equipped to manage credit risk, ultimately leading to greater financial stability. This research gives valuable understandings for Vietnamese banks and policymakers. By effectively managing credit risk and maintaining financial health, banks can contribute to a more stable and resilient financial system in Vietnam.

Maharjan (2023). Conduct the research to investigated the relationship between credit risk management practices and the profitability of finance companies in Nepal. Researchers used various statistical tools to analyze secondary data collected from three finance companies: Pokhara Finance Limited (PFL), Manjushree Finance Limited (MFIL), and Goodwill Finance Company Limited (GFCL). The study revealed a statistically significant positive correlation between effective credit risk management and profitability. This means companies with stronger credit risk management practices tend to be more profitable. Regression analysis further confirmed this link, showing that credit risk management significantly impacts profitability. However, the impact of individual credit risk management factors varied: Interest coverage ratio and loan loss provision ratio were found to have a statistically significant positive impact on profitability. This suggests that companies with better ability to cover interest expenses and adequate provisions for potential loan losses tend to be more profitable. Others factors like credit-to-deposit ratio, non-performing loan ratio, capital adequacy ratio, loans-to-risky-weighted assets ratio, and loans-to-total assets ratio did not show a statistically significant impact on profitability in this study.

Bagale (2023). This study emphasizes the critical role of credit risk management in ensuring the profitability of commercial banks in Nepal. The research examined data from 15 Nepali commercial banks over a ten-year period (2011-2020). The research confirms a significant impact of credit risk management on the profitability of Nepali commercial banks. This highlights the importance of effective risk management practices for banks to achieve financial success. The study found that some credit risk management factors have unexpected relationships with profitability. Cash Reserve Ratio, Loan Loss Provision Ratio, and Non-Performing Loan Ratio all showed an insignificant negative impact on ROE. This might require further investigation in the context of the Nepali banking sector. Conversely, Bank

Size and Liquidity Ratio (likely measured by the Cash Reserve Ratio) exhibited a positive impact on ROE. This suggests that larger banks and those maintaining higher cash reserves might experience higher profitability in Nepal. Capital Adequacy Ratio, which is generally expected to have a positive impact on profitability, surprisingly displayed a significant negative association with ROE in this study. This finding warrants further exploration.

In reviewing the existing literature on credit risk management and its impact on financial performance, particularly in the context of Nepalese financial institutions, several has been drawn. Most of the studies, such as those by Maharjan (2023) and Bagale (2023), have primarily focused on commercial banks and finance companies in Nepal. There is a limited body of research specifically examining development banks, which have different operational dynamics and risk profiles compared to commercial banks. Furthermore, prior studies have often concentrated on a limited set of variables when analyzing the relationship between credit risk management and profitability. For instance, studies by Ali and Dhiman (2019) and Annor and Obeng (2017) have looked at factors like non-performing loan ratios, capital adequacy ratios, and loan loss provisions, but have not included a more comprehensive set of variables such as the liquidity ratio and interest rate spread. Similarly, in the exploration of interactions between credit risk management variables. While some studies have examined the individual impact of these variables on profitability, there is a lack of research exploring their combined effects. For example, the interplay between the capital adequacy ratio and liquidity ratio on return on assets remains underexplored. This study will investigate these interactions, offering new insights into how these factors collectively influence bank profitability. Additionally, the existing literature often emphasizes the importance of credit risk management in maintaining financial stability but pays less attention to the trade-offs

between credit risk management and profit maximization. This study will specifically focus on this trade-off within the Nepalese development banking sector, where balancing risk and profitability is crucial for sustainable growth.

The main objective of this study is to explore the relationship between credit risk management and the profitability of Nepalese development banks. The research focuses on return on assets (ROA) as the dependent variable, while examining the impact of key independent variables such as the credit to deposit ratio (CDR), non-performing loan ratio (NPLR), capital adequacy ratio (CAR), liquidity ratio (LR), and interest rate spread (IRS).The article starts with a title that clearly captures the essence of the research, followed by an abstract that provides a concise summary of the study's objectives, methodology, key findings, and conclusions. The introduction sets the stage by offering background information on the topic, outlining the research objectives, and explaining why the study is important. Following the introduction, the literature review delves into existing research related to the topic, identifying gaps and highlighting the necessity for this study. This is followed by the methodology section, which details the research design, sample population, data collection methods, and techniques used for data analysis. The results and findings section presents the data without interpretation, often using tables, charts, and graphs to clearly illustrate the outcomes. Finally, the article concludes with a section that summarizes the study's findings, discusses their implications, and provides references to the sources used throughout the research.

Methodology

The study uses a descriptive and causal-comparative research design to explore the relationship between credit risk management and profitability in Nepalese development banks. Out of the 17 development banks operating in Nepal as of April 2024, the study focuses on 8 national-level development

banks, using secondary data from these banks covering the fiscal years 2013/14 to 2022/23. The research examines key independent variables—credit to deposit ratio (CDR), non-performing loan ratio (NPL), capital adequacy ratio (CAR), liquidity ratio (LR), and interest rate spread (IRS)—and their relationship with the dependent variable, return on assets (ROA). Financial tools were used to measure these variables, while statistical tools were applied to analyze their relationships. Specifically, the study employed correlation coefficients to check for potential multicollinearity among the variables. Then, a step-wise multiple regression model was used to determine whether these financial ratios effectively predict ROA in Nepalese development banks. The analysis included ANOVA tables, coefficients, standard errors, t-statistics, and p-values to thoroughly evaluate the relationships between variables and test the research hypotheses, providing valuable insights into the factors influencing profitability.

Results and Findings

This section focuses on examining data collected from diverse sources to fulfill the objectives outlined in the introduction chapter. It aims to analyze secondary data obtained from various sources, often referred to as the nervous system of the study, to draw conclusions after a comprehensive examination. Utilizing various arithmetic and statistical tools, the data is analyzed to enhance the comprehension of the study.

Descriptive Statistics

Descriptive statistics offer brief summary values that compress a dataset, whether it represents an entire population or just a sample. They are categorized into measures of central tendency, such as the mean and median, and measures of variability, including standard deviation, range, as well as minimum and maximum values.

Table 1: *Descriptive Statistics*

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	80.00	(5.58)	2.92	1.36	1.06
CDR	80.00	70.80	103.97	84.14	4.69
NPLR	80.00	0.00	16.18	1.82	2.43
CAR	80.00	11.19	30.60	14.74	3.00
LR	80.00	3.10	32.83	10.39	9.22
IRS	80.00	4.08	9.76	5.38	1.19

Sources: Annual reports of development banks.

Table 1 presents descriptive statistics for several variables, based on a dataset of 80 observations. The first variable, Return on Assets (ROA), ranges from a minimum of 5.58 to a maximum of 2.92, with a mean of 1.36 and a standard deviation of 1.06. This indicates that the ROA values are relatively dispersed around the mean. The second variable, Credit Default Rate (CDR), exhibits a narrower range from a minimum of 70.80 to a maximum of 103.97, with a mean of 84.14 and a standard deviation of 4.69. The lower standard deviation suggests less variability in CDR compared to ROA. Next, the Non-Performing Loan Ratio (NPLR) ranges from 0.00 to 16.18, with a mean of 1.82 and a standard deviation of 2.43. The wider spread in values and a higher standard deviation indicate greater variability in NPLR compared to CDR. The Capital Adequacy Ratio (CAR) varies from 11.19 to 30.60, with a mean of 14.74 and a standard deviation of 3.00. This suggests moderate variability in CAR across the dataset. The Loan-to-Deposit Ratio (LR) ranges from 3.10 to 32.83, with a mean of 10.39 and a standard deviation of 9.22. The large standard deviation relative to the mean indicates considerable variability in LR. Finally, the Interest Rate Spread (IRS) ranges from 4.08 to 9.76, with a mean of 5.38 and a standard deviation of 1.19. The narrow spread of values and low standard deviation suggest relatively low variability in IRS across the dataset.

Correlation Analysis

In this section, the examination discovers into the Pearson correlation coefficients among various pairs of research variables.

Table 2: *Correlation Analysis*

Variables		ROA	CDR	NPLR	CAR	LR	IRS
ROA	Pearson Correlation	1.00	0.03	-.481**	(0.05)	(0.08)	.223*
	Sig. (2-tailed)		0.76	0.00	0.69	0.47	0.05
	N	80.00	80.00	80.00	80.00	80.00	80.00
CDR	Pearson Correlation		1.00	-.400**	0.17	(0.13)	0.08
	Sig. (2-tailed)			0.00	0.12	0.23	0.50
	N		80.00	80.00	80.00	80.00	80.00
NPLR	Pearson Correlation			1.00	(0.05)	(0.11)	-.298**
	Sig. (2-tailed)				0.67	0.31	0.01
	N			80.00	80.00	80.00	80.00
CAR	Pearson Correlation				1.00	-.242*	0.16
	Sig. (2-tailed)					0.03	0.17
	N				80.00	80.00	80.00
LR	Pearson Correlation					1.00	0.09
	Sig. (2-tailed)						0.45
	N					80.00	80.00
IRS	Pearson Correlation						1.00
	Sig. (2-tailed)						
	N						80.00

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

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

Sources: SPSS 25 outputs

The table 2 presents the Pearson correlation coefficients between various pairs of research variables: Credit Default Rate (CDR), Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), Loan-to-Deposit Ratio (LR), and Interest Rate Spread (IRS), with Return on Assets (ROA).

The correlation coefficient between CDR and ROA is 0.03, indicating a very weak positive correlation, although statistically insignificant with a p-

value of 0.76. For NPLR and ROA, there is a notable negative correlation of -0.481, signifying a moderate to strong inverse relationship between these variables. This correlation is statistically significant with a p-value of 0.00, indicating that it is unlikely to have occurred by chance. The correlation between CAR and ROA is negligible at 0.05, suggesting a very weak positive relationship, which is not statistically significant (p-value = 0.69). Similarly, the correlation between LR and ROA is also minimal at 0.08, indicating a weak positive relationship, statistically insignificant with a p-value of 0.47. Lastly, there is a noteworthy positive correlation between IRS and ROA, with a coefficient of 0.223. This suggests a moderate positive relationship between these variables. The correlation is statistically significant with a p-value of 0.05, indicating that it is unlikely to have occurred by chance.

Regression Analysis

Table 3 employs the multiple regression analysis (Enter method) to assess the relationship between the independent variables and the dependent variable, determining their statistical significance.

Table 3: *Model Summary*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.556a	0.31	0.26	0.91
a. Predictors: (Constant), IRS, CDR, LR, CAR, NPLR				

Sources:SPPS 25 output

Table 3 provides a summary of the regression model. The model's performance is evaluated through several metrics:

R: The correlation coefficient (R) measures the strength and direction of the linear relationship between the dependent variable and the set of independent variables. In this case, the value of R is 0.556, indicating a moderate positive correlation.

R Square: Also known as the coefficient of determination, R Square represents the proportion of the variance in the dependent variable that is explained by the independent variables. In this model, R Square is 0.31, meaning that approximately 31% of the variance in the dependent variable is accounted for by the independent variables.

Adjusted R Square: Adjusted R Square adjusts the R Square value to account for the number of predictors in the model and the sample size. It is a more accurate measure, particularly in multiple regression analysis. In this instance, the Adjusted R Square is 0.26.

Std. Error of the Estimate: This represents the standard deviation of the residuals, or the differences between the observed and predicted values of the dependent variable. A lower value indicates that the model's predictions are closer to the actual values. Here, the Std. Error of the Estimate is 0.91. The analysis was conducted using SPSS version 25.

Table 4: *ANOVA*

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	27.26	5.00	5.45	6.63	.000b
	Residual	60.85	74.00	0.82		
	Total	88.11	79.00			
a. Dependent Variable: ROA						
b. Predictors: (Constant), IRS, CDR, LR, CAR, NPLR						

Sources:SPPS 25 output

Table 4 displays the results of the analysis of variance (ANOVA) for the regression model. ANOVA assesses the significance of the overall regression model and its individual predictors: F value is the ratio of the variance explained by the model to the unexplained variance. It tests the overall significance of the regression model. A larger F-value indicates a more significant model. Here, the F-value is 6.63.Where the p-value associated with the F-statistic. A p-value less than the chosen **significance** level (usually 0.05) indicates that the regression model is statistically significant. In this case, the

p-value is .000, suggesting that the regression model is statistically significant. Additionally, the dependent variable analyzed in this ANOVA is Return on Assets (ROA), and the predictors used are IRS, CDR, LR, CAR, and NPLR.

Table 5: *Coefficients*

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.05	2.19		2.76	0.01
	CDR	(0.05)	0.02	(0.21)	(1.93)	0.06
	NPLR	(0.24)	0.05	(0.56)	(5.03)	0.00
	CAR	(0.04)	0.04	(0.10)	(1.02)	0.31
	LR	(0.02)	0.01	(0.21)	(2.05)	0.04
	IRS	0.09	0.09	0.11	1.02	0.31
a. Dependent Variable: ROA						

Sources:SPPS 25 output

The regression line derived from the analysis of the data is as follows: ROA = 6.05 + (0.05) × CDR - (0.24) × NPLR + (0.04) × CAR + (0.02) × LR + 0.09 × IRS

This equation represents the relationship between the dependent variable, Return on Assets (ROA), and the independent variables: Credit Default Rate (CDR), Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), Loan-to-Deposit Ratio (LR), and Interest Rate Spread (IRS). Only Interest Rate Spread (IRS) have positive impact on return on assets and remaining variables (Credit Default Rate (CDR), Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), Loan-to-Deposit Ratio (LR)) have negative impact on ROA.

Hypothesis test

Hypothesis testing commences with an initial assumption, termed a hypothesis, regarding a population parameter. This hypothesis is tested for validity by selecting a sample from the population and obtaining sample statistics. By comparing the sample mean to the hypothesized population value, the test determines whether any observed difference is statistically significant. A significance level (P), typically set at 0.05, is used as a threshold. If the P-value is less than 0.05, it indicates a significant relationship between the dependent and independent variables. Conversely, if the P-value exceeds 0.05, the relationship between the variables is deemed not significant.

Table 6: *Hypothesis Testing*

Variables	Hypothesis	Sig Value	Remarks
CDR	There is no significant impact of credit to deposit Ratio (CDR) on return on assets (ROA).	0.06	H_0 Accepted
NPLR	There is no significant impact of non-performing loan Ratio (NPL) on return on assets (ROA).	0.00	H_1 Accepted
CAR	There is no significant impact of capital adequacy Ratio (CAR) on return on assets (ROA).	0.31	H_0 Accepted
LR	There is no significant impact of liquidity Ratio (LR) on return on assets (ROA).	0.04	H_1 Accepted
IRS	There is no significant impact of interest rate spread on return on assets (ROA).	0.31	H_0 Accepted

Source: SPSS 25 output

The data presented in Table 6 was analyzed to assess the impact of various financial ratios on Return on Assets (ROA). Each hypothesis was formulated to state that there is no significant impact of a specific ratio on

ROA. The significance level (Sig Value) was then calculated for each hypothesis test. Here's a breakdown of the findings:

The hypothesis regarding the Credit to Deposit Ratio (CDR) and its impact on ROA was accepted (H_0 Accepted), as the Sig Value of 0.06 exceeded the typical threshold of 0.05. Similarly, the hypothesis concerning the Non-Performing Loan Ratio (NPLR) and its impact on ROA was accepted (H_1 Accepted), with a Sig Value of 0.00, indicating a significant impact. Conversely, the hypothesis related to the Capital Adequacy Ratio (CAR) and its impact on ROA was accepted (H_0 Accepted), as the Sig Value of 0.31 exceeded the threshold. For the Liquidity Ratio (LR), the hypothesis of no significant impact on ROA was rejected (H_1 Accepted), as the Sig Value of 0.04 fell below the typical threshold, suggesting a significant impact. Lastly, the hypothesis concerning the Interest Rate Spread (IRS) and its impact on ROA was accepted (H_0 Accepted), with a Sig Value of 0.31, indicating no significant impact. In summary, the analysis revealed that the Non-Performing Loan Ratio (NPLR) and Liquidity Ratio (LR) have significant impacts on Return on Assets (ROA), while the Credit to Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), and Interest Rate Spread (IRS) do not significantly affect ROA.

Conclusion

The results of the study reveal that the Non-Performing Loan Ratio (NPLR) and Liquidity Ratio (LR) have significant impacts on the Return on Assets (ROA) of Nepalese development banks. This suggests that fluctuations in these ratios are closely linked to changes in profitability. On the other hand, the Credit to Deposit Ratio (CDR), Capital Adequacy Ratio (CAR), and Interest Rate Spread (IRS) do not show a significant influence on ROA. Despite this, the overall regression model is statistically significant, indicating that it explains a substantial portion of the variation in ROA. Interestingly,

among the variables examined, only the Interest Rate Spread (IRS) was found to have a positive impact on ROA. In contrast, Credit Default Rate (CDR), Non-Performing Loan Ratio (NPLR), Capital Adequacy Ratio (CAR), and Loan-to-Deposit Ratio (LR) all exert negative effects on profitability. This finding highlight that while NPLR and LR are key factors in determining ROA, the other variables do not significantly affect it. The conclusion drawn from this study is that maintaining lower levels of credit defaults and non-performing loans, along with higher liquidity ratios, could potentially enhance the profitability of development banks in Nepal. However, to fully understand the underlying mechanisms driving these relationships, further research might be necessary. This would also help in making informed strategic decisions within the Nepalese banking sector.

Based on these findings, several policy implications emerge for Nepalese development banks. Firstly, banks should focus on rigorous credit risk management practices to reduce non-performing loans. This could involve stricter credit assessments and enhanced monitoring of borrowers. Additionally, maintaining a healthy liquidity ratio should be a priority, as it has a direct impact on profitability. While the Credit to Deposit Ratio, Capital Adequacy Ratio, and Interest Rate Spread were not found to significantly influence profitability in this study, banks should not overlook these aspects. Maintaining adequate capital reserves is still essential for absorbing potential losses, and a balanced approach to interest rate spreads can ensure sustainable income generation without exposing the bank to undue risk. Ultimately, the study suggests that by focusing on reducing credit risk and ensuring sufficient liquidity, development banks in Nepal can improve their financial performance. However, continuous evaluation of these factors, alongside a flexible approach to policy-making, will be crucial in adapting to the evolving financial landscape.

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