Impact of Credit Risk Management on Profitability of Commercial Banks in Nepal

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Abstract

The research aims to assess commercial bank credit risk and profitability, analyze the link between credit risk and financial performance of sampled banks, and assess the influence of credit risk on financial performance. Descriptive, correlational, causal comparative study. Secondary data come from the sample bank. Three Nepalese commercial banks are sampled. Profitability, credit risk, liquidity, capital sufficiency, interest spread, and base rate are study factors. Financial and statistical analysis are based on objective achievement and raw facts. Financial analysis uses ratios and descriptive statistics, correlation, and regression. Using SPSS and Excel for analysis. Positive but not significant relationships exist between profitability, credit risk, and liquidity. The capital adequacy ratio and profitability are negative and insignificant. Profitability is positively correlated with interest spread. Base rate negatively impacts profitability and is considerable. Credit risk hurts profitability but not much. The liquidity ratio and capital sufficiency positively affect profitability but not significantly. Positive interest spread and negative base rate affect bank profitability. With a R square value of 0.783, the study found that independent factors explain 78.3% of the variation in the dependent variable and other variables 21.7%. The results indicated that ISR and BR significantly affect commercial bank ROE in Nepal, but CR, LR, and CAR do not.

Keywords

ROE, non-performing loan, CAR, LR, Interest Spread Rate and Base Rate

Introduction

In order to create a favorable credit risk atmosphere, the credit risk board of directors should implement a robust credit-giving cycle and maintain an effective credit organization with thorough monitoring, management, and enough control over credit risk. In order to improve the foundation's overall presentation and seriousness, banks should find out techniques that focus on reducing their openness to accept danger. In addition, before extending credit to customers, banks should establish a thorough credit risk management system, which should include the regular evaluation of financial stability. The focus should be on credit risk, but we should also aim to develop procedures that bolster the banks' image and make them seem more serious. In addition, financial institutions should continuously enhance the efficacy of their credit investigation and advance administration in order to safeguard their resources as much as possible. The source of this advice is Khanal and Sapkota (2023). Dissecting the impact of bank crediting on advancement becomes crucial in evaluating the money linked transmission

method. The analysis concludes that drawn-out bank boosting counsel for expansion are responsible for the beneficial correlation between bank crediting and development in Nepal. Conversely, an alarming effect of advance charges on progress is seen in the summary. Consequently, the state bank should take the lead in controlling expansion and preventing banks from lending money to useless and risky ventures (Timalsina Dhungana, 2017).

Focusing on the information age, this study seeks to identify the factors that, in turn, affect the efficiency with which the banking sector saves money using a credit risk strategy. This research differs from previous ones in a number of ways, including the following: period choice, bank choice, aim choice, examination technique choice, and factor choice. In this review, we will try to bridge the gap between those that focus on the specific point over a long period of time and those that concentrate on the components of credit risk and how they affect productivity.

Literature Review

By 2023, Khanal and Sapkota With relation to Nepal, credit risk the board and its influence on commercial banks' exhibition. Learn how credit risk affects the monetary exhibition of Nepalese commercial banks. In this study, the Pooled Normal Least Square assessor is used to analyze modified board information from ten commercial banks from 2012 to 2021. The study found that CDR affects ROA, whereas Vehicle, NPLR, and BS made a little but favorable difference. Alternatively, MQR note has a significant impact on ROA. These results demonstrate that the financial presentation of Nepal's commercial banks is substantially impacted by credit risk management.

(Butola, Dube, & Jain, 2022)'s Did research for a study that looked at how credit risk management affected the bottom lines of Indian banks. The major objective of this research is to discover a statistical relationship between CRM and profitability in Indian banks. The secondary data was analyzed using panel data regression. 38 scheduled commercial banks in India contributed the data between 2005 and 2019. In this study, ROA is seen as a measure of profitability and a dependent variable. On the other hand, CRM is determined by a number of independent variables, which include the following: credit-to-deposit ratio (CDR), net interest margin (NIM), operating profits to total assets (OPA), capital adequacy ratio (CAR), provision coverage ratio (PCR), and net non-performing assets to net advances (NNPA). Statistical analysis shows that ROA is positively associated with CDR, OPA, and CAR, and negatively associated with NIM, NNPA, and PCR; nevertheless, all of these variables show a statistically significant connection with ROA except for PCR. "Credit Hazard" was the primary focus of Aduda and Obondy (2021). "The Board and Proficiency of Reserve Funds and Credit Helpful Social Orders: A Survey of Writing" aims to conduct a literature review on the topic of credit risk among executives and their impact on effectiveness, as well as to identify any gaps in knowledge regarding the relationship between credit risk and financial execution based on the specific research that was conducted. Regardless, no concrete data regarding the correlation between credit risk among executives and SACCO productivity is available. Not only has previous research been inconsistent on the nature of the relationship between the two, but it has also often ignored efficacy in favor of monetary success. The analysts' differing conclusions can be due to systemic variations or differences in how the evaluation elements were operationalized. Relevant types may stand in for the problematic consequences, given that the majority of the research has been on commercial banks in various economies. The correlation between SACCO output and credit risk board should be further investigated by looking for the hidden factors. Banu, Sayaduzzaman, and Sil, published in 2021 Investigated the relationship between credit risk management indicators and profitability attributes using data collected from Bangladesh's state-owned commercial banks. This study primarily aims to

determine the effect of credit risk management indicators on the profitability characteristics of commercial banks in Bangladesh that are controlled by the state. For this study, the researcher looked at the audited annual reports of four different banks between 2012 and 2016. In order to reach the end result The study's objectives informed the use of analysis of variance (ANOVA), multiple regression model (MRM), and correlation matrix (CM). Although the sample banks' profitability attributes varied little over the research period, there was considerable (and non-significant) change in the measures of credit risk management, and there was a link between them. Furthermore, the study's profitability metrics, including return on equity and return on assets, as well as the sample banks' net profit percentage, are unaffected by the numerous credit risk management indicators, including loan and advance, classified and unclassified loans, leverage ratios, bad debt, default ratios, cost per loan asset, and cost to income ratios. The study concludes that in order to effectively manage credit risk and meet the demands of loan applicants, the banking industry's management should emphasize the development of a smart policy and lending standards.

"The Effect of credit risk the executives on the monetary execution of business banks in Nepal" was the subject of the article Poudel (2020) examined. This research aims to delve into the many facets of credit risk management and the implications they have on the primary worries of financial institutions. Default rate, cost per credit resource, and capital sufficiency proportion were the accompanying limits examined in the study. The financial records of thirty-one institutions were examined over an extensive period (2001-2011). Default rate, cost of per credit resource, and capital sufficiency percentage were compared to the productivity proportion after data was broken down using engaging, relationship, and relapse tactics. Even if the default rate is the greatest indicator of a bank's financial health, these factors have a negative impact on it, according to the assessment. The goal is to encourage financial institutions to not only strengthen themselves against credit risk, but also to develop and implement strategies that will increase their profits.

Credit Risk Management and the Profitability of Nepalese Joint Venture Commercial Banks was studied by Shrestha, B. (2018). Regardless of its type, credit risk management is an essential component of financial organizations. We selected investment and commercial banks in Nepal to examine the correlation between credit risk management and profitability in order to get a better picture of the country's banking system as a whole. The study's descriptive and casual research designs were useful in determining the strength of the causal association between the variables under investigation. Quantitative data was gathered using a regression model, while qualitative data was gathered through structured interviews with bank management. This study's regression model results corroborated previous findings that credit risk had no effect on the profitability of Nepalese joint venture banks. This study compares and contrasts joint venture banks in Nepal based on metrics such as credit-to-deposit ratio, non-performing credit-to-total credit ratio, return on assets (ROA), and credit risk management. It draws on data from NABIL, NIBL, SCBl, EBL, NSBI, and HBL. Secondary data derived entirely from joint venture commercial banks' annual reports was utilized for this investigation. As a sample, this study included six joint venture banks. The results of the bank's operations during 2012–2016 constitute the basis of this analysis.

Similarly, Chhetri (2018) looked into how credit risk executives affected the financial performance of commercial banks in Nepal. The study bolstered the case for Nepalese commercial banks to follow the prudent praise risk management practices of their chiefs, strengthen the viability of their credit assessment and advance organization, and sever non-performing loans in order to recover assets and mitigate negative effects on financial performance. This selected company controls an account with a time reach and exploration system comparable to Nepal, but no scientists have investigated the recognized risk method for it. Past dismissals of speculative, quantifiable, and monetary instruments are all part of this

research. Accordingly, the purpose of this article is to seek out the main indicators that could significantly affect the functioning of Nepalese commercial banks. The experimental audit has failed to provide up-to-date information, such as that found in this analysis, as the research, papers, and diaries used for evaluation are from different years. To help experts and students gain a deeper understanding of a certain topic, this review often provides in-depth research on the topic.

Research Methodology

Research Designs

This study applies a causal comparative and exploration technique those integrates clear, relationship, & fundamental similar procedures to discourse concerns concerning Credit chance & bank execution in Nepal. *Population and Sample*- To inspect the job of various gamble the executives' factors on the monetary execution of banks, this study contains an example of three business banks of Nepal whose separate information were gathered for the time of 2013/14 to 2022/23. "The example has been chosen through an irregular testing strategy out of the all-out populace. *Methods Analysis*- To achieve the review's goals, an assortment of monetary, factual, and it were utilized to account instruments. The information investigation will be predictable with the current information designs. Utilizing the accessible devices and assets, the review applies scientific measurable methodology like Karl Pearson's coefficient of connection and t-test.

Conceptual Framework

Figure1: Conceptual Framework

Independent Variable   Dependent Variable
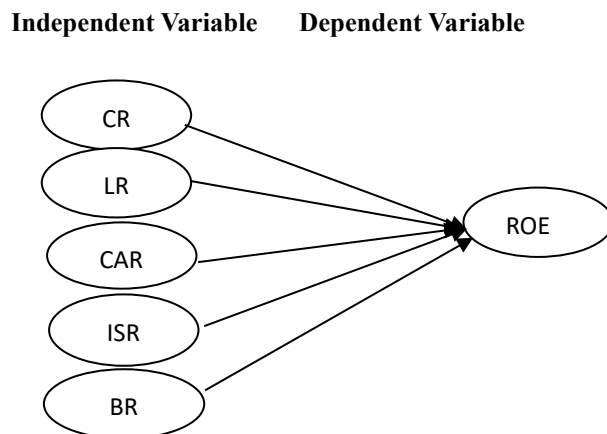
Hypothesis formulation

H1: There is significant relationship between credit risk and ROE
H2: There is significant relationship between liquid risk and ROE
H3: There is significant relationship between capital adequacy ratio and ROE
H4: There is significant relationship between interest spread ratio and ROE
H5: There is significant relationship between base rate and ROE

Definitions of the Variables

Dependent Variables-The following Dependent Variables has been using in this study:

Return on Equity (R0E)- Return on equity (ROE) fills in as a measurement to assess the benefit of value subsidizes put resources into a bank, uncovering the benefit procured each unit of contributed capitals. This action is exceptionally huge as it mirrors the efficiency of the proprietorship or chance capital used inside the banks, as featured through Getahun (2015). ROE, a monetary proportion applied to evaluate the benefit and productivity of different organizations, including bank, is determined via separating a bank overall gain with it normal investors' value. ROE is significant on the grounds that it fills in as an imperative sign for financial backers and partners assessing a bank's capability to procure gets back from investor speculations. Banks frequently look for a higher ROE, which demonstrates more noteworthy benefit creation each unit of investor proprietorship. This is basic toward perceive those R0E can shift altogether amongst bank because of fluctuations in business structures, Risk reports, & current marketplace condition.

*Independent Variables-*The following Independent Variables have been used in the study:

Credit Risk Identification- Recognizing Credit risk regularly implies surveying 3 significant parts: functional gamble, market hazard, and moral gamble. Functional gamble relates to the potential for misfortunes coming about because of defective inside methodology, faculty issues, and outer occasions.

Liquidity- In the financial setting, liquidity alludes to a bank's ability to meet transient responsibilities or commitments on time. Liquidity is a significant component for banks to consider, as it can cause bank disappointment. Administrative organizations now and again stress how pivotal the liquidity of the executives is. Since they find it challenging to fulfill investor requests, banks that are encountering a liquidity emergency could become the focus of a bank run.

Capital Adequacy Ratio (CAR)- The Capital Sufficiency Proportion remains picked so a critical sign of a bank monetary potency, especially according to viewpoint of administrative specialists. It incorporates different kinds of financial capital, with a fundamental highlight on financial backer worth, which is known for its consistency and liquidity. Sets aside cash with a high capital adequacy extent are most likely going to be useful.

Interest Spread Rates (ISR)- The premium Spread Rate in banks tends to differentiation concerning the funding cost at whose bank loosen up credits to debtors& the rates at whose they pay benefactors. This Spread fill in as a general income for bank, getting the benefit from crediting & getting development. For the most part, banks make cash by charging more significant supporting costs on advances and credit things than on stores.

Base Rate (BR)- Monetary policies two-fold affects credit risk, during advance beginning as well as when financing costs are raised over the credit's term. Here, low financing costs fuel bank risk-taking way of behaving, bringing about the issuance of new advances with expanded credit risk. At the same time, decreased financing costs lessen the ongoing acknowledge risk associated for bank credits.

Table 1. Descriptives Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation	CV (in %)
Profitability	30	6.35	32.98	18.42	6.99	37.94
Credit risk	30	0.10	2.43	0.66	0.63	0.95
Liquidity Ratio	30	21.51	42.69	29.70	6.079	20.46
Capital Adequacy Ratio	30	11.91	15.92	13.47	0.990	7.3
Interest Spread Rate	30	3.18	5.71	4.52	0.67	14.82

Cont.

Base Rate	30	4.17	10.74	7.74	1.68	21.7
Valid N (list wise)	30					

Source: Appendix

Table 1. show expressive estimations of investigation factors. The investigation factors are benefit, credit risk, liquidity ratio, capital adequacy ratio, interest spread rate, base rate. The data are accumulated from the yearly report of the different model bank yearly report and all of bank has 10 discernment or in outright 30 insights are the investigation insights. Every one of the 30 insights are used for calculation of the illuminating estimations known as mean, standard deviation, coefficient of assortment, least, and most noteworthy. In the tables, the base, most limit, mean, S.D., & coefficients of assortment of advantage is 6.35, 32.98, 18.42, 6.99, & 37.94 independently. Credit risk is one of the independent elements of the investigation least, most noteworthy, mean, standard deviation, &coefficients of assortment, which are 0.10, 2.43, 0.66, 0.63, and 0.95 independently. The Liquidity Extent is furthermore the free element of the assessment least, most noteworthy, mean, S.D. &coefficients of assortment are 21.51, 42.69, 29.70, 6.079& 20.46 exclusively. The Capital Adequacy Extent in like manner the free factors of the assessment least, most limit, mean, standard deviation and coefficient of assortment are 11.91, 15.92, 13.47, 0.990, & 7.3 exclusively. The Exceptional Spread Rate is furthermore the independent variable of the investigation which is least, most noteworthy, mean, standard deviation and coefficient of assortment 3.18, 5.71, 4.52, 0.67, & 14.82 independently. The Base Rate is also the free component of the investigation and least, most limit, mean, standard deviation and coefficient of still up in the air, they are 4.17, 10.74, 7.74, 1.68, & 21.7 exclusively. The assessment showing that all of the elements have an opening among least and the best is very and considering mean &S.D.is have all the earmarks of being outstandingly level up which address stream position of the investigation factors is an incredibly unstable nature of the data.

Correlation Analysis

Table 2. Co-relation of the Variables

Variables		Profitability	Credit Risk	Liquidity Ratio	Capital Adequacy Ratio	Interest Spread Rate	Base Rate
Profitability	Pearson Correlation	1					
	Sig. (2-tailed) N	30					
Credit risk	Pearson Correlation	.095	1				
	Sig. (2-tailed)	.616					
	N	30	30				
Liquidity Ratio	Pearson Correlation	.005	.038	1			
	Sig. (2-tailed)	.978	.841				
	N	30	30	30			
Capital Adequacy Ratio	Pearson Correlation Sig. (2-tailed)	-.025 .895	-.418* .022	-.201 .286	1		
	N	30	30	30	30		
Interest Spread Rate	Pearson Correlation Sig. (2-tailed)	791** .000	.110 .563	-.301 .107	.146 .441	1	
	N	30	30	30	30	30	
Base Rate	Pearson Correlation	-.536**	-.100	-.153	.416*	-.177	1
	Sig. (2-tailed)	.002	.597	.419	.022	.349	
	N	30	30	30	30	30	30

**. Co-relation is significant at 0.01 level (2tailed).
*. Co-relation is significant at 0.05 level (2tailed).

Table 2 shows the association between the free and subordinate elements. In this assessment the dependent variable is the Advantage assessed by return on esteem and the free factors are credit risk assessed by non-performing propels, liquidity extent, capital adequacy extent, premium spread rate, and base rate. Objective two of the investigation is to analyze the association among free and not entirely settled in this relationship table. The association among efficiency and credit risk is a positive and low level of relationship similarly which in not a gigantic relationship. The association regard is 0.095 which tends to the low certain relationship regard. The basic worth is 0.616 which is more than n0.05 so the relationship isn't colossal. The hypothesis isn't right. The association between the advantage and Liquidity Extent is positive and a low-level relationship moreover which not a basic relationship is. The relationship regard is 0.005 which tends to the low certain association regard. The basic worth is 0.978 which is more than 0.05 so the relationship isn't immense. The hypothesis isn't right. The association between the efficiency and capital adequacy Extent is negative and has a low level of relationship in like manner which is most certainly not a basic relationship. The association regard is 0.025which addresses the low lamentable relationship regard. The enormous worth is 0.895which is more than 0.05 so the relationship isn't basic. The hypothesis isn't right. The association among advantage and Premium Spread Rate is a positive and evident level relationship yet not perfectly and besides which immaterial relationship. The relationship regard is 0.791which addresses a high certain association regard. The basic worth is 0.000 which is under 0.01 so the relationship is tremendous or called 1% level of significance. The hypothesis is substantial. The association between the advantage and Base Rate is a negative and moderate level of relationship yet not a perfectly and besides which in a basic relationship. The connections regard is 0. 536 which tends to the high terrible association regard. The immense worth is 0.002 which is under 0.01 so the relationship is basic or called 1% level of significance. The hypothesis is legitimate.

Regression Analysis

This third level headed of exploration is to look at effect of autonomous factors on reliant factors of the examination. The relapse depends on numerous relapse condition. The numerous relapse condition is ROE it= $\beta 0+ \beta 1 \times$ NPL it + $\beta2 \times$LRit + $\beta3 \times$ CAR it + $\beta4 \times$ ISR+ $\beta 5 \times$ BR+ e. The model synopsis, ANOVA, and Coefficient is determined.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of The Estimate
1	.906	.802	.783	3.26

a. Predictors: (Constant), base rate, credit risk, liquidity ratio, interest spread rate, capital adequacy ratio

Table 3 show model outline of 30 perceptions of 3 business bank in Nepal and defendant of each banks have 10 perceptions. Here R2=0.82 implies 80 percent of complete varieties in benefit is made sense of ward factors and free factor for example base rate, credit risk, liquidity ratio, interest spread rate, Capital Ampleness Proportion however 18 percent absolute minor departure from productivity is made sense of by different elements which are excluded from our exploration.

Table 4 ANOVA of Variables

Model	Sum of Squares Ss	D.F.	Mean Square	F	Sig.
1 Regression	1163.462	5	232.692	21.886	.000[b]
Residual	255.165	24	10.632		
Total	1418.627	29			

a. dependent variable: profitability
b. predictors: (Consistent), base Rate, credit risk, liquidity ratio, interest spread rate, Capital adequacy ratio.

Table 4 shows the ANOVA of three business bank of 30 perceptions. Here subordinate variable benefit defines an indicator and free factor base rate, credit risk, liquidity ratio, interest spread Rate, capital adequacy ratio. Here relapse is critical on the grounds that huge worth is 0.000 which is under 5%. It means the relapse major areas of strength for is strong regression.

Table 5 Coefficients of Variable

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig
	B	Std Error	Beta		
1 (Constant)	-17.340	11.221		-1.545	.135
Credit risk	-.120	1.082	-.011	-.111	.913
Liquidity Ratio	.217	.107	.189	2.020	.055
Capital Adequacy ratio	.430	.779	0.61	.551	.586
Interest Spread Rate	8.032	1.021	.770	7.865	.000
Base Rate	-1.642	.419	-.397	-3.921	.001

a. dependent variable: profitability

Table 15 shows the coefficient of business bank. The coefficient of different three business bank total 30 respondents of all of 10. Here subordinate variable Efficiency called marker and independent variable Base Rate, Credit Possibility, Liquidity Extent, Premium Spread Rate, capital Adequacy Extent. Here coefficient table shows the solitary variable assortment to the dependent variable, their precision, immense level. The impact of the Credit opportunity to the Efficiency is negative which shows by the beta worth of negative 0.12. The beta worth shows 1% change in to Credit risk than antagonistically 0.12 rate change in to benefit of the bank. The standard mix-up resolved is outstandingly high for instance 1.082 which mean low level of precision of decided regard. The immense worth is more than 0.05 so the impact isn't basic for instance 0.913. The impact of the Liquidity Extent to the Advantage is positive which shows by the beta worth of positive 0.217. The beta worth shows 1% change in to Liquidity Extent than positive 0.217 rate change in to efficiency of the bank. The standard botch decided is particularly low for instance 0.107 which mean raised level of accuracy of decided regard. The colossal worth is more than 0.05 so the impact isn't basic for instance 0.055. The impact of the Capital Adequacy Extent to the Advantage is positive which shows by the beta worth of positive 0.43. The beta worth shows 1% change in to Capital Adequacy Extent than positive 0.43 rate change in to benefit of the bank. The standard screw up resolved is incredibly low for instance 0.779 which mean raised level of accuracy of decided regard. The enormous worth is more than 0.05 so the impact isn't basic for instance 0.586. The impact of the Top notch Spread rate to the Advantage is positive which shows by the beta worth of positive 8.032. The beta worth shows 1% change in to Income Spread rate than positive 8.032 rate change in to benefit of the bank. The standard bumble decided is incredibly high for instance 0.1.021 which mean low level of accuracy of decided regard. The colossal worth is under 0.05 so the impact is basic for instance 0.00. The impact of the Base rate to the Advantage is negative which shows by the beta worth of negative 1.642. The beta worth shows 1% change in to Base rate than negative 8.032 rate change in to efficiency of the bank." The standard slip-up resolved is very low for instance 0.419 which mean low level of accuracy of decided regard. The immense worth is under 0.05 so the impact is basic for instance 0.001.

Conclusion

The primary objective of the exploration is to assess the current condition of credit risk and advantages associated with commercial banks. The analysis reveals that the components exhibit a significant range between the minimum and maximum values, and the standard deviation appears to be notably large, indicating the highly variable character of the data in the current study. Considering all aspects, the momentum position of the examination components is characterized by its very variable nature. The second objective of the investigation is to analyze the relationship between productivity and credit risk; profitability and liquidity are positive but not significant. The capital adequacy ratio and productivity are negative but not crucial. The premium spread rate and benefit exhibit a significant and positive correlation. The base rate has a detrimental and significantly adverse correlation with benefit. The correlation between premium spread rate and benefit is positive and substantial, but the association between base rate and productivity is negative. The third purpose of the evaluation is to examine the influence of credit risk on the financial performance of the evaluated institutions. Credit risk has been shown to affect productivity. The liquidity ratio and capital sufficiency influence productivity. The premium spread rate is positive, while the base rate is negative, impacting the bank's profitability. The favorable premium spread rate and adverse base rate influence the bank's profitability.

References

Aduda, J., & Obondy, S. (2021). Credit risk management and efficiency of savings and credit cooperative societies: A review of literature. *Journal of Applied Finance and Banking*, *11*(1), 99-120.

Banu, M. H., Sayaduzzaman, M., & Sil, S. C. (2021). The Impact of Credit Risk Management Indicators on Profitability Attributes: Evidence from the State-Owned Commercial Banks in Bangladesh. *American Journal of Trade and Policy*, *8*(3), 215-224.

Butola, P., Dube, P., & Jain, V. K. (2022). A study on impact of credit risk management on the profitability of Indian banks. *International Journal of Management and Sustainability*, *11*(3), 103-114.

Khanal, P., & Sapkota, P. (2023). Credit risk management and its impact on performance of commercial banks: With reference to Nepal. *International Journal of Credit and Commerce*, *5*(1), 68-74.

Risal, H. C., & Poudel, S. (2020). Role of Credit Risk in Performance difference between A and B Class Banks in Nepal. *NRB Economic Review*, *32*(1), 37-53.

Sharma, P. R. (2015). List Of Completed Master Dissertation January 2014 to December 2015. *Journal of Nepalese Business Studies*, *9*(1), 145-151.

Shrestha, B. (2018). Credit Risk Management and Profitability of Joint Venture Commercial Banks in Nepal, *Advances in Economics and Business Management (AEBM),* p-ISSN: 2394-1545; e-ISSN: 2394-1553; Volume 5, Issue 3; April-June, 2018, pp. 149-153.