International Journal of Finance and Commerce
www.commercejournals.com
Online ISSN: 2664-715X, Print ISSN: 2664-7141
Received: 29-08-2023, Accepted: 14-09-2023, Published: 30-09-2023
Volume 5, Issue 3, 2023, Page No. 91-97

Factor affecting non-performing loans of commercial banks

Anisha Rana
MBS-F Scholar, Department of Business Administration, Lumbini Banijya Campus, Butwal, Nepal

Abstract
This study investigates the factors affecting Non-Performing Loans of Commercial Banks of Nepal during the period from 2012/13 to 2021/22. Specifically, the study examines independent factors such as Bank Size, Capital Adequacy Ratio, Loan to Deposit Ratio, Liquidity Ratio, Return on Equity, and Return on Assets, while the dependent variable is Non-Performing Loans. The data were collected from 10 commercial banks using convenience sampling techniques. The study uses the pooled OLS model and the random effect model as regression models after testing their appropriateness using Breusch-pagan test and Hausman test. The result shows Bank size has negative effect and significant on NPL which means as bank size increases the level of NPL decreases. However, ROA, ROE, Liquidity, CAR and LDR have insignificant effect on NPL. Therefore, commercial banks should be focused on increasing bank size so that they diversify the portfolio of assets to reduce the size of NPL.

Keywords: Non-performing loan, commercial bank, bank specific variables, panel least square

Introduction

The banking sector in Nepal has experienced significant growth in recent decades, playing a crucial role in the country's economic development. Commercial banks serve as intermediaries, facilitating the transfer of funds from surplus units to deficit units. Roman & Sargu (2014) [21] stated that the banking zone occupies an important position in funding public or private sectors. Banks serve as the initial point for interaction between suppliers and borrowers. By accepting deposits from the public and providing loans, commercial banks gather scattered funds from the economy and allocate them to productive sectors. Loans constitute a substantial portion of a bank's transactions, with interest income being a major revenue source, accounting for 60 to 70 percent of operating income. However, default loans pose a significant threat to commercial banks. The banking sector is exposed to a number of risks, such as interest risk, market risk, liquidity risk, credit risk, and operational risk. Among these, credit risk is the major one. The risk of nonpayment of loan leads to credit risk.

A non-performing loan refers to a borrowed sum of money for which the debtor has not made scheduled payments for at least three months. The delayed payment can include both interest and principal amounts. Non-performing loans are classified into three types: substandard loans, doubtful loans, and bad loans. The classification is determined based to how long the delay was. Sub-standard loans whose interest or principal payments are longer than three months in arrears of lending conditions are eased. A doubtful loan is liquidation of outstanding debts appearing uncertain and the accounts suggest that there will be a loss, the exact amount of which cannot be determined. Bad loans are regarded as not collectable, usually loans to firms, which applied for legal resolution and protection under bankruptcy laws. Pass loans are under the category of performing loans whereas sub-standard loan, doubtful loan and bad loan are under the non-performing loans (NRB, 2013).

Achou and Tenguh (2008) [1] shows that there is a significant relationship between the bank profitability (ROE) and credit risk. Better non-performing loan results in improved commercial banks profitability. Therefore, bank managers need to practice prudent credit risk, safeguard the assets of the bank and protect the shareholders' interests.

In an economy like Nepal's, commercial banks play a central role in terms of the financial sector; therefore, any irregularity on the part of these institutions could lead to turbulence in the economy (Gautam *et al*., 2018). This is the primary rationale and cause for conducting this research. NPLs are one of the most significant difficulties facing the banking industry. As a result, nonperforming loans, also known as NPLs, go from being an issue on a national level to being a problem on a worldwide level through the domino effect. This study also examines the factors factor effecting Non-performing loan, including bank-specific variables (LDR, CAR, ROA, ROE, Liquidity, and Bank Size). The major objective of this study is to examine the relationship and effect of LDR, CAR, ROA, ROE, Liquidity, and Bank Size on NPL of Nepalese commercial banks.

Review of Literature

Bhattarai (2015) [8] analyzed the impact of macroeconomic variables (GDP, Inflation, and Real Effective Exchange Rate) and bank specific variables (size, change in loan, real lending rate of interest, and share of loan to total assets) on the non-performing loan of the commercial banks in Nepal. The study was conducted mainly with secondary sources. The data were collected for 26 commercial banks covering the period of 2002-2012 with 227 observations. The study found that macroeconomic variables such as the real effective exchange rate have significantly negative impact on non-performing loan. The impact of GDP growth rate was found to be insignificant in this study. Inflation rate had significant positive impact on non-performing loan whereas bank size had negative and insignificant impact on non-performing loan.

Mombo (2013) examined the effect of non-performing loans on financial performance of deposit taking micro finance

institutions in Kenya. The study made use of secondary data that was obtained specifically from the financial stations of the microfinance institutions. The study found out that non-performing loan in deposit taking microfinance institutions account for the greatest percentage of the variance in the profitability of the institutions. Employing a more conventional business model that centers on deposits and loans enabled banks to optimize profitability with lower levels of liquid assets. On another note, a separate study conducted in Ethiopia focused on the nonperforming loans (NPLs) of commercial banks, using secondary data and a quantitative approach. The findings of this study highlighted that bank profitability, as measured by Return on Equity (ROE), capital adequacy ratios, and lending rates, exhibited negative and statistically significant impacts on NPLs. Conversely, profitability measured through Return on Assets (ROA) displayed a positive and statistically significant effect on NPLs among commercial banks in Ethiopia. However, the mentioned study had limitations, as it did not consider specific bank-related variables such as cost efficiency, loan growth, and bank size, and their potential influence on NPLs.

Higher ROA indicates a sound financial performance and a stable financial system. The profitable banks are less constrained to invest in risky loans because of less pressure to generate more revenue. Therefore, we assume a negative relationship between ROA and NPL, which has been shown by Godlewski (2005), Louzis *et al*. (2012) [13], and Boudriga *et al*. (2010) [9]. However, Hu *et al*. (2006) found a positive correlation between ROA and NPLs in the Nepalese banking system, while Makri *et al*. (2014) [14] found no significant relationship between ROA and the level of NPLs.

Maintaining a minimum capital adequacy ratio is mandatory for each financial institution (Basel Accord). The portfolio risk arises with the increase in minimum capital ratio. However, it is claimed that low capital ratio increases NPLs (moral hazard hypothesis) (Berger & DeYoung, 1997) [7]. In contrast, Louzis *et al*. (2012) [13] and Cheng *et al*. (2016) [10] found insignificant effect of CAR on NPLs.

Higher loan to deposit ratio indicates that deposits are mobilized for generating revenues and increasing profitability. The profitability encourages investing deposits in less risky sectors with high credit standards. This activity prevents bad loans. Similarly, lower loan to deposit ratio indicates inefficiency in resource allocation and low profit. Based on the empirical studies of Jameel (2014) and Anjom & Karim (2016) [4], the credit to deposit ratio has a negative relationship with the NPLs.

Koju *et al*. (2018) [12] evaluated the macroeconomic and bank specific determinants of non-performing loans (NPL) in the Nepalese banking system using both static and dynamic panel estimation approaches. The study considered 30 Nepalese commercial banks over the period 2003-2015 and used 7 bank-specific and 5 macroeconomic variables to assess the impact of banking management and economic indicators on NPL. The findings showed that NPLs have significant positive relationship with the export to import ratio, inefficiency, and assets size and a negative relationship with the GDP growth rate, capital adequacy, and inflation rate.

Morakinyo *et al*. (2016) [16] investigated the major determinants of non-performing loans in the MINT (Mexico, Indonesia, Nigeria and Turkey) economies. Identifying major determinants of non-performing loans, which are observed to be growing in these countries in recent time, will also guide policy and forecasting future levels that will be useful for pre-emptive policies and actions. It used static panel data and dynamic panel model analyses. Evidence suggested that in the four economies, capital adequacy ratio, liquidity ratio, total bank credit and return on assets are significant bank-specific determinants of non-performing loans. Also, while the return on assets, liquidity ratio and capital adequacy ratio show a negative and significant relationship with non-performing loans, nominal exchange rate, money supply growth rate, total bank credit and lending rate show positive and very significant relationships with non-performing loans.

Based on research conducted by Msomi (2022) [17] as the author's main article, it was found that the factors that have a positive influence on NPL include the Lending Interest Rate, Liquidity Ratio, Cost Income Ratio, and Inflation Rate. Meanwhile, the factors that have a negative influence on NPL according to the results of Msomi's research (2022) [17] are Return on Assets, Capital Adequacy Rati, and Gross Domestic Product.

Khoirinusa *et al*. (2022) analyzed factors affecting non-performing loan in conventional banks of Indonesia. The study used 36 conventional banks listed on the Indonesia Stock Exchange for the 2017- 2021 period. The sampling technique used is purposive sampling and the analysis method used is panel data regression. The independent variables in this study consist of lending interest rates, return on assets, liquidity ratio, capital adequacy ratio, cost income ratio, inflation rate, and gross domestic product while the dependent variables are non- performing loans. The results showed that the rate of return on assets, capital adequacy ratio, and gross domestic product had a significant negative effect on the level of non- performing loans and the inflation rate had a significant positive effect on the level of non-performing loans. Lending interest rates and liquidity ratios have no effect on the level of non-performing loans.

LDR has an important role as an indicator that shows the level of credit expansion undertaken by banks so that LDR can also be used to measure the running of bank functions as an intermediary institution. The results of research conducted by Astrini *et al*. (2014) [5] states that the LDR has a positive and partially significant effect on the NPL.

Yulianti *et al*. (2018) [25] investigated the effects of capital adequacy ratio, bank size, and loan to deposit ratio on non-performing loan. The study was conducted over Public Company Bank consisting of State-Owned Bank (state-owned enterprises), Private National Private Banks, Foreign Private Banks, and Regional Development Banks (BUMD) of Indonesia. The sampling technique is done by purposive sampling method. Total population of 118 companies, while for the sample research that meets the above criteria is as many as 81 companies with span of time covering the year 2012-2016. The study result showed capital adequacy ratio has a positive effect on non-performing loans, while bank size negatively affects nonperforming loans, and loan to deposit ratio negatively affects nonperforming loans.

Research Methodology

The research is based on quantitative analysis, in which the data are collected from secondary sources through annual reports published by the Nepal Rastra Bank and individual banks' websites. To achieve the research objectives, this

study employs descriptive, causal comparative research designs. As of May 16, 2023 (Licensed by NRB) there are 21 commercial banks operating in Nepal so, all the commercial banks operating in Nepal are considered as the population. Out of 21 banks only 10 banks are taken as sample in this study from the year 2012 to 2022 through convenience sampling method.

Table 1: Name of banks

S. N	Name of the company	Study period	Observation
1.	Himalayan Bank Limited	2012-2022	10
2.	Nepal SBI Bank	2012-2022	10
3.	Everest Bank Limited	2012-2022	10
4	Nepal Investment Mega Bank Limited	2012-2022	10
5	Machhapuchchhre Bank Limited	2012-2022	10
6	NMB Bank Limited	2012-2022	10
7	NICASIA Bank Limited	2012-2022	10
8	Prabhu Bank Limited	2012-2022	10
9	Kumari Bank Limited	2012-2022	10
10	Nabil Bank Limited	2012-2022	10

Definition of variables and Hypothesis

In this study Non-performing Loan is taken as dependent variables whereas bank specific determinants (total deposit ratio, capital adequacy, liquidity ratio, return on assets, return on equity, and bank size) are independent variables.

Non-Performing Loan

Nonperforming loan is most simply defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. Shrestha (2011) [23] defines the non-performing loan as "the risk that the promised cash flows from loans and securities held by FIs may not be paid in full". Non-performing loan involves inability or unwillingness of a customer or counterparty to meet commitments in relation to lending, trading, hedging, settlement and other financial transactions views non-performing loan is generally made up of transaction risk or default risk and portfolio risk. When the payment for interest and principal amount are due for 90 days or beyond, or at least 90 days of interest payments have been capitalized, refinanced, or delayed as a result of the agreement, or when there are other good reasons to doubt that payments will be made in full, a loan is considered to be non-performing.

Liquidity Ratio

Liquidity risk is the risk of loss to a bank resulting from its inability to meet its needs for cash. The liquidity of a commercial bank is its ability to fund all contractual obligations as they fall due. These may include lending and investment commitments and deposit withdrawals and liability maturates, in the normal course of business. In other words, bank liquidity refers to the ability to fund increases in assets and meet obligations as they fall due. Liquidity is considered being another external factor in terms of determining the capital structure decision of a firm. Financial market includes both banking sector and stock market. Liquidity refers to the ability of a financial institution, such as a bank, to cover potential losses resulting from loans that are classified as non-performing. The bank may have difficulty converting these NPLs into cash, as the borrowers are in financial distress, making it less likely that they will be able to repay the loans. Managing liquidity becomes crucial for banks to maintain their financial stability and ability to operate smoothly. Efficient management of NPL-related liquidity risks is critical for banks to maintain the confidence of depositors, investors, and regulators, as well as to ensure their ongoing ability to provide essential financial services to customers (Amengor, 2010) [3].

H_1: Liquidity has negative and significant impact on Non-performing loan.

Loan to deposit Ratio

Loan to Deposit Ratio is a financial metric used by banks and other financial institutions to assess their liquidity and financial stability. It is calculated by dividing total amount of loans given by the bank by the total deposit it has received from the depositors. A higher ratio indicates that a bank is more reliant on its depositor's fund to fund its lending activities, which could be a signal of financial risk. On the other hand, a lower ratio might indicate that a bank has a strong capital base and it's able to fund its lending through its own resources, rather than relying heavily on depositors' funds (Suryanto, 2015) [24].

H_2: Loan to deposit ratio has positive and significant impact on Non-performing loan.

Capital Adequacy Ratio

The term denoting or quantifying a bank's capital strength, expressed as a percentage of its credit exposure adjusted for risk, is known as the capital adequacy ratio. This ratio is computed using the bank's core capital, supplementary capital, and total risk-weighted assets. Its purpose is twofold: safeguarding depositors and fostering global financial system stability and effectiveness. It also serves to assess the sufficiency of the overall capital fund and core capital. As per NRB directives, all commercial banks are mandated to maintain a Capital Adequacy Ratio (CAR) of 11% of their capital. The term capital adequacy expresses the capacity and efficiency of banks that measures, direct and control the risks it faces, in order to be scaled, control and making decisions consistent with the strategy and policy and to strengthen its competitiveness attitude (Pradhan *et al*., 2016) [19].

H_3: Capital adequacy ratio has negative and significant impact on Non-performing loan

Return on Assets

ROA serves as an important metric for evaluating a company's profitability relative to its total assets. This indicator aids analysts, managers, and investors in gauging how effectively a company's management utilizes its assets to generate profits. ROA is a financial ratio that presents the relationship between a company's profit and its overall resources. Total assets often define it as the division of net income. Net income, representing post-tax profits, is derived from a company's income statement. Total assets, drawn from the balance sheet, encompass diverse elements such as cash, receivables, inventory, devalued capital equipment, and intangible assets like patents. Liquidity refers to the ability of a financial institution, such as a bank, to cover potential losses resulting from loans that are classified as non-performing. The bank may have difficulty converting these NPLs into cash, as the borrowers are in financial

distress, making it less likely that they will be able to repay the loans (Ghimire, 2009).

H_4: Return on Assets has negative and significant impact on Non-performing loan.

Return on Equity

Return on equity (ROE) is a measure of financial performance calculated by dividing net income by shareholders' equity. ROE is a gauge of a corporation's profitability and how efficiently it generates that profits. ROE is an essential predictor because it shows how well the organization is transforming the investments of its shareholders into profits. A higher ROE means that the business is making a greater profit with each unit of stock, which generally favorable as it signifies efficient utilization of resources. Banks often have a greater ROE in compared to other company types because they utilize leverage, or borrowed money, to create loans and earn profits. Return on Equity (ROE) is a financial indicator that assesses a company's performance by dividing its net income by shareholders' equity. ROE is possibly the most crucial statistic to take into account for investors (Monteiro, 2006) [15].

H_5: Return on Equity has negative and significant impact on Non-performing loan.

Bank Size

The bank's size is a substantial factor reflecting its robustness. There is inverse correlation between bank size and NPL levels. This relationship is explained by the idea that a larger bank size facilitates broader diversification, ultimately resulting in reduced risk, as indicated by lower NPLs. This research anticipates that a larger bank size corresponds to a lower NPL occurrence. Bank size pertains to the total value of assets recorded on a bank's balance sheet, encompassing cash, investments, loans, and other financial instruments. The aggregated assets of a bank serve as a crucial gauge of its financial stability and its capacity to engage in lending and other financial operations (Salas & Saurina, 2002).

H_6: Bank size has negative and significant impact on Non-performing loan.

Model

To identify the effect of bank specific variables on Non-performing Loan of commercial bank this study adopted the following econometric model employed by ……(2021)

$$NPL = \alpha + \beta 1CARit + \beta 2ROAit + \beta 3ROEit + \beta 4LRit + \beta 5IITLit + \beta 6BANK\ SIZEit + e$$

Where, α is Intercept /constant term, NPL is Non-Performing Loan, CAR is Capital Adequacy Ratio, ROA is Return on Assets, ROE is Return on Equity, LR is Liquidity Ratio, BS is Bank Size, e is error term, Betas are the parameters of the models and i is no. of commercial banks while t is time period.

Results and Analysis

Descriptive statistics

Table 2 shows loan deposit ratio is dispersed from its mean value 82.26 with standard deviation 7.62. It fluctuates between minimum 49.55 and maximum 96.69. The average value of CAR is 13.10 which is highly dispersed with standard deviation 1.34. The minimum value for CAR is 10.63% whereas maximum is 16.82%. In this study measure for profitability of banks is return on assets. The mean value of ROA is 1.62 with highly dispersed standard deviation 0.48. The minimum value of ROA is 0.49% whereas maximum is 3.25%. Similarly, another ROE variable exchange rate is dispersed from mean value 16.80 with standard deviation 6.21. The minimum value for ROE is 5.31 and maximum value is 36.62. The mean value of Liquidity is 14.89 with standard deviation 8.98. The minimum value for liquidity is 3.05% whereas maximum is 37.52%. For bank size, mean value is 11.53 while standard deviation is 0.76. Bank size fluctuates with minimum value 9.37 and maximum value 13.18. The mean value of NPL is 1.18 which is highly dispersed with standard deviation 0.85. The minimum value for NPL is 0.06% and maximum value is 4.03%. Highly dispersed value shows presence of outliers which is removed for further tests in this study.

Table 2: Average NPL per bank

Year	Average	Max	Min	SD
LDR	82.26	96.69	49.55	7.62
CAR	13.10	16.82	10.63	1.34
ROA	1.62	3.25	0.49	0.48
ROE	16.80	36.62	5.31	6.21
Liquidity	14.89	37.52	3.05	8.98
Ln Bank Size	11.53	13.18	9.37	0.76
NPL	1.18	4.03	0.06	0.85

Source: Calculated from Eviews 12

Correlation analysis

This study has Non-Performing Loan (NPL) as dependent variable whereas Liquidity, CAR, LDR, ROA, ROE and Bank Size as independent variables. Table 3 shows the correlation coefficients of dependent and independent variables.

Table 3: Correlation Statistics

Variables	NPL	CAR	LDR	LQUIDITY	ROA	ROE	Bank size
NPL	1						
CAR	-0.264413	1					
LDR	-0.159276	0.388511	1				
LIQUIDITY	0.046865	-0.230072	-0.119701	1			
ROA	-0.079787	-0.086178	-0.271901	-0.074720	1		
ROE	-0.175894	-0.257183	-0.500105	0.167832	0.762202	1	
Bank size	-0.227630	0.369024	0.382237	-0.313943	0.053576	-0.225740	1

Source: Calculated from Eviews 12

The correlation coefficient between NPL and CAR of -0.264413 indicates that there is low negative relationship between NPL and CAR of commercial banks, the relationship is significant at 5 percent. Similarly, there is negative relationship between NPL and LDR as correlation coefficient between NPL and LDR is -0.159276.Likewise,

there is positive relationship between NPL and Liquidity as value of correlation coefficient is r= 0.046865. Also, there is negative relationship between NPL and ROA as correlation coefficient is r= -0.079787.

The correlation coefficient between NPL and ROE is= -0.175894 which means there is a negative relationship between NPL and ROA. Lastly, the correlation coefficient between Bank Size and NPL is -0.227630 indicates that there is negative relationship between Bank Size and NPL Of commercial banks the relationship is significant at 5 percent.

Regression analysis

The model was first run on the Pool OLS model, and then using the Bresusch Pagan test and the Hausman test, it was determined that the Random effect model is appropriate for the study. As a result, the major findings of this study are generated using a random effect model.

Table 4: Result of Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	0.026567	0.064451	0.412199	0.6812
LDR	-0.015191	0.013941	-1.089635	0.2790
LIQUIDITY	0.005716	0.023000	0.248530	0.8043
LN_BANK_SIZE	-0.427767	0.158758	-2.694448	0.0085
ROA	-0.167644	0.306166	-0.547561	0.5854
ROE	-0.038917	0.023531	-1.653865	0.1019
C	7.855386	2.058464	3.816140	0.0003
R-squared	0.523170		F-statistic	6.144236
Adjusted R-squared	0.438022		Prob(F-statistic)	0.000000
S.E. of regression	0.639691		Durbin-Watson stat	1.186588

Source: calculated from E-views 12

The probability of F-statistic is 0.0000 which is less than 0.05 making model fit for the study but the validity of random effect model is tested by Hausman test.

Table 5: Result of Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d. f.	Prob.
Cross-section random	11.191149	6	0.0826

Source: Appendix

The null hypothesis of Hausman test is that Random effect model is better than fixed effect model. Here the P-value is 0.0826 which is greater than 0.05 hence null hypotheses is accepted. So, the equation of this study is explained through Random effect model.

Multicollinearity Test

The result of the test for existence of Multicollinearity between independent variables using the correlation matrix is presented below

Table 6: Correlation Coefficients of Independent Variables

Model	Collinearity Statistics	
	Tolerance	VIF
LDR	.648	1.544
CAR	.787	1.271
ROA	.347	2.884
ROE	.273	3.657
Liquidity	.793	1.260
Bank Size	.696	1.436
Dependent Variable: NPL		

In general terms,

VIF equal to 1 = variables are not correlated

VIF between 1 and 5 = variables are moderately correlated

VIF greater than 5 = variables are highly correlated

The higher the VIF, the higher the possibility that multicollinearity exists, and further research is required. When VIF is higher than 10, there is significant multicollinearity that needs to be corrected.

Major Findings

Correlation coefficient matrix shows Liquidity is positively correlated with Non-Performing Loan of commercial banks whereas CAR, LDR, ROA, ROE and Bank Size are negatively correlated with NPL. The study indicates that liquidity has an average correlation with NPLs (non-performing loans) since its correlation coefficient is near to +1.

The value of R square is 0.532 which indicates ROA, ROE, LR, LDR, CAR and Bank Size explains non-performing loan of commercial bank 53.2%.

The regression analysis shows the beta coefficient of CAR is 0.026 whereas, p-value is 0.6812. Hence, CAR has positive but insignificant impact NPL.

The regression analysis shows the beta coefficient of LDR is -0.015 whereas, p-value is 0.279. Hence, LDR has negative but insignificant impact NPL.

The regression analysis shows the beta coefficient of Liquidity is 0.005 whereas, p-value is 0.804. Hence, liquidity has positive but insignificant impact NPL.

The regression analysis shows the beta coefficient of Bank Size is -0.427 whereas, p-value is 0.0085. Hence, Bank Size has negative but significant impact NPL.

The regression analysis shows the beta coefficient of ROA is -0.167 whereas, p-value is 0.585. Hence, ROA has negative but insignificant impact NPL.

The regression analysis shows the beta coefficient of ROE is -0.038 whereas, p-value is 0.101. Hence, ROE has negative but insignificant impact NPL.

The Variance Inflation Factor (VIF) values are all below 5, with the highest value being 3.675 for the variable ROE. This indicates that there is no significant multicollinearity among the independent variables in the model.

Discussion

The study's findings suggest that liquidity has a positive impact on non-performing loans (NPLs) which matches the finding of Afriyanto *et al.* (2021) [2], Bhattarai (2018) [8], and Makri *et al.* (2014) [14]. The findings of the study show that

Capital Adequacy Ratio (CAR) has a positive impact on non-performing loans (NPLs) which is consistent with the findings of Molyneux *et al*. (2010) [18] whereas oppose the finding of Koju *et al*. (2018) [12], and Msomi (2022) [17]. The result of Return on Assets (ROA) and Return on Equity (ROE) shows negative correlation and insignificant effect on NPL. The findings are consistent with those of Louzis *et al*. (2010), Godlewski (2005), Boudriga *et al*. (2010) [9]. However, these outcomes stand in contrast to the findings of Rajan (1994). Loan to Deposit ratio (LDR) has non-significant negative impact on the level of NPL. This finding aligns with the results of Jameel (2014) and Anjom & Karim (2016) [4]. Bank Size (BS) has negative but lacks statistical significance. This finding aligns with the conclusions drawn by Yulianti *et al*. (2018) [25], indicated a negative relationship between bank capital (represented by bank size) and NPLs.

Conclusion

The study intended to investigate the influencing Non-Performing Loan of Commercial Banks in Nepal. The study was conducted over 10 commercial banks of Nepal. The result shows Bank size has negative effect and significant on NPL which means as bank size increases the level of NPL decreases. However, ROA, ROE, Liquidity, CAR and LDR have insignificant effect on NPL. Therefore, commercial banks should be focused on increasing bank size so that they diversify the portfolio of assets to reduce the size of NPL.

Implications

Over the past two decades, the Nepalese banking sector has been grappling with a concerning issue: the steady rise of Non-Performing Loans (NPLs). This problem has been exacerbated by the impact of the Covid-19 pandemic, which has had adverse effects on businesses and the national economy. Alongside the pandemic, NPLs have also been driven by regulatory challenges and ineffective lending policies. These NPLs have significantly contributed to the weakening financial condition of banks. The study demonstrated that controlling and minimizing NPLs is significantly impacted by the size of the bank. To achieve this, Banks should make sure they maintain a substantial base to absorb potential losses. Moreover, a prudent approach to lending is essential. This involves cautiously evaluating loan and advance requests and thoroughly assessing the creditworthiness of borrowers before approving loans. Furthermore, a critical step in addressing NPLs is the adherence to regulatory guidelines and reporting protocols regarding their management. By doing so, banks can establish transparency and accountability in their approach to dealing with NPLs, contributing to the overall stability and health of the banking system. Furthermore, the study is entirely based on secondary data. Therefore, future study can be based on using primary data or both primary and secondary data.

References

1. Achou TF, NC. Bank performance and credit risk management. Master Degree Project, Finance University of Skodve School of Technology and Society, 2008.
2. Afriyanto F, Purnamawati H, Sukiman I. The Effect of Capital Adequacy Ratio (CAR) and Loan To Deposit Ratio (LDR) On Non-Performing Loan (NPL) (Case Study On Conventional Commercial Banks In Indonesia On 2016-2020). Repository Universitas Sangga Buana, 2021, 295–303.
3. Amengor EC. Importance of Liquidity and Capital Adequacy to Commercial Banks". A Paper Presented at Induction Ceremony of ACCE, UCC Campus, 2010.
4. Anjom, Washeka, Karim, Asif Mahbub. Relation between nonperforming loans and macroeconomic factors with bank specific factors: A case study on loan portfolios-SAARC countries respective. ELK Asia Pacific Journal of Finance and Risk Management,2016:7(2):23-52.
5. Astrini I, WS, I, KS. Pengaruh CAR, LDR, dan Bank Size terhadap NPL pada Lembaga Perbankan Yang Terdaftar Di Bursa Efek Indonesia. E-Journal Bisma Universitas Pendidikan Ganesha Jurusan Manajeme, 2014.
6. Bank NR. Bank supervision report. Bank Supervision Department, Kathmandu, 2013.
7. Berger AN, De Young R. Problem loans and cost efficiency in commercial banks. Journal of Banking & Finance,1997:21(6):849-870.
8. Bhattarai S. Determinants of Non-Performing Loans: Perception of Nepali Bankers. Economic Journal of Development,2015:17:128-148.
9. Boudriga A, Boulila N, Jellouli S. 'Shocks Vulnerability and therapy', Bank Specific, Business and Institutional Environment Determinants of Nonperforming Loans: Evidence from MENA Countries, Economic research forum, Cairo, Egypt, 2010, 1-31.
10. Cheng MC, Lee CC, Pham QNT, Chen HY. Factors affect NPL in Taiwan banking industry. Journal of Accounting,2016:6(1):65-87.
11. Khoirunisa H, Karnasi R. Factors Affecting Non-Performing Loans of Conventional Banking in Indonesia Stock Exchange. Inisiatif: Jurnal Ekonomi, Akuntansi dan Manajemen,2022:2(2):31-55.
12. Koju L, Wang S. Macroeconomic and Bank-Specific Determinants of Non-Performing Loans: Evidence from Nepalese Banking System. Journal of Central Banking Theory and Practice,2018:7(3):111–138.
13. Louzis DPVAT, Metaxas VL. Macroeconomic and bank-specific determinants of non-performing loans in Greece: A comparative study of mortgage, business and consumer loan portfolios. Journal of Banking and Finance,2012:36(4):1012-1027.
14. Makri V, Tsagkanos A, Bellas A. Determinants of non-performing loans: The case of Eurozone. Panoeconomicus,2014:61(2):193-206.
15. Monteiro A. A quick guide to financial ratios: Education. Personal Finance,2006(307):8-10.
16. Morakinyo AE, Sibanda M. The determinants of non-performing loans in the MINT economies. Journal of Economics and Behavioral Studies,2016:8(5(J):39-55.
17. Msomi TS. Factors affecting non-performing loans in commercial banks of selected West African countries. Banks and Bank Systems,2022:17(1):1-12.
18. Molyneux P, Fiordelisi F, Marques-Ibanez D. "Efficiency and Risk in European Banking." European Central Bank Working Paper Series, 2010, 1211.
19. Pradhan P, Shyam R, Pandey A. Bank specific and macroeconomic variables affecting non-performing loans of Nepalese commercial banks. RadheShyam and Pradhan, Prof. Dr. RadheShyam and Pandey, Anjana, Bank Specific and Macroeconomic Variables Affecting

Non-Performing Loans of Nepalese Commercial Banks, 2016.
20. Rajan R. Why bank credit policies fluctuate, The Quarterly Journal of Economics,1994:2(109):399-441.
21. Roman A, Şargu AC. Banks Liquidity Risk Analysis in the New European Union Member Countries: Evidence from Bulgaria and Romania. Procedia Economics and Finance,2014:15(14):569–576.
22. Salas V, Saurina J. Credit risk in two institutional regimes: Spanish commercial and savings banks. Journal of Financial Services Research,2002:22(3):203.
23. Shrestha SV. Non-performing loan and loan loss provision of commercial banks in Nepal, 2011.
24. Suryanto. Non-Performing Loans on Regional Development Bank in Indonesia and Factors that Influence. Mediterranean Journal of Social Sciences,2015:6(4):280-287.
25. Yulianti E, Aliamin A, Ibrahim R. The effect of capital adequacy and bank size on non-performing loans in Indonesian public banks. Journal of Accounting Research, Organization and Economics,2018:1(2):205-214.
26. Ahmad SY, Kushwaha BP. Potential of film–induced tourism and its impact on destination development. Prabandhan Guru, VII (1&2), Jan-Dec, 2016, 9-14.
27. Hasan N, Singh A, Agarwal M, Kushwaha BP. Evaluating the Role of Microfinance Institutions in Enhancing the Livelihood of Urban Poor, Journal of Economic and Administrative Sciences, Vol. ahead-of-print No. ahead-of-print, 2022. https://doi.org/10.1108/JEAS-09-2021-0175
28. Kaur G, Kushwaha BP. Essential Aspects for the Development of Women Entrepreneurial Intention in India. Journal of Contemporary Issues in Business and Government,2021:27(1):2381-2388.
29. Kushwaha BP, Kaur G, Singh N, Sharma A. Integrating Employees, Customers and Technology to Build an Effective Sustainable Marketing Strategy, International Journal of Sustainable Society,2022:14(4):310-322.
30. Kushwaha BP, Rao NS, Ahmad SY. The factors influencing consumer buying decision of electronic products. Management Dynamics,2015:15(1):5-15.
31. Kushwaha BP, Singh RK, Tyagi V. Investigating Privacy Paradox: Consumer Data Privacy Behavioural Intention and Disclosure Behaviour, Academy of Marketing Studies Journal,2021:25(1):1-10.
32. Kushwaha BP, Singh RK, Varghese N, Singh VN. Integrating social media and digital media as new elements of integrated marketing communication for creating brand equity. Journal of Content, Community and Communication,2020:11(6):52-64. DOI: 10.31620/JCCC.06.20/05
33. Kushwaha BP, Tyagi V, Shiva A. Investigating the role of reinforcement and environmental factors in balancing the state of apprehension: evidence from India. World Review of Entrepreneurship, Management and Sustainable Development,2021:17(2/3):142-160.
34. Kushwaha BP, Tyagi V, Singh RK. Impact of Message Design on Display Ads Involvement and Effectiveness: An Evidence from India, Int. J. of Management Practice,2021:15(4):532-547.
35. Kushwaha Dr. BP, Tiwari Dr. DN. Demonetization and digital initiative for inclusive social and financial growth. Kaav International Journal of Economics, Commerce & Business Management,2018:5(1):34-38.
36. "Kushwaha BP. Consumer behaviour in telecom industry: a study w.s.r.t. value added services. International Journal of Multidisciplinary Empirical Research,2015:2(1):13-23.
37. Rubel, Kushwaha. Increasing the Efficiency and Effectiveness of Inventory Management by Optimizing Supply Chain through Enterprise Resource Planning Technology, EFFLATOUNIA- Multidisciplinary Journal,2021:5(2):1739–1756.
38. Singh RK, Kushwaha BP. The Influence of Digital Media Marketing and Celebrity Endorsement on Consumer Purchase Intention, Journal of Content, Community & Communication,2021:14(7):145-158. DOI: 10.31620/JCCC.12.21/12.
39. Singh RK, Kushwaha BP, Tyagi V. Essential Aspects for the Development of Women Entrepreneurial Intention in India. Journal of Contemporary Issues in Business and Government,2021:27(1):2326-2339.
40. Kushwaha BP, Shiva A, Tyagi V. How Investors' Financial Well-being Influences Enterprises and Individual's Psychological Fitness? Moderating Role of Experience under Uncertainty. Sustainability,2023:15(2):1699.
41. Amin R, Kushwaha BP, Miah MH. The process optimization method of the optimal online sales model of information product demand concerning the spillover effect. Journal of International Logistics and Trade, 2023.
42. Kushwaha BP, Tyagi V, Singh RK. The effect of message design on banner ads involvement and effectiveness: a study on the Indian tourism industry. International Journal of Management Practice,2022:15(4):532-547.
43. Amiri AM, Kushwaha BP, Singh R. Visualisation of global research trends and future research directions of digital marketing in small and medium enterprises using bibliometric analysis. Journal of Small Business and Enterprise Development,2023:30(3):621-641.
44. Kushwaha BP, Miah MH. "Decision-making process of knowledge push service to improve organizational performance and efficiency: developing knowledge push algorithm", VINE Journal of Information and Knowledge Management Systems, 2023, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/VJIKMS-08-2022-0280
45. Pushparaj P, Kushwaha BP. Communicate your audience through Virtual Influencer: A Systematic Literature Review. Journal of Content, Community & Communication Amity School of Communication,2023:17(9):31-45.
46. Amin R, Kushwaha BP, Miah MH. The process optimization method of the optimal online sales model of information product demand concerning the spillover effect. Journal of International Logistics and Trade,2023:21(2):62-83.
47. Thakur J, Kushwaha BP. Artificial intelligence in marketing research and future research directions: Science mapping and research clustering using bibliometric analysis. Global Business and Organizational Excellence,2023:00:1–17. https://doi.org/10.1002/joe.22233
48. Singh RK, Kushwaha BP. The Influence of Digital Media Marketing and Celebrity Endorsement on Consumer Purchase Intention, Journal of Content, Community & Communication,2021:14(7):145-158. DOI: 10.31620/JCCC.12.21/12.