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Original Article

Credit risk Management and Profitability: Empirical Evidence from Commercial banks in Nepal

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Abstract

The study focuses on credit risk management and the profitability of Nepalese commercial banks, using a sample of five banks Nepal SBI, Nabil, Sanima, NIC Asia, and Agricultural Development Bank Limited selected from 20 commercial banks. The primary aim is to analyze the impact and relationship between credit risk management and the profitability of these banks. The sample selection was based on judgment, covering 50 observations over ten years of annual financial data. A descriptive and causal-comparative research design was adopted. Statistical tools such as mean, standard deviation, and coefficient of variation were utilized, alongside inferential statistics like correlation, regression analysis, and hypothesis testing, to evaluate variables. Credit risk indicators, including the capital adequacy ratio, supplementary capital ratio, core capital ratio, non-performing loan ratio, credit deposit ratio, and cash reserve ratio, were analyzed as independent variables. Profitability measures, such as return on equity and return on assets, served as dependent variables. The study concluded that return on equity is positively related to the capital adequacy ratio and non-performing loan ratio, indicating a direct relationship. However, it is negatively associated with the supplementary capital ratio, core capital ratio, credit deposit ratio, and cash reserve ratio. Similarly, return on assets showed a positive correlation with the capital adequacy ratio, core capital ratio, non-performing loan ratio, credit deposit ratio, and cash reserve ratio, but a negative correlation with the supplementary capital ratio.

Keywords: *Capital Adequacy Ratio, Return on Assets, Non-Performing Loan, Credit Deposit Ratio.*

JEL Classification: *G18, G21, G32, E44*

Background of the Study

The prosperity of a country depends on the stability of its financial system (Das and Ghosh, 2007). Economic advancement may be hampered by a financial system collapse, highlighting the importance of sound banking procedures. A financial institution's profitability is a crucial metric that is frequently assessed

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using its net income and operating cash flow. By lending to individuals and companies and providing necessary financial services, commercial banks, as the main financial intermediaries, greatly boost economic growth (Li & Zou, 2014).

The possibility that borrowers would miss payments is known as credit risk, and it has a direct impact on a bank's bottom line. To reduce such risks, efficient credit regulations and risk evaluations are crucial. According to Mishkin (1997), in order to preserve stability, financial institutions frequently reduce risk by turning down high-risk loans or reducing credit exposure. By using this strategy, banks are able to strike a balance between risk and return, which supports their objective of making steady profits. Because it mobilizes resources, distributes credit, and supports manufacturing activities, Nepal's banking industry is vital to the country's economy and advances public welfare. But in Nepal, credit risk has grown to be a major worry, especially since non-performing loans (NPLs) and defaults have increased. Twenty institutions, including state-owned, joint venture, and private banks, made up Nepal's banking industry by 2013 (Parajuli, 2013). These banks have to successfully manage credit risk while continuing to be profitable.

Interest from loans and fees for financial services are the main sources of bank profits. However, poor loan management and credit defaults can have a significant negative effect on profits, thus credit risk management is an essential operational priority. Banks use asset transformation to change risky liabilities like deposits into assets like loans (Magnifique, 2011). Commercial banks seek to preserve profitability and support economic growth by implementing thorough credit policies and governance practices.

The researcher pointed out that although a lot of study had looked at the profitability and liquidity positions of particular banks in Nepal, most of these studies had only looked at either of these factors alone. The connection between profitability and liquidity was not well understood. Analyzing the interactions between these two elements throughout Nepal's banking industry and determining their mutual influences was the main goal of this study. In order to maintain stability and pursue growth and expansion, each banking institution's primary goal is to become profitable. By providing credit to investors and enterprises, commercial banks are essential in generating capital for investment. Lending is a cornerstone of the banking industry, with loans serving as a major asset and a significant source of operating income, but also presenting substantial risks.

In order to promote economic growth and guarantee financial stability in a nation, the banking system is essential. According to Bhole (2004), financial institutions play a crucial role in accumulating and distributing savings as well as enabling financial transactions. Merna & Al-Thani (2008) emphasized their function in financial intermediation, resource mobilization, and facilitating global trade through foreign exchange transactions. Because banks operate in a risky environment by nature, effective credit risk management is crucial for bank management. Strong risk management frameworks are necessary since they have to manage risks and incorporate them into their goods and services. Risks are unknowns that could have negative consequences, such changes in profitability or even monetary losses, which could lead to a bank's demise.

This study examines credit risk management strategies effect on Nepalese commercial banks' bottom lines. It examines how well credit evaluation techniques reduce risks and offers insights into tactics that improve institutional stability and financial success.

Research Hypothesis

H1: There is a positive relationship between capital adequacy ratio and profitability.
H2: There is a negative relationship between non-performing loan ratio and profitability.
H3: There is a negative relationship between the cash reserve ratio and profitability.
H4: There is a positive relationship between the credit deposit ratio and profitability.

Literature Review

NPLs and credit risk have grown to be major issues, especially in the wake of the early 2000s financial crises. Acharya and Paudel (2016) stress the significance of strong credit regulations and their execution in lowering default risks, while Bista (2017) blames growing non-performing loans (NPLs) in Nepalese commercial banks on

insufficient loan assessment and monitoring procedures. High NPL levels have historically forced organizations like Rastriya Banijya Bank and Nepal Bank Limited to make significant efforts to improve and modify their credit management procedures. This wide range of activities exposes banks to a number of hazards, which are mainly divided into three categories: operational, market, and credit risk. A problem made worse in Nepal by unstable economic conditions and insufficient borrower screening is credit risk, which is the possibility of losses due to borrowers' noncompliance with loan or contractual commitments (Shrestha, 2019). Market risk includes the potential for earnings and capital to be vulnerable to changes in interest rates, liquidity, and foreign exchange rates, among other things. On the other hand, operational risk results from problems including fraud, system failures, mistaken transactions, natural disasters, and asset mismanagement.

The clause pertaining to the classification of bank and financial institution loans has been modified by Nepal Rastra Bank. The central bank told the licensed "A," "B," and "C" class BFIs in a circular issued Friday to categorize their non-performing loans into five groups.

A lender must now designate loans that have not been repaid for three months as "Pass" debts in accordance with the new regulations. Loans that have not been repaid for three months are likewise included on the "Watch List." But the loans on the 'Watch List' are those whose principal and interest have not been repaid within the allotted time. It will be necessary to classify non-performing loans that have not been serviced for three to six months as "sub-standard" loans. Loans that are not repaid for six months to a year will also need to be labeled as "Doubtful."

Oduro et al. (2023) investigated how credit risk affected the Ghana Stock Exchange-listed banks' profitability. According to the study, a bank's long-term viability and profitability may suffer from increased exposure to credit risk.

Gadzo et al. (2022) observed the effects of credit and operational risks on the financial performance of universal banks in Ghana using Partial Least Squares Structural Equation Modeling. They also found that operational risk negatively affected the banks' financial health. Factors like asset quality, leverage, cost-to-income ratio, and liquidity positively impacted credit and operational risks, as well as profitability. Shrestha (2021) researched how credit risk management influenced the profitability of Nepalese commercial banks. Capital adequacy, cost per loan assets, and asset growth were positively correlated with return on assets and equity. However, the cash reserve ratio, leverage ratio, and non-performing loan ratio had negative effects on profitability. Credit and liquidity management had a major impact on SACCOs' financial results, according to Kahuthu (2020), especially when they were governed by a strong legal framework. To increase profitability and financial stability, the study recommended that SACCOs give priority to policy creation, cash reserve preservation, and loan product design. The relationship between credit risk management and profitability in Kenyan microfinance banks was investigated by Otieno et al. (2019). Profitability and credit risk management were revealed to be strongly correlated negatively using panel data and the system GMM approach.

Research Methodology

Research Design

The study used both causal-comparative and descriptive methods. The sources of secondary data were Nepal Rastra Bank, Nepal Stock Exchange, and other relevant institutions' annual reports, publications, and journals pertaining to banks.

Population and Sample

In this study, the 20 commercial banks that are currently listed and functioning in Nepal make up the data population. Data from certain organizations selected from the general population for analysis are referred to as sample data. The purposive sampling technique was used to choose five banks for this study.

Table 1

List of sampled banks

Sampled banks

List of Banks	Study Period
Agricultural Development Bank Nepal Limited (ADBNL)	
Nabil Bank Limited (NABIL)	
Nepal SBI Bank Limited (SBI)	2013/14 to 2022/23
NIC Asia Bank Limited (NICA)	
Sanima Bank Limited (SANIMA)	

Types and Sources of Data

Financial data from the fiscal years 2013–14 through 2022–23 are taken into consideration for the study's presentation and analysis. The study depends on secondary data to meet its goals. The annual reports of the chosen banks are among the primary secondary data sources used in this study. Other sources have also been used in addition to these studies, including plan documents, newspapers, magazines, economic journals, and NRB reports.

Collection of Data

Instead of using qualitative data, quantitative data is employed in this study. These statistics were gathered primarily from sample banks' websites, which are secondary sources. Newspapers, annual reports, private groups, non-governmental organizations, international non-governmental organizations, and governmental and semi-governmental sources are the remaining secondary sources.

Table 2

List of dependent variables and independent variables

Variables	Notion	Measure
Dependent variables		
Return on Assets (Percentage)	ROA	Net income/ Total assets
Independent variables		
Liquidity	CRR	25% of total deposit or 1/Equity Multiplier
Capital Adequacy Ratio	CDR	Sum of SCR and CCR
Supplementary Capital Ratio	SR	Tier 2 capital/ Total Risk weighted assets
Core Capital Ratio (percentage)	CCR	Tire 1 Capital/Total risk weighted asssets
Non-Performing Loan Ratio (percentage)	NPLR	Non-performing loan/Total amount of outstanding loans in banks
Credit Deposit Ratio	CDR	Total Credit/Total Deposit

Regression model

The Regression Model;

$ROA_{it} = \beta_0 + \beta_1 CAR + \beta_2 SR + \beta_3 CR + \beta_4 NPLR + \beta_5 CDR + \beta_6 CRR + \varepsilon_{it}$

β_0	=	Constant Value
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$	=	Coefficient of Independent Variables
ROA	=	Return on Assets
SR	=	Supplementary Capital Ratio
CCR	=	Core Capital Ratio
NPLR	=	Non-performing loan Ratio
CAR	=	Capital Adequacy Ratio
CDR	=	Capital Deposit Ratio
CRR	=	Cash Reserve Ratio

εit = Error Terms

Definitions of Variables

Return on Assets (ROA)

A company's profitability indicates how well it creates value for its shareholders. Profit after taxes, return on equity (ROE), return on assets (ROA), earnings per share, and any other widely recognized market value ratio are just a few of the financial metrics that can be used to quantify it (Pandey, 2010).

Non-Performing Loan Ratio (NPLR)

One of the most important metrics for assessing a bank's operational effectiveness is the non-performing loan ratio. While a higher ratio points to possible inefficiencies or management difficulties, a lower NPLR shows improved efficiency and management practices inside the bank. As noted by Kattel in 2014, a non-performing loan ratio of up to 5% is considered acceptable by international banking norms.

Capital Adequacy Ratio

The capital adequacy ratio outlines the required capital that banks and other financial institutions must keep, acting as a regulatory guideline. The first international standard, Basel I, was created in 1988 and required banks to maintain a certain capital-to-asset ratio, with asset values modified according to broad risk classifications. As noted by Miccolis (2002), the idea of capital adequacy entails determining the necessary capital to satisfy specific economic capital restrictions.

Supplementary Capital Ratio (SC)

Funds that are not normally shown in a bank's financial statement, such as revaluation reserves, hybrid capital instruments, and subordinated term loans—also known as junior debt securities—are included in Tier 2 capital. It also includes uncollected reserves and loan loss contingencies. An accounting technique called revaluation reserves is used to change the value of assets, such as real estate, to reflect their current market value. Banks had to maintain a minimum capital ratio of 11%, with at least 6% going toward core capital, in accordance with capital adequacy laws. The remainder was set aside for additional funding. Because tier 2 capital was thought to be less reliable than tier 1 capital, it was categorized as supplementary.

Core Capital Ratio (CC)

The ratio of a bank's total risk-weighted assets to its essential Tier 1 capital, which consists of equity and stated reserves, is known as the Tier 1 capital ratio. This measure has been incorporated into regulatory guidelines and is a crucial indicator of a bank's sound financial standing. Banks had to maintain at least 6% of their total assets, which may have included declared reserves. A bank's basic equity capital is compared to its risk-weighted assets, which include all assets that are routinely evaluated for credit risk, using the Tier 1 capital ratio.

Credit Deposit Ratio

The credit-deposit ratio represents the relationship between a bank's overall lending and its total deposits. When expressed as a percentage, a ratio below one indicates that the bank utilized its own deposits to extend loans to customers without seeking external borrowing.

Cash Reserve Ratio

Since loans were distributed according to the National Reserve Bank's standards based on liquidity, the Cash Reserve Ratio was essential to credit management. Commercial banks of the "A" class were allowed to keep their CD Ratio as high as 80%. As a result, this ratio was crucial for managing loans for all managers and financial organizations. A company's ability to meet its immediate short-term obligations is evaluated using liquidity ratios. These liquidity ratios were of particular importance to short-term creditors who sought to determine the company's

capacity to meet its current financial commitments.

Table 3

Descriptive Analysis

Table 3 reveals the descriptive analysis for independent variables such as capital adequacy ratio (CAR), core capital ratio (CR), supplementary capital ratio (SC), non-performing loan ratio (NPLR), credit deposit ratio (CDR), cash reserve ratio (CRR) and return on equity (ROE) and return on assets (ROA) as dependent variables. The descriptive analysis is based on a total fifty numbers of observations.

Descriptive Statistics

Variables	N	Range	Minimum	Maximum	Mean	Std. Deviation
CAR	50	84.13	11.01	95.14	28.04	21.19
SR	50	5.76	0.82	6.58	2.13	1.158
CC	50	19.30	8.24	27.54	12.39	3.59
NPLR	50	39.22	0.00	39.22	10.76	11.96
CDR	50	107.91	9.47	117.38	67.03	31.34
CRR	50	31.87	4.78	36.65	20.10	9.73
ROA	50	3.16	0.83	3.99	1.97	0.73
ROE	50	27.56	5.72	33.28	17.95	6.15

Over a ten-year period, the capital adequacy ratio had an average of 28.04 percent and a standard deviation of 21.19 percent. 11.01 and 95.14 percent are the lowest and maximum percentages of CDR, respectively. Therefore, 84.13 percent is the range for CDR. Similarly, over a ten-year period, the core capital ratio's mean value is 12.39 percent with a standard deviation of 3.59. 8.24 and 27.54 percent are the lowest and maximum percentages of CR, respectively. Therefore, 19.30 percent is the range for CR. Similarly, over a ten-year period, the supplementary adequacy ratio's mean value is 2.13 percent with a standard deviation of 1.158. SR has a minimum of 0.82 and a maximum of 6.58 percentages. Therefore, 5.76 percent is the range for SR.

Similarly, the mean value for the NPLR ratio is 10.76 percent with a standard deviation of 11.96 over ten years. The minimum and maximum percentages of NPLR are 0.00 and 39.22 percentages. Thus, the range for NPLR is 39.22 percent. Continuously, the mean value for the credit deposit ratio is 67.03 percent with a standard deviation of 31.34 over ten years. The minimum and maximum percentages of CDR are 9.47 and 117.38 percentage. Thus, the range for CDR is 107.91 percent. Moreover, the mean value for the cash reserve ratio is 20.10 percent with a standard deviation of 9.73 over ten years. The minimum and maximum percentages of CRR are 4.78 and 36.65 percentages. Thus, the range for CRR is 31.87 percent. Further, the mean value for the return on assets ratio is 1.97 percent with a standard deviation of 0.73 over ten years. The minimum and maximum percentage of ROE is 0.83 and 3.99 percentage. Thus, the range for ROE is 3.16 percent. Eventually, the mean value for the return on equity ratio is 17.95 percent with a standard deviation of 6.15 over ten years. The minimum and maximum percentage of ROE is 5.72 and 33.28 percentage. Thus, the range for ROE is 27.56 percent.

Table 4

Bivariate Pearson's' Correlation Analysis

Table 4 shows the correlation analysis among independent variables such as capital adequacy ratio (CAR), core capital ratio (CR), supplementary capital ratio (SC), non-performing loan ratio (NPLR), credit deposit ratio (CDR), cash reserve ratio (CRR) and return on equity (ROE) and return on assets (ROA) as dependent variables.

Variables	Correlations							
	CAR	SR	CC	NPLR	CDR	CRR	ROE	ROA
CAR	1	-.242	-.207	.865**	-.448**	-.674**	.588**	.442**
		.091	.148	.000	.001	.000	.000	.001

Variables	Correlations							
	CAR	SR	CC	NPLR	CDR	CRR	ROE	ROA
SR		1	-.187	-.207	.167	.181	-.111	-.203
			.193	.149	.245	.209	.443	.158
CC			1	-.274	.361**	.413**	-.499**	.142
				.054	.010	.003	.000	.326
NPLR				1	-.687**	-.810**	.476**	.349*
					.000	.000	.000	.013
CDR					1	.886**	-.133	.262
						.000	.358	.066
CRR						1	-.323*	.021
							.022	.884
ROA								1

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

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

Table 4 depicts the positive correlation between return on equity and the capital adequacy ratio, which means that both variables move in the same direction as the capital adequacy ratio grows. However, return on equity is negatively correlated with both the core capital ratio and the supplementary capital ratio, indicating that the variables move in opposite directions and that return on equity falls when one of these ratios rises. An increase in one variable causes a positive change in the other, according to a positive correlation; conversely, a fall in one variable causes a rise in the other. Additionally, the analysis discovers a negative correlation between return on equity and the non-performing loan ratio, suggesting that there is an inverse relationship between the two variables and that return on equity decreases as the non-performing loan percentage increases. The credit deposit ratio and return on equity both show a positive link, indicating that when the credit deposit ratio rises, so does return on equity. On the other hand, there is a negative connection between the cash reserve ratio and return on equity, indicating that the two variables move in opposition to one another when the cash reserve ratio increases and return on equity falls.

Table 5

Regression Analysis of CAR, SR, CC, NPLR, CDR, and CRR on ROA

M	Intercept	Regression Coefficients						R2	F-Value	P-Value
		CAR	SR	CC	NPLR	CDR	CRR			
1	1.550	.015						.195	11.63	0.01**
	(9.985)	(3.410)								
2	2.244		-.127					.041	2.055	.158
	(10.468)		(-1.433)							
3	1.618			.029				.020	.985	.326
	(4.345)			(.993)						
4	1.746				.021			.122	6.659	0.013*
	(13.309)				(2.580)					
5	1.567					.006		.069	3.545	.066
	(6.583)					(1.883)				
6	1.942						.002	.00	.021	.884
	(8.099)						(.146)			
7	.057	-.003	-.097	.010	.061	.024	-.011	.627	12.06	0.00**
	(.135)	(-.392)	(-1.537)	(.472)	(4.041)	(4.412)	(-.517)			

Notes:
(i) Figures in parentheses are t- values.
(ii) The asterisk (*) sign indicates that result is significant at 5 percent level and double asterisk (**) sign indicates that result is significant at 1 percent.

Table 5 presents both simple linear regression and multiple linear regression analyses, with return on assets (ROA) as the dependent variable. The multiple regression model summary shows an R-square value of 0.627, meaning that 62.7 percent of the variation in return on assets can be explained by the independent variables, such as capital adequacy ratio, supplementary capital ratio, core capital ratio, non-performing loan ratio, credit deposit ratio, and cash reserve ratio. The model's fitness is confirmed by an F-value of 12.06, with a significance level of 0.00, suggesting that the research model is a good fit for explaining credit risk management and its impact on profitability in Nepalese commercial banks.

For the capital adequacy ratio, the regression coefficient is 0.015, implying that a 1 percent increase in capital adequacy ratio leads to a 1.5 percentage point increase in return on assets. The R-square value of 0.195 indicates that 19.5 percent of the variation in ROA is explained by the capital adequacy ratio. With a p-value of 0.01, which is less than 0.05, a statistically significant positive relationship exists between the capital adequacy ratio and return on assets. Therefore, the alternative hypothesis is accepted. For the supplementary capital ratio, the regression coefficient is -0.127, indicating that a 1 percent increase in the supplementary capital ratio results in a 12.7 percentage point decrease in return on assets. The R-square value of 0.041 shows that only 4.1 percent of the variation in ROA is explained by the supplementary capital ratio. With a p-value of 0.158, which is greater than 0.05, the relationship between supplementary capital ratio and ROA is statistically insignificant. As such, the alternative hypothesis is not accepted. For the core capital ratio, the regression coefficient is 0.029, suggesting that a 1 percent increase in the core capital ratio results in a 2.9 percentage point increase in return on assets. The R-square value of 0.20 indicates that 20 percent of the variation in ROA is explained by the core capital ratio. However, the p-value is 0.326, which is greater than 0.05, suggesting that the relationship between core capital ratio and ROA is statistically insignificant. Therefore, the alternative hypothesis is not accepted.

The regression coefficient for the non-performing loan ratio is 0.021, meaning that a 1 percent increase in the non-performing loan ratio leads to a 2.1 percentage point increase in return on assets. The R-square value of 0.122 indicates that 12.2 percent of the variation in ROA is explained by the non-performing loan ratio. With a p-value of 0.013, which is less than 0.05, the relationship between the non-performing loan ratio and ROA is statistically significant. Thus, the alternative hypothesis is accepted. For the credit deposit ratio, the regression coefficient is 0.006, indicating that a 1percent increase in the credit deposit ratio results in a 0.6 percentage point increase in return on assets. The R-square value of 0.069 shows that 6.9 percent of the variation in ROA is explained by the credit deposit ratio. With a p-value of 0.066, which is greater than 0.05, the relationship between the credit deposit ratio and ROA is statistically insignificant. As a result, the alternative hypothesis is not accepted.

Finally, for the cash reserve ratio, the regression coefficient is 0.002, suggesting that a 1 percent increase in cash reserve ratio leads to a 0.2 percentage point increase in return on assets. The R-square value of 0.000 indicates that the cash reserve ratio does not explain the variation in ROA. The p-value of 0.884, greater than 0.05, shows that the relationship between cash reserve ratio and ROA is statistically insignificant. Thus, the alternative hypothesis is not accepted.

Table 6

Hypothesis Summary with ROA as profitability proxy

Hypotheses	Variables		Remarks at 95 Confidence Level
	DV	IV	
H11: There is positive significant relationship between capital adequacy ratio and profitability.	ROA	CAR	Accepted

Hypotheses	Variables		Remarks at 95 Confidence Level
	DV	IV	
H12: There is negative significant relationship between non-performing loan ratio and profitability.	ROA	NPLR	Accepted
H13: There is negative significant relationship between cash reserve ratio and bank profitability.	ROA	CRR	Accepted
H14: There is positively significant relationship between credit deposit ratio and bank profitability.	ROA	CDR	Accepted

Conclusion

The analysis concludes that the capital adequacy ratio and the non-performing loan ratio have a positive association with profitability, as determined by return on equity, suggesting that they move in the same direction. Profitability often increases as credit risk metrics like capital adequacy and non-performing loan ratios improve. Return on equity, however, has a negative correlation with the cash reserve ratio, supplemental capital ratio, core capital ratio, and credit deposit ratio, indicating that adjustments to these credit risk parameters have the opposite effect on profitability. A decline in profitability results from a positive shift in these factors. Likewise, the study demonstrates a positive relationship between return on assets and the cash reserve, non-performing loan ratio, credit deposit ratio, core capital ratio, and capital adequacy ratio. On the other hand, the additional capital ratio and return on assets have a negative correlation, meaning that they move against each other. The capital adequacy ratio, which has a positive correlation with the non-performing loan ratio, is the credit risk element that has the biggest impact on profitability. On the other hand, the core capital ratio has the biggest detrimental impact on banks' profitability, followed by the supplementary capital ratio. Capital sufficiency is the most significant credit risk factor for bank profitability since it is essentially the total of the core and supplemental capital ratios. The capital adequacy ratio, core capital ratio, non-performing loan ratio, credit deposit ratio, and cash reserve ratio all have a positive correlation with return on assets, which means that they all increase in the same direction.

However, return on assets has a negative correlation with the supplementary capital ratio, indicating an inverse relationship. The regression analysis reveals that the capital adequacy ratio has a positive coefficient, meaning it positively impacts bank profitability. In contrast, the supplementary capital ratio has a higher positive coefficient, suggesting a stronger positive effect on profitability. On the other hand, the core capital ratio has a negative coefficient, indicating a negative impact on profitability. The non-performing loan ratio has a positive coefficient, suggesting that an increase in non-performing loans positively affects profitability. The credit deposit ratio and cash reserve ratio both have negative coefficients, indicating that increases in these ratios negatively affect profitability.

Implications

This study emphasizes how crucial it is to promote a strong institutional framework that includes law and order, effective bureaucracy, and democratic accountability in order to hasten the expansion of Nepal's commercial banks. To improve the performance of the banking industry, other elements like the money supply and exchange rates can also be taken into account. Microeconomic factors like inflation and interest rates must be taken into consideration in order to properly leverage the stock market. Even though there are more and more listed banks every year, the increase is not split evenly throughout the various industries.

Policy Implications

Commercial banks in Nepal deal with issues such rumor-driven market swings, a lack of information that is easily accessible, and inadequate investor awareness. Consequently, it is imperative to start initiatives that raise investor awareness. It is wise to concentrate investment efforts on the commercial banking industry since its performance is superior to that of other industries. The stock exchange should also have strong operations, efficient management procedures, and a focus on the market and investors.

Financial Managers

Financial managers can use this study's insightful findings to help them create plans and policies pertaining to financial decision-making. In the end, the results help managers maintain important ratios, such the quick ratio, which enhance profitability. Financial managers can create plans to increase the banking industry's profitability by putting these findings to use. The report also provides advice on how to increase cash and cash-equivalent instrument generation and operating task management, both of which are vital to an institution's financial stability.

Shareholders and Investors

For investors and stockholders with an interest in the banking and financial industries, the study's conclusions also offer useful information. The foundation of wealth creation is the idea of investment, which entails making financial sacrifices now in order to reap rewards later. The study provides information that can help guide decision-making for efficient and profitable investment. Bonds, shares, debentures, marketable securities, treasury bills, commercial papers, trade credit, letters of credit, and repurchase agreements are among the many instruments that investors usually deal in. They can use this study to help them make wise financial market decisions.

Future Scope

Market participants may benefit from the fresh and insightful understanding of the Nepali financial market provided by the study's findings. The results are especially helpful for fund managers and equities investors since they may use these factors to help them make decisions when determining which ratios are suitable for financial research. The dynamics of credit risk management in the banking industry in Nepal and its effects on more general economic outcomes could be further investigated in future studies.

References

Bhattarai, Y. R. (2014). Effect of credit risk on the performance of Nepalese commercial banks. *Journal of Management and Finance, 1*(1), 41-64.

Chanra, A. S. (2015). The effect of credit risk management on the profitability of the Jordanian commercial banks. *Investment Management and Financial Innovations, 12*(1), 338-345.

Chhabra, O. P., & Taneja, C. V. (1991). Assessing the risk and performance of the GCC banking sector. *International Research Journal of Finance and Economics, 65*(1), 72-81.

Elhance, D. N., & Agarwal, R. D. (1975). Delegation of authority. Bombay, Progressive, 138.

Gadzo, S. G., Kportorgbi, H. K., & Gatsi, J. G. (2022). Credit risk and operational risk on profitability of universal banks in Ghana: A partial least squared structural equation model (PLS-SEM) approach. *Cogent Economics & Finance, 7*(1), 1589406.

Gatuhu, R. N. (2013). The effect of credit management on the profitability of microfinance institutions in Kenya (Doctoral dissertation, University of Nairobi).

Greuning H., & Bratanivic, S. B. (1999). Analyzing banking risk. *Journal of Economic Perspectives, 1*(1), 165-168.

Gupta, F. S. (2015). Impact of credit risk management on the profitability of selected commercial banks listed on the Ghana stock exchange. *Journal of Economics, Management and Trade,* 1-10.

John, T. (1998). Herd structure and farm evaluation of the urban and peri-urban dairy farms in Addis Ababa milk shed. ESAP proceedings. Ninth National Conference of Ethiopian Society of Animal Production (ESAP).

Jorion, P. (2009). Risk management lessons from the credit crisis. *Review of Economics and Finance, 19*(3), 412-426.

Kahuthu, R. R. (2020). The impact of credit management and liquidity on the profitability of deposit-taking SACCO'S. *The Journal of Risk Model Validation, 4*(1), 71.

Kattel, J. B. (2015). The determinants of loan loss provision in Nepalese commercial banks. *Journal of Banking and Finance, 30*(2), 220-240.

Khrawish, M.M. (2011). Factors affecting the profitability of listed companies at the Nairobi securities exchange

in Kenya. *Research Journal of Finance and Accounting, 4*(15), 99-105.

Magnifique, U. J. (2011). The effect of credit risk management on the profitability of commercial banks in Rwanda. *Journal of Finance, 39*(1), 575-592.

Miccolis, R. (2002). Research methods quantitative and qualitative approaches by Mugenda. Nairobi, Kenya.

Miccolis, T. R. (2002). The low monetary rates paradox, banking stability, and credit: evidence from the Euro area. *Journal of Banking and Finance, 34*(1), 399-408.

Michel, B., Flores, M. J., Viguera, E., Grompone, G., Seigneur, M., & Bidnenko, V. (2001). An evaluation of the effect of credit risk management on the profitability. *Proceedings of the National Academy of Sciences, 98*(15), 8181-8188.

Mishkin, A. K. (1997). The economics of money, banking, and financial markets. *Journal of Accounting and Economics, 31*(1), 405-440.

Nwankwo, W. C. (1991). The effect of credit risk management on the performance of commercial banks in Rwanda (A case study of equity bank Rwanda Ltd). *International Journal of Business and Management Review, 4*(5), 1-12.

Ochung, M. (1999). Credit risk and the performance of Nigerian Banks. *The Journal of Risk Model Validation, 4*(1), 71.

Oduro, R., Asiedu, M. A., & Gadzo, S. G. (2023). Impact of credit risk on corporate profitability: Evidence from listed banks on the Ghana stock exchange. *Journal of Economics and International Finance, 11*(1), 1-14.

Ogboi, C., & Unuafe, O. K. (2013). Impact of credit risk management and capital adequacy on the profitability of commercial banks in Nigeria. *Journal of emerging issues in economics, finance, and banking, 2*(3), 703-717.

Otieno, S., Nyagol, M., & Onditi, A. (2019). Relationship between Credit risk management and profitability: empirical evidence from microfinance banks in Kenya. *Research Journal of Finance and Accounting, 7*(6), 2222-2847.

Pandey, I. M. (2010). Venture capital for financing technology in Taiwan. *Technovation, 16*(9), 499-523.

Pandey, R. (2006). Effect of credit risk on the performance of Nepalese commercial banks. *NRB Economic Review, 28*(1), 41-64.

Payle, D. (1997). Bank risk management. *Journal of Financial Regulation and Compliance, 4*(3), 278-291.

Polizatto, V. (1990). Prudential regulation and banking supervision: building an institutional framework for banks. *Journal of Banking and Finance, 34* (4), 697-702.

Poudel, B. (2012). The impact of credit risk management on profitability of commercial banks in Nepal. *Journal of Financial Economics, 19*(2), 217-235.

Poudel, P. R. (2012). The impact of credit risk management on profitability of commercial banks in Nepal. *International Journal of Arts and Commerce, 1*(5), 9-15.

Pradhan, K. (1994). The impact of financial risks on Islamic bank's profitability. *Nepalese Journal of Management, 2*(3), 26-27.

Ratnovskim W. E., & Huang, E. K. (2009). Determinants of bank profitability. *Journal of Financial Services Research, 22*(3), 203-224.

Santana, M. J. (2018) How to practice person-centered care: A conceptual framework. *Health Expectations 21* (2) 429-440.

Seppala, J. (2000). The term structure of real interest rates: theory and evidence from U.K. index-linked bonds. *Journal of Banking & Finance, 28*(4), 835-856.

Shafiq, A., & M. Nasr (2010). Risk management practices followed by the commercial banks in India, *International Review of Business Research Papers, 6*(2), 308-325.

Shrestha (2017). The impact of credit risk management on profitability: Evidence from Nepalese commercial banks. *NRB Economic Review, 3*(5), 25-47.

Uwuigbe, U., Uwuigbe, O. R., & Oyewo, B. (2018).) Credit management and bank performance of listed banks in Nigeria. *Journal of Economics and Sustainable Development, 6*(2), 27-32.