# The Influence of Non-Performing Loans on the Profitability of Nepal's National Level Development Bank

**Suraj Dahal***
**Rajesh Gurung****
**Rewan Kumar Dahal*****
**Binod Ghimire******

## ABSTRACT

The objective of this research is to evaluate the influence of non-performing loans on the profitability of Development banks in Nepal. To test the research hypothesis, secondary data were obtained from multiple sources, such as Banking and Financial Statistics, Bank Supervision Reports issued by the Nepal Rastra Bank, and annual reports of banks. In addition, descriptive and casual comparative research design method was used to analyze sample data of a total of 8 development banks operating at the national level. The findings of the study can help development banks to refine their risk management strategies.

**Keywords:** *Non-performing asset, ROA, EPS, Loan loss provision, Capital adequacy ratio*

* *Tribhuvan University, Nepal Commerce Campus, Kathmandu, Nepal, Email: dahalsuraj2050.sd@gmail.com*

** *Tribhuvan University, Faculty of Management, Nepal Commerce Campus, Kathmandu, Nepal, Email: rajeshgurung@ncc.edu.np*

*** *Tribhuvan University, Faculty of Management, Nepal Commerce Campus, Kathmandu, Nepal, Email: rewan.dahal@ncc.edu.np*

**** *Tribhuvan University, Faculty of Management, Nepal Commerce Campus, Kathmandu, Nepal, Email: bin.ghimire@ncc.edu.np*


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

# 1. INTRODUCTION

The percentage of loan values that have not been serviced for three months or more is referred to as non-performing loans. In essence, non-performing loans are a reflection of the banks' performance standards. According to Ariff et al. (2007) and Dahal (2022), a high level of NPL shows the high possibility of loss and net worth being impacted by numerous credit defaults, while a low level of NPL reflects the high probability of profit due to few credit defaults. Because NPL expansion lowers overall earnings and shareholder value, provisions are required (Karki et al., 2023). The likelihood that banks will have a financial crisis will increase if there is a high proportion of bank credit (Parul, 2012).

"A loan is non-performing," according to the International Monetary Fund (IMF), "when interest and/or principal payments are past due by 90 days or more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons such as a debtor filing for bankruptcy to doubt that payments will be made in full." According to the length of time that a loan has been past due, the Nepal Rastra Bank (Central Bank of Nepal) has divided loans into five categories: Standard, Watch-list, Sub-standard, Doubtful, and Loss or Bad Loan (NRB Unified Directives, 2022).

**Table 1 Loan Classification and provisions as per NRB Directives**

| Loan Classification | Meaning | Min. Provision |
|---|---|---|
| Pass Loan | Not overdue/Overdue up to 1 month | 1.3 % of loan |
| Watch list | Overdue up to 3 months<br>i.e. 1-3 months | 5% of loan |
| Sub-standard | Overdue up to 6 months<br>i.e. 3-6 months | 25% of loan |
| Doubtful | Overdue up to 1 year<br>i.e. 6-12 months | 50% of loan |
| Loss | Overdue for more than 1 year | 100% of loan |

*Source: www.sharegyannepal.com*

The main objective of the study is to examine the association between NPLs and the financial results of National Level Development banks in Nepal, investigating their impact on various financial indicators and performance metrics. The specific Objectives are to examine the relationship between CAR, Liquidity, bank size, NPL with ROE and EPS of National Level Development banks in order to assess the performance of the Bank in terms of Loan and Profitability. The research also focuses on determining the impact of CAR, Liquidity, and bank size position based on total assets and non-performing loans on the profitability of the banks determined by the return on assets and earnings per share (EPS).



https://www.nepjol.info/index.php/njmsr/index https://doi.org/10.53056/njmsr-2024.7.1.013

The rationale for this study is grounded in the need to comprehensively understand the intricate relationship between non-performing loans (NPLs) and the financial performance of National Level Development Banks in Nepal. After all, insights from this research can be used to make decisions and promote the long-term survival of Nepal's National Level Development Banks with the understanding of the interplay between NPLs and financial performance.

## 2. LITERATURE REVIEW AND HYPOTHESIS

Loans supplied by financial institutions, such as banks, that borrowers are not returning in accordance with the established terms and schedules, are referred to as "non-performing loans," or NPLs. These loans have essentially become problematic since the borrowers have either ceased making payments, are making payments irregularly, or are in danger of defaulting. Financial institutions are very concerned about NPLs since they might negatively affect the lender's stability and financial health (Gurung et al., 2023). In the financial sector, controlling and reducing non-performing loans is a crucial component of risk management.

Bhattarai (2003) discussed Non-Performing Assets (NPAs) in the context of loans in the banking sector. He highlights that loans are easy to grant but challenging to recover, drawing a parallel to rolling a stone up a hill. NPAs occur when loans are not repaid within the stipulated timeframe, and Bhattarai identifies various reasons for this, including inadequate security, non-realizable collateral, and conflicts of interest. The difficulties that banks have managing NPAs are highlighted in this article. Acharya (2013) concentrated on the effect of non-performing assets (NPAs) on the profitability of Nepalese commercial banks, with a focus on NABIL, HBL, and BOK. It highlights that while loans are profitable assets for banks, they also carry the risk of non-repayment. NPAs, which are loans not repaid on time, can significantly affect a bank's profitability. The study reveals alarming levels of NPAs in the Nepalese banking system and identifies a positive correlation between NPAs and profitability, contrary to the expected inverse relationship. It suggests recommendations to mitigate this issue and underscores the significance of effective risk management in banking.

Jolevski (2017) explored the connection between non-performing loans and various indicators of bank performance within the Republic of Macedonia from 2007 to 2015. Non-performing loans are seen as an important measure of credit portfolio quality. The study identified a negative correlation between non-performing loans and financial and liquidity positions. Additionally, it emphasized the negative impact of NPAs on bank profitability and financial stability by demonstrating a reasonably high negative connection between non-performing loans and return on equity. Nag's (2018) research examines how non-performing assets (NPAs) from 2012 to 2016 affected the profitability of Nepalese commercial banks. It investigated the connection between non-performing assets (NPAs) and profitability metrics, including return on assets (ROA) and return on equity (ROE). The study reveals that a rise in certain NPA indicators corresponds to an increase in profitability, while others lead to decreased profitability. Government-owned banks tend to have higher NPLs, while


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

joint venture and private banks perform better in managing NPLs. The study underscores the importance of prudent lending practices and proper loan recovery to prevent NPAs.

Tamang (2019) focused on the impact of non-performing loans (NPLs) on the profitability of commercial banks in Nepal. Four commercial banks over five fiscal years were studied and fluctuations in NPL trends among them. The study also identifies fluctuations in return on assets (ROA) and return on equity (ROE) across these banks. It emphasizes the significance of NPLs in influencing profitability and the importance of total lending in mitigating the effects of NPLs. The declining trend in NPLs suggests positive developments in the banking sector. Mahato (2021) examined the relationship between non-performing loans (NPLs) and profitability in five major commercial banks in Nepal. The research identifies a significant negative relationship between certain NPL indicators and return on equity (ROE), indicating that augmented NPLs result in diminished returns to shareholders. Additionally, it highlights the importance of managing NPLs effectively, maintaining liquidity, and focusing on a balanced loan portfolio to maximize return on assets.

Bhattarai (2022) explored the relationship between non-performing assets (NPAs) and key banking variables, such as deposits, loans, and firm size, in Nepalese commercial banks. It finds a significant negative correlation between NPAs and bank profitability indicators like return on assets (ROA) and return on equity (ROE), underlining the importance of lower NPAs for higher profitability. The study has emphasized the positive influence of total assets and deposits on profitability and provides recommendations for enhancing bank performance. Bashyal (2022) researched recent net profit trends and the impact of factors like Non-Performing Assets (NPA), Capital Adequacy Ratio (CAR), and Total Loan to Total Deposit (TLTD) on the return on assets (ROA) return on equity (ROE), and net profit of selected banks in Nepal. The study highlights that while NPAs, CAR, and TLTD have minimal impact on net profit and ROA they do affect ROE. The recommendations include improving NPA management and maintaining asset quality to enhance bank performance.

Previous research has primarily concentrated on examining the non-performing loan (NPL) patterns of individual commercial banks, leaving unexplored the potential for more comprehensive analysis including the development banking sector. There exists a necessity for conducting comprehensive, industry-wide inquiries in order to unveil enduring non-performing loan (NPL) trends and their interplay with macroeconomic variables. In addition, conducting research on risk management techniques, conducting comparative analyses among various financial institutions, gathering qualitative insights, examining policy implications, and assessing the influence of external factors would greatly enhance our comprehension of non-performing loans (NPLs) and profitability in banks in Nepal. The existence of these gaps provides a promising avenue for future research, which might yield valuable insights to guide decision-making processes for policymakers, regulators, and banking institutions operating in Nepal.

## 2.1 Non-Performing Loan and Liquidity Ratio

Credit risk stands as a critical domain within the realm of risk management, carrying

significant importance, particularly for financial institutions like banks. Indicators of credit risk include metrics like non-performing loan ratios and Liquidity Ratio. Non-performing loans are those Loans that borrowers have failed to repay as per the agreed terms, leading to financial instability for the lender. Liquidity Ratio is a measure of a company's ability to meet short-term obligations using its most liquid assets. Larger banks tend to experience reduced Return on Assets (ROA) and Earnings per Share (EPS) due to potential complexities and inefficiencies associated with their size. Non-performing loan variables, such as non-performing loan-to-total loan ratios, liquidity ratios, and bank size, have a negative relationship with ROA and EPS (Gnwali, 2018; Ghimire, 2022). Following the preceding discussion, the following hypothesis has been formulated:

*$H_1$: NPL, Bank Size and Liquidity ratio are positively related to ROA and EPS.*

### 2.2 Capital Adequacy Ratio and Total Loan to Deposit Ratio

The capital adequacy ratio measures a bank's ability to satisfy its risk-related obligations. The total loan to Total deposit (TLTD) ratio measures bank liquidity by determining the proportion of a bank's deposits that have been converted into loans. Gnwali (2018) concludes that the capital adequacy ratio (CAR) and the firm's total loan-to-deposit ratio (TLTD) have a positive correlation with the firm's profitability, as measured by ROA and EPS. Following the preceding discussion, the following hypothesis has been formulated:

*$H_2$: CAR and TLTD have a positive relationship with profitability, i.e. ROA and EPS.*

## 3. RESEARCH METHODOLOGY

This research has analyzed secondary data obtained from 8 national-level development banks in Nepal, encompassing both government and non-government institutions. The key data sources are the annual reports of the banks, the Banking and Financial Statistics, and the Bank Supervision Reports issued by Nepal Rastra Bank. From 2018 through 2022, the data was gathered and analyzed using a descriptive study approach. All banks were chosen as a sample from among the eight national-level development banks based on subjective standards. Excel was used to examine the data using statistical techniques like mean, standard deviation, correlation, and regression analysis. Lists of the banks chosen for the study, together with the amount of observations, are shown in Table 2.

**Table 2 List of sample banks along with the study period and number of observations**

| S. No | Name of the Bank | Total observation |
|---|---|---|
| 1 | Muktinath Bikas Bank Limited | 5 |
| 2 | Mahalaxmi Bikas Bank Limited | 5 |
| 3 | Garima Bikas Bank Limited | 5 |
| 4 | Jyoti Bikas Bank Limited | 5 |
| 5 | Shangri-la Development Bank Limited | 5 |


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

| | | |
|---|---|---|
| 6 | Lumbini Bikas Bank Limited | 5 |
| 7 | Shine Resunga Development Bank Limited | 5 |
| 8 | Kamana Sewa Bikas Bank Limited | 5 |

Model of the Study

Model I

$$Y_{EPS} = \beta 0 + \beta 1 \times NPL + \beta 2 \times Liquidity + \beta 3 \times CAR + \beta 4 \times TLTD + \beta 5 \times LnTL + \beta 6 \times LnTA$$

Model II

$$Y_{ROA} = \beta 0 + \beta 1 \times NPL + \beta 2 \times Liquidity + \beta 3 \times CAR + \beta 4 \times TLTD + \beta 5 \times LnTL + \beta 6 \times LnTA$$

Where,

NPL= Non-Performing Loan

CAR= Capital Adequacy Ratio

TLTD = Total Loan to Deposit Ratio

LnTL= Natural Logarithm of Total Loan

LnTA= Natural Logarithm of Total Assets

***Return on Assets (ROA)***

ROA is a financial ratio that gauges a company's asset profitability. It indicates the effectiveness with which a company utilizes its assets and generates profits. Return on assets (ROA) assesses the efficiency with which a company generates profits from its available assets. It is an essential financial metric for assessing a company's operational efficacy and the utilization of its resources. A higher ROA indicates that a company is more efficient at generating profits from its assets, whereas a lower ROA indicates less efficiency (Brealey et al., 1984).

***Earnings per Share (EPS)***

EPS is a crucial financial metric that represents the proportion of a company's profit allocated to each outstanding share of its common stock. It is commonly used by investors and analysts to evaluate a company's profitability per share, making it easier to compare companies of various sizes and track a company's performance over time. Earnings per share (EPS) represents the portion of a company's net income that is allocated to each outstanding share of common stock. It is determined by dividing the net income available to common shareholders by the average number of outstanding shares during a given period (Brigham & Houston, 2021).

***Non-Performing Loan (NPL)***

NPL refers to a loan that a borrower has stopped making payments on, typically due to financial difficulties. It is a loan that has become delinquent and is in default, posing a risk to the lending institution. When a loan becomes non-performing, the borrower has failed to

meet their scheduled interest and principal payments for a specified period, and the lender may need to take actions to recover the outstanding amount, which could include selling off collateral or initiating legal proceedings (Cassis et al., 2016).

***Liquidity Ratio***

Cash Reserve Ratio (CRR) or Liquidity Ratio is the proportion of a bank's total deposits that it is mandated to maintain as cash reserves with the central bank. It is a tool used by the central bank to regulate the liquidity in the banking system, control inflation, and influence the money supply in the economy. The requirement for banks to maintain a certain percentage of their total deposits as cash reserves ensures that they have enough liquidity to meet withdrawal requests from customers and helps the central bank in controlling the money supply (Khan, 2019).

***Capital Adequacy Ratio (CAR)***

CAR is a financial metric utilized to assess the stability and integrity of a financial institution or bank. It quantifies the ratio between a bank's capital and its risk-weighted assets. This ratio is crucial for ensuring that banks have enough capital to absorb losses and withstand economic downturns, thereby protecting depositors and maintaining overall financial system stability (Ong, 2017).

***Total Loan to Total Deposit Ratio (TLTD Ratio)***

TLTD is a financial metric used to assess the financial health and risk profile of a bank or financial institution. It measures the proportion of a bank's loans to its total deposits, providing insights into the institution's lending practices, liquidity, and ability to manage risks. This ratio indicates how much of the funds deposited with a bank are being lent out as loans. A higher TLTD ratio may suggest that the bank is more aggressive in its lending activities, potentially leading to higher profits but also higher risks. Conversely, a lower TLTD ratio indicates that the bank is more conservative in its lending approach, focusing on maintaining a larger portion of its deposits as reserves (Wiley & Sons, 2012).

***Natural Logarithm (Ln)***

The natural logarithm (often denoted as "Ln") is a mathematical function that is the inverse of the exponential function. It's commonly used in various fields, including finance and economics, to model exponential growth or decay. When we take the natural logarithm of a value, we're essentially asking, "To what power must the base 'e' (approximately 2.71828) be raised to get the original value?" In the context of a "total loan," the natural logarithm of the total loan amount is taken to analyze the growth or compounding effect of the loan amount over time.

## 4. RESULTS AND DISCUSSION

This study is based on secondary data obtained from multiple sources, such as Banking and Financial Statistics, Bank Supervision Reports issued by the Nepal Rastra Bank, and annual reports of banks of a total of 8 development banks operating at the national level.


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

## 4.1 Descriptive Analysis

During the specified time frame, descriptive statistics were computed for the chosen dependent and independent variables.

**Table 3 Descriptive Statistics of selected dependent and independent variables**

| Variables | N Stat. | MIN | Max | Mean | Std. Dev | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| ROA | 40.00 | 0.02 | 2.07 | 1.26 | 0.41 | (0.61) | 1.52 |
| EPS | 40.00 | 4.71 | 28.38 | 17.78 | 5.13 | (0.11) | 0.21 |
| NPL | 40.00 | 0.00 | 3.92 | 1.30 | 1.00 | 0.78 | 0.01 |
| Liquidity | 40.00 | 3.10 | 31.21 | 12.14 | 10.55 | 0.60 | (1.59) |
| CAR | 40.00 | 11.19 | 21.58 | 14.58 | 2.49 | 0.87 | 0.32 |
| TLTD | 40.00 | 77.77 | 103.97 | 85.63 | 5.12 | 1.70 | 4.25 |
| Total Loan | 40.00 | 11,667 | 89,539 | 32,925 | 16,872 | 1.42 | 2.63 |
| Bank Size | 40.00 | 16,658 | 121,083 | 45,771 | 21,884 | 1.45 | 2.90 |

Table 3 shows the descriptive statistics of dependent and independent variables. In analysing various financial metrics for a sample of 40 data points, several key observations stand out. Return on Assets (ROA) demonstrates a range from 0.02 to 2.07, with an average of 1.26 and a moderate dispersion of 0.41. It exhibits a left-skewed distribution (-0.61) and moderately heavy tails (1.52). Earnings per Share (EPS) data, comprising 40 observations, range from 4.71 to 28.38, with an average of 17.78 and a standard deviation of 5.13. It also has a left-skewed distribution (-0.11) and a nearly normal tail heaviness (0.21). Non-Performing Loans (NPL) data, with a mean of 1.30 and a standard deviation of 1.00, is positively skewed (0.78) but nearly normal-tailed (0.01). Liquidity data, with an average of 12.14 and a standard deviation of 10.55, exhibits positive skewness (0.60) and thinner tails compared to normal distribution (-1.59). Total Loan data is right-skewed (1.42) with heavier tails (2.63), ranging from 11,667 to 89,539 and an average of 32,925. Total Assets (Bank Size) data, spanning 16,658 to 121,083 with an average of 45,771 and a standard deviation of 21,884, displays right-skewed distribution (1.45) and relatively heavier tails (2.90).

## 4.2 Correlation Analysis

After presenting the descriptive statistics, the coefficients of Pearson correlation are determined, and the results are displayed in the table below. It displays the correlation values for development banks in particular.

**Table 4 Pearson correlation matrix for selected Development Banks**

| Variables | ROA | EPS | NPL | Liquidity | CAR | TLTD | LnTL | LnTA |
|---|---|---|---|---|---|---|---|---|
| ROA | 1.000 | | | | | | | |
| EPS | 0.542 | 1.000 | | | | | | |
| NPL | 0.021 | (0.186) | 1.000 | | | | | |
| Liquidity | (0.235) | (0.192) | (0.244) | 1.000 | | | | |
| CAR | 0.167 | (0.295) | 0.100 | (0.065) | 1.000 | | | |


https://www.nepjol.info/index.php/njmsr/index https://doi.org/10.53056/njmsr-2024.7.1.013

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| TLTD | 0.186 | 0.192* | 0.225 | (0.229) | 0.191 | 1.000 | | |
| LnTL | (0.098) | 0.379 | (0.070) | (0.011) | (0.621) | (0.191) | 1.000 | |
| LnTA | (0.128) | 0.329 | (0.054) | 0.076 | (0.637) | (0.238) | 0.980 | 1.000 |

*is correlation is significant at 0.10 level (2-tailed)

Table 4 demonstrates a perfect positive correlation between ROA and itself. ROA is positively correlated with EPS. There is a weak negative correlation between NPL and EPS, and a faint positive correlation between NPL and ROA. There is a negative correlation between liquidity and EPS, ROA, and NPL. CAR is correlated positively with ROA and negatively with EPS. TLTD correlates positively with ROA, EPS, and NPL, and negatively with CAR. LnTL is correlated positively with EPS and negatively with CAR. LnTA is correlated positively with EPS and negatively with CAR.

### 4.3 Regression Analysis

**Table 5 Regression Coefficient of EPS with independent variables for all samples**

| Variables | *Coefficients* | *Standard Error* | *t Stat* | *P-value* |
|---|---|---|---|---|
| Constants | (29.4198) | 33.8213 | (0.8699) | 0.3907 |
| NPL | (1.2621) | 0.8022 | (1.5732) | 0.1252 |
| Liquidity | (0.0787) | 0.0822 | (0.9574) | 0.3453 |
| CAR | (0.2959) | 0.3888 | (0.7611) | 0.4520 |
| TLTD | 0.2822 | 0.1580 | 1.7859 | 0.0833* |
| LnTL | 7.2725 | 8.9099 | 0.8162 | 0.4202 |
| LnTA | (4.2196) | 9.8326 | (0.4291) | 0.6706 |
| Multiple R | 0.558175479 | R Square | 0.311559865 | F-Stat=2.49 |
| Adj. R Square | 0.186388931 | Significance F | 0.042577299 | N=40 |

A panel data analysis involving 8 development banks over the 2018-2022 period utilised a multivariate regression model. Table 5 presents the results, illuminating coefficients, standard errors, t-stats, and p-values for various independent variables. Notably, "NPL," "Liquidity," "CAR," and "LnTA" were statistically insignificant ($p > 0.05$), while "TLTD" bordered significance ($p \approx 0.0833$). The model explained 31.2% of the variance (R Square = 0.312), with an overall fit indicated by an adjusted R-squared of 0.1864. An F-statistic of 2.49 implied statistical significance, with a p-value of 0.0426 in a sample size of 40. The regression equation is:

2621×NPL+0.0787×Liquidity+0.2959×CAR+0.2822×TLTD+7.2725×LnTL+4.2196×LnTA

**Table 6 Regression Coefficient of ROA with independent variables for all samples**

| Variables | Coefficients | Standard Error | t Stat | P-value |
|---|---|---|---|---|
| Constant | 0.273 | 3.088 | 0.088 | 0.930 |
| NPL | (0.028) | 0.073 | (0.387) | 0.701 |
| Liquidity | (0.008) | 0.008 | (1.074) | 0.290 |
| CAR | 0.022 | 0.035 | 0.632 | 0.532 |
| TLTD | 0.010 | 0.014 | 0.689 | 0.495 |


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

| | | | | |
|---|---|---|---|---|
| LnTL | 0.068 | 0.813 | 0.083 | 0.934 |
| LnTA | (0.071) | 0.898 | (0.079) | 0.937 |
| Multiple R | 0.308979208 | R Square | 0.095468151 | F-Stat=0.58 |
| Adj. R Square | -0.068992185 | Significance F | 0.743128948 | N=40 |

Using a multivariate regression model, this result is derived from panel data of 8 development banks containing 40 observations for the period of 2018 to 2022. This table displays the results of a regression analysis between the dependent variable and the independent variables. Relationships between Return on Assets (ROA) and the independent variables Non-Performing Loans (NPL), Liquidity, Capital Adequacy Ratio (CAR), Total Liabilities to Total Deposits (TLTD), Natural Logarithm of Total Liabilities (LnTL), and Natural Logarithm of Total Assets (LnTA) are displayed in Table 6. None of the coefficients are statistically significant, as indicated by their high p-values, suggesting that these independent variables do not strongly predict changes in ROA. The overall model's explanatory power is limited, with a low R-squared value of 0.095, and the adjusted R-squared value is negative, implying poor model fit. The F-statistic and its associated p-value suggest that the model's overall significance is questionable in a sample size of 40.

The regression equation is:

$$Y_{ROA}=0.273+0.028\times NPL-0.008\times Liquidity+0.022\times CAR+0.010\times TLTD+0.068\times LnTL -0.071\times LnTA$$

## 4. DISCUSSION AND CONCLUSIONS

This study analysed a five-year Sample Development dataset spanning fiscal years 2017/18 to 2021/22. Examining the relationships between key financial variables such as Return on Asset ratio (ROA), Earnings per Share (EPS), Non-Performing Loan ratio (NPL), Liquidity ratio, Capital Adequacy Ratio (CAR), Total Loan to Deposit ratio (TLTD), Total Loan, and Total Assets, the study employed descriptive analysis, correlation analysis, and regression analysis.

The regression coefficients for the relationship between Return on Assets (ROA) and various independent variables in a sample of 40 observations reveal several findings. The constant term is not statistically significant at a 5% level, indicating that it does not have a significant impact on ROA. Similarly, variables such as Non-Performing Loans (NPL), Liquidity, CAR (Capital Adequacy Ratio), TLTD (Total Liabilities to Total Deposits Ratio), LnTL (Natural Log of Total Liabilities), and LnTA (Natural Log of Total Assets) do not show significant relationships with ROA, as their coefficients and t-statistics are not statistically significant. The R-squared value for this regression is low (0.095), suggesting that the independent variables collectively explain only a small portion of the variation in ROA. In contrast, the regression coefficients for the relationship between Earnings per Share (EPS) and the same independent variables in the same sample indicate a different pattern. The constant term is not statistically significant, but variables such as NPL, Liquidity, CAR, and TLTD do not



*https://www.nepjol.info/index.php/njmsr/index* https://doi.org/10.53056/njmsr-2024.7.1.013

show significant relationships with EPS. However, TLTD has a coefficient that is statistically significant at the 10% level, suggesting a potential influence on EPS. The R-squared value for this regression is higher (0.312) compared to the ROA regression, indicating that the independent variables collectively explain a larger portion of the variation in EPS. The findings of the study are consistent with earlier research (Bashyal, 2022), which confirms that while NPAs, capital adequacy, and loan ratios have minimal impact on net profit and ROA, they do influence EPS.

The correlation and regression results using ROA (Return on Assets) and EPS (Earnings per Share) as predictor variables reveal various expected and reported relationships. For ROA, NPL (Non-Performing Loans) was expected to have a positive relationship but was found to be not significant. Bank Size was expected to have a positive relationship but had a negative reported relationship, also not significant. The findings of the study are contrary to the findings of (Bhattarai, 2022), which confirm a significant negative correlation between non-performing assets and profitability and positive correlations with total assets, total deposits, and bank size. Liquidity Ratio was expected to have a positive relationship but showed a negative reported relationship, again not significant. CAR (Capital Adequacy Ratio) and TLTD (Total Liabilities to Total Deposits) both had expected positive relationships but were not significant. The findings were inconsistent with earlier research ((Nag, 2018; Mahato, 2021), which identifies a negative relationship between certain non-performing loan indicators like NPL, CAR, TLTD and return on equity, highlighting the importance of managing NPAs. For EPS, NPL was expected to have a positive relationship but had a negative reported relationship, not significant. Bank Size was expected to have a positive relationship and showed a positive reported relationship, also not significant. Liquidity Ratio had an expected positive relationship but reported negative, not significant. CAR and TLTD had expected positive relationships but reported negative and positive, respectively, with TLTD being significant at the 10% level.

The finding of the study is consistent with earlier research (Bashyal, 2022), indicating that factors like Non-Performing Assets (NPAs), capital adequacy, and loan ratios have minimal impact on net profit and ROA but do influence EPS. However, it is important to note that these findings deviate from those of other studies (Bhattarai, 2022; Nag, 2018; Mahato, 2021), which reported significant correlations between NPAs, various financial ratios, and profitability measures. This disparity highlights the complexity of these relationships and underscores the need for further research to understand better the specific dynamics at play in different types of financial contexts.

The findings revealed several interesting insights. Firstly, there was an unexpected positive correlation between NPL and ROA, while NPL was negatively correlated with EPS, consistent with the hypothesis. Bank size displayed a negative relationship with ROA, contrary to the hypothesis, but a positive relationship with EPS, in line with the hypothesis. Liquidity Ratio showed consistent negative correlations with both ROA and EPS. CAR had a negative relation with EPS and a positive relation with ROA, as anticipated. TLTD showed a positive


https://doi.org/10.53056/njmsr-2024.7.1.013 https://www.nepjol.info/index.php/njmsr/index

relationship with profitability metrics, ROA and EPS. The finding of the study is consistent with earlier research (Bashyal, 2022), indicating that factors like Non-Performing Assets (NPAs), capital adequacy, and loan ratios have minimal impact on net profit and ROA but do influence EPS. However, it's important to note that these findings deviate from those of other studies (Bhattarai, 2022; Dahal, 2021; Nag, 2018; Mahato, 2021; Pant et al., 2022), which reported significant correlations between NPAs, various financial ratios, and profitability measures. This disparity highlights the complexity of these relationships and underscores the need for further research to understand better the specific dynamics at play in different types of financial contexts.

In conclusion, this study underscores the importance of data analysis and interpretation. It provides a foundation for understanding the dynamics within Sample Development banks. It sheds light on the complex relationships between these variables, offering insights into their impact on key financial indicators. This study offers key implications and recommendations for improving bank management and profitability. Firstly, addressing Non-Performing Loans (NPLs) is crucial, suggesting the adoption of modern credit risk management strategies. Banks should gather comprehensive data on variables, especially NPLs, to make informed decisions. A deep understanding of financial indicators like ROA, EPS, capital adequacy, and cash reserve ratio in relation to NPL is essential. Effective NPL management can enhance financial services access for marginalized groups, necessitating capacity building in areas such as credit risk assessment and loan recovery for development banks. High NPLs can harm investor confidence, making it vital for stakeholders to understand investment and credit risks. Additionally, this study informs Nepali policymakers about regulations and policies, possibly leading to adjustments. It serves as a foundation for further research, aiding banks in refining risk management strategies based on NPL factors.



*https://www.nepjol.info/index.php/njmsr/index* https://doi.org/10.53056/njmsr-2024.7.1.013

# REFERENCES


Ariff, M., Skully, M. T., & Ahmad, R. (2007). Factors determining mergers of banks in Malaysia's banking sector reform. *Multinational Finance Journal, 11(1/2),* 1–31.

Alshiqi, S., & Sahiti, A. (2021). Risk management and profitability of commercial banks in Western Balkan countries of Kosovo, Albania, North Macedonia, and Serbia. *Journal of Eastern European and Central Asian Research*, *8(1), 81–88.* https://doi.org/10.15549/jeecar.v8i1.633.

Bashyal, S. (2022). Non-performing assets and profitability of Commercial Banks in Nepal. *Unpublished master's thesis.* Tribhuvan University, Nepal.

Bhattarai, K. H. (2022). Non-performing assets & profitability analysis of Nepalese Commercial Banks. *Unpublished master's thesis.* Tribhuvan University, Nepal

Brigham, E. F., & Houston, J. F. (2021). *Fundamentals of financial Management (16th ed.).* Thomson/South-Western.

Cassis, Y., Grossman, R. S., & Schenk, C. R. (Eds.). (2016). *The oxford handbook of banking and financial history*. Oxford University Press.

Dahal, R. K. (2018). Management accounting and control system. *NCC Journal, 3(1),* 153–166. https://doi.org/10.3126/nccj.v3i1.20258.

Dahal, R. K. (2021). Application of management accounting techniques in the Nepalese manufacturing firms. *Nepal Journal of Multidisciplinary Research, 4(4),* 53–62. https://doi.org/10.3126/njmr.v4i4.43209 .

Dahal, R. K. (2022). Individual investors in the Nepalese securities market: What they know and what they like. *Nepal Journal of Multidisciplinary Research, 5(4),* 71–81. https://doi.org/10.3126/njmr.v5i4.49837.

Garr, D. K. (2013). Determinants of credit risk in the banking industry of Ghana*. Journal of Finance, 3(11), 64–67.*

Ghimire, B. (2022). Dividend payout decision and investors' behavior. *SMS Journal of Entrepreneurship and Innovation, 8(1),* 1–11. https://doi.org/10.21844/smsjei.v8i01.30001.

Ghimire, B., Rai, B., & Dahal, R. K. (2021). Corporate culture and organizational performance in the banking industry of Nepal. *Management Dynamics, 24(2),* 1–8. https://doi.org/10.3126/md.v24i2.50031.

Gnawali, A. (2018). Non-performing asset and its effects on profitability of Nepalese commercial banks. *International Journal of Research in Business Studies and Management, 5(9),* 39–47.

Gurung, R., Dahal, R. K., Ghimire, B., & Sharma, J. (2023). Drivers of mutual fund pricing of the Nepalese stock market. *Hong Kong Journal of Social Sciences, 62*(Autumn/Winter), 2023, 152–162. https://doi.org/10.55463/hkjss.issn.1021-3619.62.15.

Jolevski, L. (2017). The impact of the non-performing loans on banks' performance: The case of the Republic of Macedonia. *EMC Review - Časopis za ekonomiju – APEIRON, 14(2),* 5–20. http://dx.doi.org/10.7251/EMC1702184J.

Karki, D., Bhattarai, G., Dahal, R. K., & Dhami, K. (2023). Should income be diversified? A dynamic panel data analysis s of Nepalese depository financial institutions. *Investment Management and Financial Innovations, 20(3),* 332-343. http://dx.doi.org/10.21511/imfi.20(3).2023.28.

Karn, P. (2013). Non-performing assets and profitability of Himalayan Bank Limited and Bank of Kathmandu Limited. *Unpublished master's thesis.* Tribhuvan University, Nepal.

Khan, M. Y. (2019). *Indian financial system.* Tata McGraw-Hill Education.

Mahato, S. K. (2021). Non-performing assets and its effect on profitability of Nepalese commercial banks (with reference to ADBL, NIBL, GIBL, EBL, and NIC Asia Bank). *Unpublished master's thesis.* Tribhuvan University, Nepal.

Nag, S. (2018). Impact of non-performing assets on the profitability of Nepalese Commercial Banks. *Unpublished master's thesis.* Tribhuvan University, Nepal.

Niroula, A. (2012). Financial performance analysis of commercial banks (With special reference to Standard Chartered Bank Nepal Limited, Everest Bank Limited, NABIL Bank Limited, and Nepal Investment Bank Limited). *Unpublished master's thesis.* Tribhuvan University, Nepal.

Nepal Rastra Bank Directives. (2022). *Banking and financial statistics*. Retrieved from: www.nrb.org.np.

Ong, M. K. (2017). *The basel handbook*: *A guide for financial practitioners (2nd ed.).* Risk Books.

Pant, R., Ghimire, B., & Dahal, R. K. (2022). Determinants of mutual fund performance in Nepal. *Nepal Journal of Multidisciplinary Research, 5(5),* 1–16. https://doi.org/10.3126/njmr.v5i5.51798.

Serwa, D. (2013). Measuring non-performing loans during (and after) credit booms*. Central European Journal of Economic Modelling and Econometrics*, *5(3), 163–183.* Retrieved from: https://ideas.repec.org/a/psc/journl/v5y2013i3p163-183.html.

Shrestha, R. (2019). Impact of credit risk management on profitability of Nepalese Commercial Banks. *Unpublished master's thesis*. Tribhuvan University, Nepal.

Tamang, A. Y. (2019*).* Impact of non-performing loan on the profitability of commercial banks in Nepal. *Unpublished master's thesis.* Tribhuvan University, Nepal.

Wadhwa, R., & Ramaswamy, K. (2020). Impact of NPA on the profitability of banks. *International Journal of Engineering Technology and Management Sciences, 4(3),* 1–8 http://dx.doi.org/10.46647/ijetms.2020.v04i03.001.