



## Credit risk management and its impact on performance of commercial banks: With reference to Nepal

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### Abstract

The purpose of this study is to investigate the effect of credit risk management on financial performance of commercial banks in Nepal. This study applies the Pooled Ordinary Least Square estimator on balanced panel data of ten commercial banks over the period 2012-2021. The study uses CAR, NPLR, CDR, MQR and BS as credit risk indicators and ROA as financial performance indicator. The study finds that CAR, NPLR, and BS have positive and insignificant effect and negative and insignificant effect of CDR with ROA. Similarly, there is positive significant effect of MQR with ROA. The findings indicate that credit risk management has significant impact on financial performance of commercial banks of Nepal. Therefore, the success of the banks in terms of financial performance depends on credit risk management.

**Keywords:** return on asset, capital adequacy ratio, non- performing loan ratio, credit to deposit ratio, management quality ratio and bank size.

### Introduction

Credit is generally defined as a contractual agreement in which a borrower receive something of value now and agrees to repay the lender at a later date generally with interest. Sometimes, it may even include crediting a for instance. Credit also refers to the credit worthiness or credit history of an individual or company. It also refers to an accounting entry that either decreases assets or increases liabilities and equity on a company's financial statement (Kenton, 2020) [9].

Default in credit occurs due to many factors and at several times the default could be deliberate. The quantification of credit risk and its management therefore poses some challenges. Statistical tools like probability of default, exposure at default and maturity are extensively used to measure the credit risk. Credit risk in banking relates to the possibility that loans will not be paid or that investments will deteriorate in quality or go into default with resultant loss to the bank Balaraman (2010). Furthermore, Balaraman argues that Bank is investing a lot of funds in credit risk management modeling. Credit risk management encompasses identification, measurement, monitoring and control of the credit risk exposures. The effective management of credit risk is a critical component of comprehensive risk management and essential for the long term success of a banking organization.

In banks, the issue of credit risk is greater concern because of the higher levels of risk resulting from some of the characteristics of clients and business conditions that they find themselves in. Credit risk management is very important to bank as it is an integral part of the loan process. It maximizes bank risks, adjusted risk rate of return by maintaining credit risk exposure with view to shielding the bank from the adverse effects of credit risk Bari (2015) [3].

There is necessity to examine whether this investment in credit risk management is worthwhile to the banks. The general objective of this study is to examine the effect of

credit risk management on financial performance of commercial banks in Nepal. Various studies as capital adequacy ratio and bank size have negative and statistically insignificant impact on the financial performance of the commercial banks in Nepal. Credit to deposit ratio has positive but insignificant relationship with the financial performance (Chhetri, 2021) [4]. In order to reduce risk on loans and achieve maximum performance, the banks need to allocate more funds to default rate management and try to maintain just optimum level of capital adequacy (Poudel, 2012) [40]. While there are several strategies of addressing the problem of instability and efficiency, the research attempts to investigate the factors that influence the determination of the banks' credit risk (Garr, 2013). To the best of my knowledge, there is not sufficient and detail studies have been conducted to explore the impact of credit risk management and financial performance of commercial banks in Nepal. This research aims to fill a gap in research as the first complete study in effective credit risk management.

### Review of literature

This section presents the theoretical and empirical evidences regarding financial performance. This section is divided into three sub-sections. The first parts focused on the theoretical aspects, second part presents the review of empirical evidences and in the third section research variables and prior hypothesis formulated in the study were stated.

### Theoretical review

The current study is linked to the following theories that explain the theoretical framework of the banks' performance and its determinants:

The commercial loans theory or the so-called real bills doctrine theory is the oldest theory of the basic business activities of banks, which states that banks should only grant self-liquidating short-term loans and commercial papers to

clients (Hosna & Manzura, 2009), the theory of commercial loans is designed to guide banks and influence them logically and convincingly about the banking lending process and general economic activities.

The Anticipated Income theory was proposed by H.V. Prochanow in 1944 since the practice of extending term loans by the USA commercial banks. In 1949, Prochanow conducted a comprehensive study on loans and bank assets through which he developed a new theory on loans called "Anticipated Income Theory". Soyibo, *et al.* (2004) stated that the anticipated theory focuses mainly in the long-term loans and advances. In a study carried out by (Afriyie & Akotey, 2011) concluded that regardless of the borrower's character and his business nature, the Bank plans to repay borrowers their loans through their expected profits and not by monetizing or selling their assets as in the commercial loans theory or by transferring or selling existing loans to other lenders.

The credit risk theory indicates the risk that the lender will be delayed or defaulting on the installments or interests owed to him or both to the borrower, where the risk is that the lender will be exposed to financial distress after which he cannot return deposits to their owners or meet his other obligation due to the loss of capital and interest and the lender's exposure to significant losses resulting from borrowers not paying their obligation to lenders, which is now called non-performing loans (Zaidanin, 2021).

### Empirical Evidences

Gakure, Ngugi, Ndwiwa and Waithaka (2012) <sup>[5]</sup> examined the effect of credit risk management techniques on the banks' performance of unsecured loans. They concluded that financial risk in a banking organization might result in imposition of constraints on bank's ability to meet its business objectives.

Njanike (2009) <sup>[37]</sup> conducted the research on the impact of effective credit risk management on bank survival and found that the absence of effective credit risk management led to occurrence of the banking crisis, and inadequate risk management systems caused the financial crisis.

Bhattarai (2016) analysed the effect of credit risk on performance of Nepalese commercial banks and the regression results revealed that 'non-performing loan ratio' has negative effect on bank performance whereas 'cost per loan assets' has positive effect on bank performance, and bank size has positive effect on bank performance.

Kurawa and (2014) <sup>[13]</sup> studied on the title "effect of credit risk management on the profitability of Nigerian banks" and concluded that credit risk management components have a significant positive effect on the profitability of Nigerian banks.

Poudel (2020) examined the impact of credit risk management on financial performance of commercial banks in Nepal and he found that default rate, cost per loan assets and capital adequacy ratio have an inverse impact on banks financial performance. Bari (2015) <sup>[3]</sup> also found same result in the context of Ethiopia.

Yimka *et al.*, (2015) <sup>[49]</sup> examined the effect of credit risk management and financial performance of selected commercial banks in Nigeria and he founds that the lower the proportion of nonperforming loans and advances to provision for loans and advances losses, the better the financial performance and proportion of nonperforming loans and advances to total loans and advances exerts greater negative effect than proportion of provision for loans and advances losses to total loans and advances.

### Study variables and hypotheses

The dependent variable and independent variables used in this study are as follows:

#### Dependent variable

This study has used ROA as dependent variable to represent bank performance.

#### Return on assets (ROA)

Return on assets is the ratio of net income and total assets of any institutions. It measures the efficiency of the banks management in generating profits out of its scarce resources. Return on assets ratio is important profitability ratio because it measures the efficiency with which the company is managing its investment in assets and using them to generate profit. A basic measure of bank profitability that corrects the size of the bank is the return on assets (ROA), which divides the net income of the bank by the amount of its assets. Return on Assets is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profit (Chhetri, 2021) <sup>[4]</sup>.

#### Independent variables

##### Capital adequacy ratio (CAR)

The capital adequacy ratio is a measure of a bank's capital. It is expressed as a percentage of a bank's risk weighted credit exposures. It is also known as capital to risk weighted assets ratio, it is used to protect depositors and promote the stability and efficiency of financial systems around the world. Two types of capital are measured: tier one capital, which can absorb losses without a bank being required to cease trading, and tier two capital, which can absorb losses in the event of a winding up and so provides a lesser degree of protection to depositors (Upadhyay, 2020) <sup>[47]</sup>.

**H<sub>1</sub>:** Capital adequacy ratio has a significant and positive effect on bank performance.

##### Non-performing loan ratio (NPLR)

A non-performing loan is the sum of borrowed money upon which the debtor has not made his scheduled payments for at least 90 days. It is either in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can depend on the contract terms. According to International monetary fund, (1944), "A loan is nonperforming when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full". By bank regulatory definition, nonperforming loans consist of:

- Loans that are 90 days or more past due and still accruing interest, and
- Loans which have been placed on nonaccrual (i.e, loans for which interest is no longer accrued and posted to the income statement).

**H<sub>2</sub>:** Non-performing loan ratio has a significant and negative effect on financial performance.

**Credit to deposit ratio**

Credit to deposit ratio is a ratio between the banks total deposits and total loans. It is also known as loan to deposit ratio. It is the ratio of how much a bank lends out of the deposit it has mobilized. If the ratio low i.e. lower than one, the bank may not be earning as much as it could be. In other word the bank relied on its own deposits to make loans to its customers, without any outside borrowing. If on the other hand, the ratio is high i.e. greater than one, the bank may not have enough liquidity to cover any unforeseen fund requirements or economic crisis. In other words, the bank borrowed money which it re- loaned at higher rates, rather than relying entirely on its own deposits. It is a commonly used statistic for assessing a bank’s liquidity. In Nepal standard of CD ratio is 90%.

**H3:** Credit to deposit ratio has a significant and positive effect on financial performance.

**Management quality ratio**

Management soundness is the qualitative variable that expresses the control of board of directors over the resources of the bank to protect shareholders interest. It is measured by the ratio of total operating income to total assets (Chhetri, 2021)<sup>[4]</sup>.

**H4:** Management quality ratio has a significant and positive effect on financial performance.

**Bank size**

Bank size is generally used to capture potential economies or diseconomies of scale in the banking sector. The variable controls for cost differences in product and risk diversification according to the size of the financial institution. This is included to control for the possibility that large banks are likely to have greater product and loan diversification. In most finance literature, natural logarithm of total assets of the banks is used as a proxy for bank size. The effect of bank size on profitability is generally expected to be positive (Sharma, 2021)<sup>[42]</sup>.

**H5:** Bank size has a significant and positive effect on financial performance.

**Research Methodology**

**Research Design**

Quantitative nature of data has been used for conducting the study. The secondary source of data has been collected from ADBL, HBL, SBL, RBB, NBL, NMB, NIBL, GIBL, EBL, PBL. And number of institutions and regulatory authorities like Nepal Rastra Bank, Nepal Stock Exchange and Security Exchange Board of Nepal and from different related websites. As the study is based mainly on the secondary data, other references materials are collect from the libraries. The study covers ten fiscal years data starting from 2011/2012 to 2020/2021. Study has been conducted by following causal relationship research design because it identifies the extent and nature of cause-and-effect relationships between two or more variables.

**Model specification**

To find out the relationship between the variable following regression equations is adopted.

$$Y = a + bx$$

$$ROA = a + b_1 * CAR + b_2 * NPLR + b_3 * CDR + b_4 * MQR + b_5 * BS + \mu_1 \dots \dots (i)$$

Were

ROA= Return on Assets, CAR= Capital Adequacy Ratio, NPLR= Non-Performing Loan Ratio

CDR= Credit to Deposit Ratio, MQR= Management Quality Ratio, BS= Banks Size

a= Intercept term, b<sub>1</sub>=Beta coefficient of CAR, b<sub>2</sub>= Beta coefficient of NPLR,

b<sub>3</sub>= Beta coefficient of CDR, b<sub>4</sub>= Beta coefficient of MQR, b<sub>5</sub>= Beta coefficient of BS,

μ<sub>1</sub>= Error term

**Results and Analysis**

**Descriptive Results**

**Table 1:** Descriptive Statistics

|              | ROA      | NPLR     | MQR      | CDR      | BS       | CAR       |
|--------------|----------|----------|----------|----------|----------|-----------|
| Mean         | 1.675700 | 2.793620 | 4.327200 | 79.83630 | 11.49756 | 12.37810  |
| Maximum      | 3.430000 | 24.29000 | 6.640000 | 104.0600 | 12.75253 | 20.74000  |
| Minimum      | 0.280000 | 0.010000 | 2.510000 | 46.08000 | 9.526756 | -9.770000 |
| Std. Dev.    | 0.614221 | 3.135406 | 0.879953 | 10.57885 | 0.673043 | 4.399160  |
| Observations | 100      | 100      | 100      | 100      | 100      | 100       |

Note: Results drawn from Eviews-12

Table1 shows that average performance of bank (ROA) with 10 samples of commercial banks is 1.68% where minimum value is 0.28% and maximum value is 3.43% with volatility ratio of 1.63%. The capital adequacy ranges from -9.77% to 20.74% with average of 12.38%, the mean shows the numerical value separating the higher half of a data sample. The standard deviation shows how much variation or dispersion exists from the mean. The low standard deviation indicates that the data are very close to the mean; high values of standard deviation indicate that the data set expands values. The difference is how the random variable is distributed near the mean value. The arithmetical average

of the study variables is presented in table 4.7. The maximum and minimum values indicate high or low value variable. Average of the non-performance loan ratio is 2.79% where the minimum value is 0.01% and maximum value is 24.29 % with volatility ratio 3.14 %. Average of the credit to deposit ratio is 79.84 % where the minimum value is 46.08% and maximum value is 104.06% with volatility ratio 10.58 %. Average of management quality ratio is 4.33% where the minimum value is 2.51 % and maximum value is 6.64% with volatility ratio 0.88 %. Average of Bank size is 4.993% where the minimum value is 4.137% and maximum value is 5.538% with volatility ratio 0.29%.

**Inferential Results**

**Table 2:** Correlation Analysis

| Correlation |          |           |          |          |          |       |
|-------------|----------|-----------|----------|----------|----------|-------|
| Probability | ROA      | NPLR      | MQR      | CDR      | CAR      | BS    |
| ROA         | 1        |           |          |          |          |       |
|             | -----    |           |          |          |          |       |
| NPLR        | 0.122275 | 1         |          |          |          |       |
|             | 0.2255   | -----     |          |          |          |       |
| MQR         | 0.678178 | 0.218079  | 1        |          |          |       |
|             | 0.0000   | 0.0293    | -----    |          |          |       |
| CDR         | 0.271646 | -0.270208 | 0.313132 | 1        |          |       |
|             | 0.0063   | 0.0066    | 0.0015   | -----    |          |       |
| CAR         | 0.294114 | -0.271954 | 0.268631 | 0.761419 | 1        |       |
|             | 0.0030   | 0.0062    | 0.0069   | 0.0000   | -----    |       |
| BS          | 0.085035 | -0.207589 | 0.042039 | 0.108765 | 0.162420 | 1     |
|             | 0.4002   | 0.0382    | 0.6779   | 0.2814   | 0.1064   | ----- |

Note: Results drawn from Eviews-12

Table 2 shows that the value of correlation coefficient  $r = 0.294114$  which means there is a weak positive relationship between Capital adequacy ratio and Return on assets. The value of correlation coefficient  $r = 0.122275$  which means there is a weak positive relationship between Nonperforming loan ratio and Return on assets. The value of correlation coefficient  $r = 0.271646$  which means there is a weak positive relationship between credit to deposit ratio and Return on assets. The value of correlation coefficient,  $r = 0.678178$  which means there is a strong positive relationship between Management quality ratio and Return on assets. The value of correlation coefficient  $r = 0.085035$  which means there is a weak positive relationship between Bank size and Return on assets.

**Regression Analysis**

Regression analysis has been conducted in order to examine the credit risk on financial performance of commercial banks. Capital adequacy ratio, Nonperforming loan ratio, Credit to deposit ratio, Management quality ratio, Bank size is used as an independent variable and Return on assets is used as dependent variable. Regression result is presented as follows:

**Selection among POLS, FEM or REM**

Which technique is appropriate for considered data? Now we are going to have procedure to select appropriate technique

1. Apply Breusch- Pagan Test

**Table 3:** Breusch-Pagan Test

|               | Test Hypothesis |          |          |
|---------------|-----------------|----------|----------|
|               | Cross-section   | Time     | Both     |
| Breusch-Pagan | 0.123183        | 0.305127 | 0.428311 |
|               | (0.7256)        | (0.5807) | (0.5128) |

Note: Results drawn from Eviews-12

If P value in Breusch- Pagan test is greater than 0.05 then accept null hypothesis and go for POLS. And if P value is less than 0.05 then reject the null hypothesis and go for fixed effect model or Random effect model.

And in this test, the P value of Breusch Pagan test is 0.5128 which is more than 0.05 then accept the null hypothesis of Pooled OLS and go for Pooled OLS.

2. Apply Pooled OLS Model to estimate regression

**Table 4:** Pooled OLS Model

| Variable           | Coefficient | Std. Error         | t-Statistic | Prob.    |
|--------------------|-------------|--------------------|-------------|----------|
| NPLR               | 0.003833    | 0.016523           | 0.231973    | 0.8171   |
| MQR                | 0.450507    | 0.058498           | 7.701259    | 0.0000   |
| ln_BS              | 0.038177    | 0.070295           | 0.543092    | 0.5884   |
| CDR                | -0.002832   | 0.006895           | -0.410677   | 0.6822   |
| CAR                | 0.021837    | 0.016315           | 1.338474    | 0.1840   |
| C                  | -0.767608   | 0.919581           | -0.834737   | 0.4060   |
| R-squared          | 0.476404    | F-statistic        |             | 17.10552 |
| Adjusted R-squared | 0.448553    | Prob(F-statistic)  |             | 0.000000 |
| F-statistic        | 17.10553    | Durbin-Watson stat |             | 1.749669 |
| Prob(F-statistic)  | 0.000000    |                    |             |          |

Note: Results drawn from Eviews-12

In table 4 the coefficient of NPLR, MQR, CDR, CAR, BS are: 0.003833, 0.450507, -0.002832, 0.021837, and 0.087902 respectively. If NPLR increase by 1 unit then ROA increases by 0.038177 units keeping other factors remains constant. Non- performing loan ratio has positive impact on return on assets (ROA). If MQR increase by 1 unit then ROA increases by 0.450507 units keeping other factors remains constant. Management quality ratio also has positive impact on return on assets (ROA) If CDR increases by 1 unit then ROA decreases by -0.002832 units keeping other factors remains constant.

Credit to deposit ratio has negative impact on return on assets (ROA). If CAR increases by 1 unit then ROA increases by 0.021837 units keeping other factors remains constant. Capital adequacy ratio also has positive impact on return on assets (ROA). If BS increases by 1 unit then ROA increases by 0.038177 units keeping other factors remains constant. Bank size has positive impact on return on assets. Independent variables will forecast 47.64 % true value of dependent variable. The value of R squared is 0.476404, which explained the independent variables predicting 47.64% of the dependent variable.

The value of adjusted R squared is 0.448553, which means the independent variables cumulatively determine 44.85% of the dependent variables.

F statistic shows the combine effect of all independent variable on dependent variable. If probability of f-stats is greater than 5% or 0.05 it means chances of error is high and we can conclude that combine effect is insignificant. On the other hand, if probability value of f-stats is less than 5% or 0.05 it means combine effect is significant or considerable. The value of prob (F-statistic) is 0.000000 which is less than 5 %, which means this model is fit.

**Variance Inflation Factor (VIF)**

The VIF ensures whether there multicollinearity problem or not The value of VIF value shown in the table below:

**Table 5:** Test for Multicollinearity

| Variable | Centered VIF |
|----------|--------------|
| CAR      | 2.45         |
| CDR      | 2.53         |
| NPLR     | 1.28         |
| MQR      | 1.26         |
| Ln BS    | 1.07         |

Note: Results drawn from Eviews-12

In table 5, centered VIF is less than 10 so there is no problem of multicollinearity in the data.

## Discussion

The relationship between capital adequacy ratio and financial performance is found positive but not significant. The positive relationship between capital adequacy ratio and financial performance indicates that high capital adequacy ratio in commercial banks increases the financial performance or profitability. Furthermore, the result indicates that one percent increases in capital adequacy ratio increases Return on assets by 0.021827 percent. The result is consistent with Shrestha and Niraula (2021) the coefficient of the positive effect size shows encouraging in profit making while the study indicates no statistical evidence about the consequence of capital adequacy ratio in the return on assets. Aruwa and Musa (2012) found the positive effect of capital adequacy ratio and bank's performance.

The relationship between non-performing loan ratio and financial performance is found positive but not significant. The positive relationship between non-performing loan ratio and financial performance indicates that high non-performing loan ratio in commercial banks increases the financial performance or profitability. Furthermore, the result indicates that one percent increases in non-performing loan ratio increases Return on assets by 0.003832 percent. Alshatti (2015) found the positive effect of non-performing/total loans ratio on the financial performance of banks. Setiawan, Basuki and Singh (2020)<sup>[25]</sup> found ROA has a positive and significant effect on profitability.

The relationship between management quality ratio and financial performance is found positive and significantly related to return on assets. The positive relationship between management quality ratio and financial performance indicates that high management quality ratio in commercial banks increases the financial performance or profitability. Furthermore, the result indicates that one percent increases in management quality ratio increases return on assets by 0.450508 percent. Chhetri (2021)<sup>[4]</sup> found that management quality ratio has positive and statistically significant.

The relationship between credit to deposit ratio and financial performance is found negative but not significant. The negative relationship between credit to deposit ratio and financial performance indicates that high credit to deposit ratio in commercial banks decreases the financial performance or profitability.

Furthermore, the result indicates that one percent increases in credit to deposit ratio decreases return on assets by 0.002832 percent. According to Shiri *et al.* (2015), there is an inverse link between the credit-to-deposit ratio and bank profitability.

Christaria and Kurnia (2016) found that the credit-to-deposit ratio has a strong negative influence on bank profitability proxies such as return on assets (ROA).

The relationship between bank size and financial performance is found positive but not significant. The positive relationship between bank size and financial performance indicates that high bank size in commercial banks increases the financial performance or profitability. Furthermore, the result indicates that one percent increases in bank size increases return on assets by 0.087902 percent. Chhetri (2021)<sup>[4]</sup> found that negative and no significant relationship between bank size and financial performance (ROA).

## Conclusion and Implications

Based in empirical results, study conclude that bank in order to design an effective credit risk management system need to establish a suitable credit risk environment, operating under a sound credit granting process, maintaining an appropriate credit administration that involves monitoring, processing as well as enough controls over credit risk. Banks need to place and devise strategies that will not only limit the banks exposition to credit risk but will develop performance and competitiveness of the banks, and banks should establish a proper credit risk management strategy by conducting sound credit evaluation before granting loans to customers.

Based on the findings from the empirical analysis, the study offers the following implications through which they can work to improve banks management practice and to have effective role in increasing profitability of banks. It also includes recommendations.

This study used Return on Asset (ROA) to measure profitability however, there are measures like Return on equity (ROE), Net interest margin, Net profit margin, which can be applied, in the banking industry to establish the effect of bank specific factors on financial performance.

Banks need to place and develop strategies that will not only limit the banks discussion to credit risk but will develop performance and competitiveness of the banks, and banks should establish a proper credit risk management strategy by conducting sound credit evaluation before granting loans to customers, improve their efficiency in credit analysis and loan management to secure as much as possible their assets.

## References

1. Ahmad SY, Kushwaha BP. Potential of film-induced tourism and its impact on destination development. *Prabandhan Guru*,2016:7(1-2):9-14.
2. Amir AM, Kushwaha BP, Singh RK. Visualization 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*, Vol. ahead-of-print, 2023. ahead-of-print. <https://doi.org/10.1108/JSBED-04-2022-0206>
3. Bari *et al.* Credit risk management and its impact on performance of commercial banks: In case of Ethiopia. *Journal of finance and accounting*,2015:6(24):53-64.
4. Chhetri DG. Effect of credit risk management on financial performance of Nepalese commercial banks. *Journal of Balkumari Collage*, 2021.
5. Gakure RW, Ngugi JK, Ndwiga PM, Waithaka SM. Effect of credit risk management techniques on the performance of unsecured bank loans employed commercial banks in Kenya. *International Journal of Business and Social Research*,2012:2(4):221-236.
6. 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*, 2022. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JEAS-09-2021-0175>
7. International monetary fund. Risk management. Mumbai: Macmillan Publishers India Pvt. Ltd.

8. 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.
9. Kenton W. Credit Personal Finance. Retrieved from Investopedia, 2020.  
<https://www.investopedia.com/terms/c/credit.asp>
10. Kithinji AM. Credit risk management and profitability of commercial banks in Kenya. School of Business. Kenya: University of Nairobi, 2010.
11. Kolapo TF, Ayeni RK, Oke MO. Credit risk and commercial banks performance in Nigeria: A panel model approach. *Australian Journal of Business and Management Research*,2012;2(2):31-38.
12. Kuo SH, Enders W. The term structure of Japanese interest rate: The equilibrium spread with asymmetric dynamics. *The Japanese and International Economics*,2004;18(1):84-98.
13. Kurawa JM, Garba S. An evaluation of the effect of credit risk management (CRM) on the profitability of Nigerian Banks. *Journal of Modern Accounting and Auditing*,2014;10(1):104-115.
14. Kushwaha BP. Paradigm shift in traditional lifestyle to digital lifestyle in Gen Z: a conception of consumer behaviour in the virtual business world. *International Journal of Web Based Communities*,2021;17(4):305-320.
15. Kushwaha BP, Tyagi V, Sharma PB, Singh RK. Mediating role of growth needs and job satisfaction on talent sustainability in BPOs and call centres: An evidence from India. *Journal of Public Affairs*,2022;22(1):e2400.
16. Kushwaha BP, Maru FY. Management students' attitude towards entrepreneur and entrepreneurship. *International Journal of Research in Management & Technology*,2015;5(4):325-329.
17. Kushwaha BP. An empirical study on youth perceptions and preferences on smartphones. *International Journal of Research in IT & Management*,2015;5(10):82-90.
18. Kushwaha BP. The impact of influencing factors on purchase decision of consumer durable product. *International Journal in Management and Social Science*,2015;3(9):375-386.
19. Kushwaha BP. Sustainable offering practices through stakeholder's engagement. *Journal of Innovation for Inclusive Development*,2018;3(1):3-9. ISSN: 2456 - 4478.
20. Kushwaha BP, Singh VN. Incentives and obstacles to take entrepreneurship as a new career opportunity: a case of management students. *Apeejay-Journal of Management Sciences and Technology*,2018;6(1):36-44.
21. 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.
22. Kushwaha BP, Rao NS, Ahmad SY. The factors influencing consumer buying decision of electronic products. *Management Dynamics*,2015;15(1):5-15.
23. 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.  
<https://doi.org/10.3390/su15021699>
24. 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.
25. 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
26. 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.
27. 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.
28. 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.
29. Lindgren H. Swedish historical research on banking during the1980's: Tradition and renewal. *Scandinavian Economic History Review*, 2011.
30. Macaulay FR. Some theoretical problems suggested by the movements of interest rate, bond yields, and stock prices in the United States since 1856. *National Bureau of Economic Research*, 1988.
31. Makasha G. Credit risk management and its impact on performance on Ethiopian commercial banks. Ethiopia: Addis Ababa University, 2011.
32. Margrabe K. The incidence of secured debt: evidence from the small business community. *Journal of Financial and Quantitative Analysis*, 2007, 379-394.
33. McNeil AJ, Frey R, Embrechts P. Quantitative risk management. Switzerland: Princeton University Press, 2005.
34. Muriithi JG. Effect of credit risk management on financial performance of Nepalese Commercial Banks. *Journal of Balkumari Collage*,2016;10(1):19-30.
35. Naceur SB, Omran M. The effects of bank regulations, competition, and financial reforms on MENA banks profitability. *Economic Research Forum Working Paper*, 2008, 44.
36. Nawaz M, Munir S. Credit risk and commercial banks performance in Nigeria. *Interdisciplinary Journal of Contemporary Research*,2012;4(7):49-63.
37. Njanike K. The impact of effective credit risk management on bank survival. *Annals of the University of Petrosani, Economics*,2009;9(2):173-184.
38. Onyiriuba L. Effect of credit risk on the performance of Nepalese commercial banks. *NRB Economic Review*,2009;28(1):1-23.
39. Pandey IM. Venture capital for financing technology in Taiwan. *Technovation*,2008;16(9):499-514.
40. Poudel RP. The impact of credit risk management on financial performance of commercial banks in Nepal. *International Journal of Art and Commerce*, 2012.

41. Pradhan S, Shah AK. Credit risk management of commercial banks in Nepal. *International Journal of Economics and Finance*,2020:12(3):55-66.
42. Sharma R. Credit risk management and it's impact on profitability of Nepalese commercial banks. Unpublished Masters Dissertation in Finance. Tribhuvan University, 2021.
43. Shrestha R. Effects of credit risk on the financial performance of Nepalese commercial banks. Unpublished Dissertation. Patan Multiple Campus, TU, 2018.
44. 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.
45. 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.
46. Evidences from commercial banks of Nepal. *Kaav International Journal of Law, Finance & Industrial Relations*, 5(1), 82-91.
47. Upadhyay JP. *Accounting for banking*. Kathmandu: Ashmita Books Publishers & Distributors (P) LTD, 2020.
48. Wagner C. *An introduction to credit risk modeling*. Chapman and Hall/CRC, 2012.
49. Yimka *et al*. Credit risk management and financial performance of selected commercial banks in Nigeria. *Journal of Economic and Financial Studies*,2015:3(1):1-9.