CREDIT RISK MANAGEMENT & ITS IMPACT ON PROFITABILITY OF COMMERCIAL BANKS IN NEPAL

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1. Background of the study

Risk is an element that is inherent to banking operations. Simply put, risk is the unpredictability of a future circumstance or event, and for banks, it's the uncertainty of the results of business investments. The numerous banking risks can be divided into categories such as operational risk, liquidity risk, market risk, compliance risk, credit risk, cyber security risk, and strategic risk. For commercial banks, Credit Risk stands out among these as the most significant sort of risk. The organized lending system will never run out of dangers. Risk is a given for banks and other financial institutions, whether it be operational, market, liquidity, credit, or interest-related. Therefore, risk profiling is given utmost priority in all financial organizations (Bhattarai, 2019).

Credit risk is one of the constant threats that have consistently cost institutions. The easiest way to describe this risk is the possibility that a loan will not be repaid to the lender according to the terms agreed upon, destroying the lender's investment. Credit risk results from a bank's lending activities. Simply put, credit risk is the risk a bank takes when making a loan to a borrower. They could go into default and fail to make the required payments on schedule, costing the bank money. Loan portfolio management is crucial, but often a bank cannot fully predict whether it will be able to recover the money because even though the borrowers have been making their payments on time, the economy may change and make things differently than they have in the past. What do banks do as a result? Their credit risks must be managed (Chhetri, 2021).

The practice of credit risk management involves minimizing losses by determining if a bank's capital and loan loss reserve are enough at any particular time. Maintaining credit risk exposure within appropriate and acceptable bounds is the aim of credit risk management in banks. Banks must manage both the entire portfolio and specific credits in order to control credit risk. The executive management team can identify which prospective customers may pose risks that are above their predetermined risk threshold by monitoring credit risk (Abiola, 2011).

A bank's profitability is decreased, its assets' quality is affected, and the amount of loan losses and non-performing loans increases due to improper credit risk management, all of which can eventually cause financial difficulty. Additionally,

better credit risk management offers the chance to significantly boost overall performance and gain a competitive edge. Gaining a thorough grasp of the bank's overall credit risk by looking at risk at the individual, customer, and portfolio levels is the first stage in successful credit risk management.

A bank's performance is gauged by its profitability. Banks turn a profit when they generate or create more money than they spend on expenses. A bank's primary sources of income are the service fees it charges for its products and the interest it earns on its assets. Interest on its liabilities is one of its primary costs (Shrestha, 2020).

Banks are currently the biggest financial organizations in the world, having locations and affiliates in every aspect of a person's life (Pandey, 2005). Commercial banks must deal with hazards when they are in operation, though. Given that issuing credit is one of the primary sources of income in commercial banks, credit risk is one of the most serious hazards that banks face. Therefore, how the risk associated with that credit is managed determines how profitable the banks are. The research's objective is to accurately inform stakeholders about the commercial banks' credit risk management practices and how they affect their financial performance.

2. Statement of the Problem

Due to cut throat competition in the banking industry, banks seem to be ready to grand much more loan, advances and other credit facilities against the spirit and norms of credit policy guidelines. Unsecured loan and investment may cause the liquidation of those commercial banks on the funds. One wrongly invested without thinking any financial risk and their related facts, the bank cannot obtain profitable return as well as it should sometimes lose its principle.

Li and Zou (2014) found that the indicator of Non-performing loans had positive impact on banks profitability as measured by return on equity (ROE) and return on assets (ROA). Ahmed, Takeda and Shawn (1998) have found that loan loss provision has a significant positive influence on non-performing loans.

The study deals with the practices and major indicators of credit risk management of banks in Nepal with reference to selected commercial banks. What kinds of precautions on loans turning bad are taken by bank for its survival is crucial as it is the core banking activity which impacts liquidity and profitability of the banks

severely. Due to the excessive amount of non-performing assets in commercial bank, there is the wide spread suspicion on the performance on the commercial bank. The most important risk factor in banking industry is total management of loan portfolio and control measures adopted to mitigate risks arising therefrom.

Therefore, this study is attempt in identification and measurement of credit risk widespread in the selected commercial banks and their credit risk management mechanism/practices/strategies to mitigate the potential loss resulting therefrom.

Hence this research is focus on the following questions:

i. What is the present condition of ROA, CAR, NPLR, CDR and MQR of commercial bank in Nepal?
ii. What is the relationship of CAR, NPLR, CDR and MQR with ROA of commercial bank in Nepal?
iii. Is there effect of CAR, NPLR, CDR and MQR on profitability (ROA) of commercial bank in Nepal?

3. Objectives of the Study

The main objective of this study is to analyze the impact of credit risk management on financial Performance of commercial bank in Nepal. To achieve the above objective, the specific objectives are generated as follows.

i. To assess the present condition of ROA, CAR, NPLR, CDR and MQR of commercial bank in Nepal.
ii. To analyse relationship of CAR, NPLR, CDR and MQR with ROA of commercial bank in Nepal.
iii. To examine the effect of CAR, NPLR, CDR and MQR on the profitability (ROA) of commercial bank in Nepal.

4. Rationale of the Study

Credit risk management is vital to the bank and financial institutions to sustain the smooth operation by protecting interest of all the stakeholders. The proposed study would be of enormous assistance to the executives/relationship managers of commercial bank on how they should manage the loan portfolios and what are the major financial indicators that have be adhered while managing the credit risk. Most of the financial institutions have been successfully managing the credit risk and able

to earn profit. On the other hand many have been facing problem of non-performing loan and high credit risk. The study would be important as it provides theoretical as well as conceptual framework of different aspect of credit risk management that can be useful to the credit risk managers of the financial institutions for the corrective actions.

The study would provide information to the government agencies/regulators to formulate policies regarding credit risk management. Also be useful to the general public how bank and financial institutions are protecting their savings by managing potential credit risk. Besides this, the study will be useful to all other stakeholders i.e. Trade creditors, Investor, Stock brokers, Academicians, Policy formulators, General public to know the credit risk and quality assets of the sample banks.

5. Limitation of the Study

Basically this research is for the partial fulfillment of requirement of MBS. But the research shall have its own limitations which are listed below:

Limitation in research area: The commercial bank, development bank, finance company, and micro-finance financial institution are the four categories under which Nepal Rastra Bank has divided banks and financial institutions. However, this study will only be able to examine Nepal's commercial banks; it will ignore all other forms of financial institutions.

Time period: This study will use information from Nepalese commercial banks for the seven-year financial period from 2072/73 to 2078/79. Therefore, the information from this seven-year financial era may not reflect the outcomes from the past.

Sample size: The five commercial banks in Nepal will be used as a sample in this study. The profitability of the five Nepalese commercial banks used as a sample may not be accurate.

6. Literature Review

Review of literature means reviewing research studies of other relevant propositions in the related area of the study so that all the past studies, their conclusions and deficiencies may be known and further research can be conducted. This part of the study highlights available literature related to this research which makes base of

knowledge for the study. Review of literature is stock thinking of available literature in one's field of research. This part will involve the theoretical and empirical review of the literature in this research study. The related literature based on this topic has been derived from:

6.1 Review of Articles and Journals

Poudel (2012) carried out study in Nepal and it was published in the International Journal of Arts and Commerce. In this study, researcher examined the effect of credit risk management on banks' financial performance. He was used different variables to cover the study which were; default rate, cost per loan assets and capital adequacy ratio called explanatory variable. He collected data from financial report of 31 banks were used to analyze for eleven years (2001-2011) comparing the profitability ratio to default rate, cost of per loan assets and capital adequacy ratio which was presented in descriptive, correlation and regression was used to analyze the data. The study founded that all these parameters have an inverse impact on banks' financial performance; however, the default rate is the most predictor of bank financial performance. The empirical results showed that credit risk management is an important predictor of bank financial performance thus success of bank performance depends on risk management. He recommended that banks should design and formulate strategies that will not only minimize the exposure of the banks to credit risk but will enhance profitability. He also recommended that banks should put more emphasis on risk management and need to allocate more funds to default rate management and try to maintain just optimum level of capital adequacy

Lalon (2015) wrote research article in Bangladesh and it was published in the International Journal of Economics, Finance and Management Sciences. In this article, researcher remarked about the theoretical framework, importance, process, advantage and challenges of CRM. He also pronounces that the CRM practice and performance. Finally he tries to find out if there is any relationship between CRM performance and banks profitability. The researcher used secondary date and analyzed the data by using Ms Excel and SPSS software. In this study, the researcher founded that Credit risk management encompasses identification, measurement, matching mitigations, monitoring and control of the credit risk spotlights. The research result founded that there is a positive relationship between CRM practices and Banks profitability (ROA). This indicated that effective and efficient Credit Risk

Management can contribute on banks profitability. He mentioned in his study the main challenges of CRM practices are additional cost for training and employee motivation. He hoped that a very skillful and technically enhanced Credit Risk Management department can contribute to better practices of Credit Risk Management and that ensures smooth recovery of classified loan and maximize profitability of bank.

Ahemed & Malik (2015) conducted empirical study in Pakistan and it was published in the International Journal of Economics and Financial Issues. In this study, the researchers focused that the impact of credit risk management (CRM) practices on loan performance (LP) in microfinance banking sector of Pakistan. In this study, the researchers were gathered data from various managerial levels like: Top level, Middle level, and Lower level. He used different variables such as: a) Dependent Variable: Loan Performance (LP), actually which represent CRM; and b) four Independent Variables: Credit Terms (CTP), Client Appraisal (LCA), Collection Policy (CP), and Credit Risk Control (CRC). He also used descriptive and inferential statistical techniques to analyzed data. The study results founded that the credit terms and client appraisal have positive and significant impact on the LP at 1% significant level, while the CP and CRC have positive but insignificant impact on LP. The researcher hoped that this study results will be helpful to management for proper managing the credit risk and enhancing loan performance by focused on explanatory variables that are credit terms and client appraisal.

Kodithuwakku (2015) conducted empirical study in Sri Lanka and it was published in the International Journal of Scientific Research and Innovative Technology. In this study, they focused about the impact of credit risk management on the performance of commercial banks. The study was collected panel data from primary and secondary sources from 2009 to 2013 of selected banks based on superior performance and availability of data. The researcher used ROA (Return on Assets) as dependent variable (performance indicator); and Loan provision to Total (LP/TL), Loan Provision to Non-Performing Loans (LP/NPL), Loan Provision to Total Assets (LP/TA) and Non-Performing Loans/ Total Loans (NPL/TL) were used as independent variables (indicators of credit risk). The empirical result exhibited that non-performing loans and provisions have significantly argumentative impact on the

profitability. Therefore, the study recommended the banks to implement an effective tools and techniques to reduce the credit risk management.

Kipngetich & Muturi (2015) did empirical study in Kenya and it was published in the Strategic Journal of Business & Change Management. In this study, they focused the effect of credit risk management on the financial performance of savings and credit cooperative society. They were used two independent variables namely, capital adequacy and management efficiency; and one dependent variable that was financial performance. They had been used a cross-sectional descriptive research design to assessed the effects and data were collected from secondary sources. They utilized SPSS program to analyze the collected data and draw a regression model. The empirical results showed that capital adequacy and management efficiency had positive and statistically significant relationship with financial performance. This indicated that increase in capital adequacy and management efficiency leads to increase in financial performance.

Haneef et al (2012) carried out empirical study in Pakistan and it was published in the International Journal of Business and Social Science, Centre for Promoting Ideas, USA. In this study, the researchers were analyzed the impact of risk management on nonperforming loan and profitability of banking sector of Pakistan. The study was mainly secondary data based. In this study, they argued that there were no proper risk management techniques for managing risk in banking industry in Pakistan. They concluded that non-performing loans were increasing due to lack of risk management which threatens the profitability of banks. They suggested that banking sector can avoid their nonperforming loans by adopting methods suggested by state bank of Pakistan. One of the major drawbacks of the study was that they failed to justify their conclusion with empirically.

Siekelova A., Kollar B. and Weissova I. (2015) explained the Credit risk management was not so necessary, while sales of deferred payment has begun to dominate the prompt payment. The existence of receivables has become a necessity in the area of functional and effective market economy. Most of the receivables in the company have the form of trade credit. Therefore credit management as the management of trade credit has become very important. Insolvency four out of ten companies in the Slovak Republic is due to the delay or any payment of their receivables. Credit managers address important issues during their daily activities: the level of

indebtedness enterprises, which is due to the sale of invoice, the increase of indebtedness should be supported or stopped, the ability and willingness of customers to pay their commitments properly and timely, appropriately set criteria for individual credit segments of customers or if it is necessary to make a decision of choosing an effective tool for debt recovery. Article highlights to a correlation between the amount of receivables in the company and its solvency and underlines the importance of credit management and its principal activities. We will use the methods of formal logic such as analysis, synthesis and interpretation. The intention is to draw up basic theoretical principles for determining the credit limit for individual customers in the company.

Alshatti (2019) explained the effect of credit risk management on financial performance of the Jordanian commercial banks during the period (2005-2013), thirteen commercial banks have been chosen to express on the whole Jordanian commercial banks. Two mathematical models have been designed to measure this relationship, the research revealed that the credit risk management effects on financial performance of the Jordanian commercial banks as measured by ROA and ROE. The research further concludes that the credit risk management indicators considered in this research have a significant effect on financial performance of the Jordanian commercial banks. Based on findings, the researcher recommends banks to improve their credit risk management to achieve more profits, in that banks should take into consideration, the indicators of Non-performing loans/Gross loans, Provision for facilities loss/Net facilities and the leverage ratio that were found significant in determining credit risk management. Also, banks should establish adequate credit risk management policies by imposing strict credit estimation before granting loans to customers, and banks in designing 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, and banks need to put and devise strategies that will not only limit the banks exposition to credit risk but will develop performance and competitiveness of the banks.

Bhattarai (2020) investigated the effect of credit risk on the financial performance of commercial banks in Nepal. The balance panel data of ten commercial banks with 160 observations for the period of 2001 to 2016 have been used for the analysis. The

regression results revealed that capital adequacy ratio (CAR), non-performing loan ratio (NPLR), and management quality ratio (MQR) have significant relationship with the financial performance (ROA) of the commercial banks in Nepal. Similarly, credit to deposit ratio (CDR) and risk sensitivity (RS) have no significant impact on the financial performance of the commercial banks in Nepal.

Chhetri (2021) examined the effect of credit risk on the financial performance of commercial banks in Nepal. The panel data of seventeen commercial banks with 85 observations for the period of 2015 to 2020 have been analyzed. The regression model revealed that non – performing loan (NPLR) has negative and statistically significant impact on financial performance (ROA).Capital adequacy ratio (CAR) and bank size (BS) have negative and statistically no significant impact on financial performance (ROA). Credit to deposit (CDR) has positive but no significant relationship with the financial performance (ROA) and the study concluded that the management quality ratio (MQR) has positive and significant relationship with the financial performance (ROA) of the commercial banks in Nepal. The study recommends that, it is fundamental for Nepalese commercial banks to practice scientific credit risk management, improve their efficacy in credit analysis and loan management to secure as much as possible their assets, and minimize the high incidence of non-performing loans and their negative effects on financial performance.

7. Research Methodology

The Research methodology covers issues that relate to the type of data collected, the way it was collected, and analyzed. This part is the master plan of research study that we are going to study in the field to achieve the objective stated in the earlier chapter. In this part, it will contain research design, nature and source of data, population and sample data and data analysis and model to be analyzed which will ensure validity, reliability and ethical standards in the study.

7.1. Research Design

This study will be based on the descriptive and correlational research design to assess the relationship between independent variables and dependent variables. Descriptive research design will be used to explain fundamental characteristics of variables.

Correlational research design will be employed to investigate the relationship between credit risk management and profitability

7.2. Population and Sample

At present, there are 20 commercial banks are operating in Nepal. They constitute the population sample. Among of them, five commercial Banks will be selected seven years' data will be taken to conduct the study. The sampling technique used under this study will be purposive or judgmental sampling. The samples selection will be as follows:

i. Nabil Bank Limited (NABIL)

ii. Rastriya Banijya Bank (RBBL)

iii. Siddhartha Bank Limited(SBL)

iv. NIC ASIA Bank Limited (NICA)

v. Himalayan Bank Limited (HBL)

7.3. Source of data

Secondary source of data will be used for the fulfillment of the objectives of the study

7.4. Collection of Data

The study will be mainly based on the secondary data collected from the different published sources i.e. official websites of banks, annual reports, Basel and other disclosures of bank, data and information from NRB website as well as related different other websites etc.

7.5. Data Analysis tools and techniques

Data analysis is based on the objective of the study and will be done using statistical package for social sciences (SPSS) on collected data to draw meaningful interpretation and conclusion. The data has been collected from the above mentioned resources and analyzed by using statistical tools.

Various statistical tools will be used to analyze the data available to the researcher. These tools are used in research in order to draw the reliable conclusion through the analysis of financial data. Following tools will be used for are purposes:

i. **Average/Mean**

An average is a single value related from a group of values to represent them in some way, a value, which is supposed to stand for whole group of which it is a part, as typical of all the values in the group. There are various types of averages. The value of the Arithmetic Mean is obtained by adding together all the items and by dividing this total by the number of items.

Mathematically, Arithmetic Mean (AM) is given by,

$$\overline{X} = \frac{\sum X}{n}$$

Where, $\overline{X}$ = Arithmetic mean

Σx = Sum of all the values of the variable

n = Number of observations or year

ii. **Standard Deviation (SD)**

Risk is defined as the variability of the returns of a period. The one-period rate of return is the basic random variable used in measuring an investment's risk. One such measure of risk is the standard deviation. Standard deviation is defined as the positive square root of the mean of the square of the deviation taken from arithmetic mean. Risk on individual assets or standard deviation for assets can be calculated using historical returns with this equation. $\sigma = \sqrt{\frac{\sum(X-\bar{X})^2}{N}}$

$\sum(\mathrm{X} - \overline{\mathrm{X}})$= Sum of the squares of the deviations measured from mean, and

N = Number of Observations

iii. Coefficient of Variation (CV)

The coefficient of variation reflects the relation between standard deviation and mean. The relative measure of dispersion based on the standard deviations known as coefficient of variation. The coefficient of dispersion based on standard deviation multiplied by 100 is known as the CV. It is used for comparing variability of two distributions; the CV is defined as,

CV = $\frac{SD}{Mean} \times 100$, $\frac{\sigma}{\overline{X}}$ X 100

iv. Coefficient of Correlation (r)

Correlation analysis enables to have an idea about the degree and direction of the relationship between the two variables under study. However, it fails to reflect upon the cause and effect relationship between the variables. The coefficient of correlation, denoted by r is computed as under: $r = \frac{N\sum XY - \sum X.\sum Y}{\sqrt{N\sum X^2 - (\sum X)^2}\sqrt{N\sum Y^2 - (\sum Y)^2}}$

v. Regression Analysis:

Multiple regression analysis is a logical extension of the simple linear regression analysis. Instead of single independent variable, two or more independent variables are used to estimate the unknown values of a dependent variable. However the fundamental concept in the analysis remains the same. Multiple regression is defined as statistical device which is used to estimate (or predicts) the most probable value of dependent variable on the basis of known value of two or more independent variables. The following multiple regression equation is analyzed.

Multiple Regression Model

$ROA = \beta 0 + \beta 1CAR + \beta 2NPLR + \beta 3CDR + \beta 4MQR + ei.$

Where,

ROA = Return on Assets, (dependent variable)

CAR = Capital Adequacy ratio

NPLR = Non-performing Loan Ratio

CDR = Credit to Deposit Ratio

MQR = Management Quality Ratio

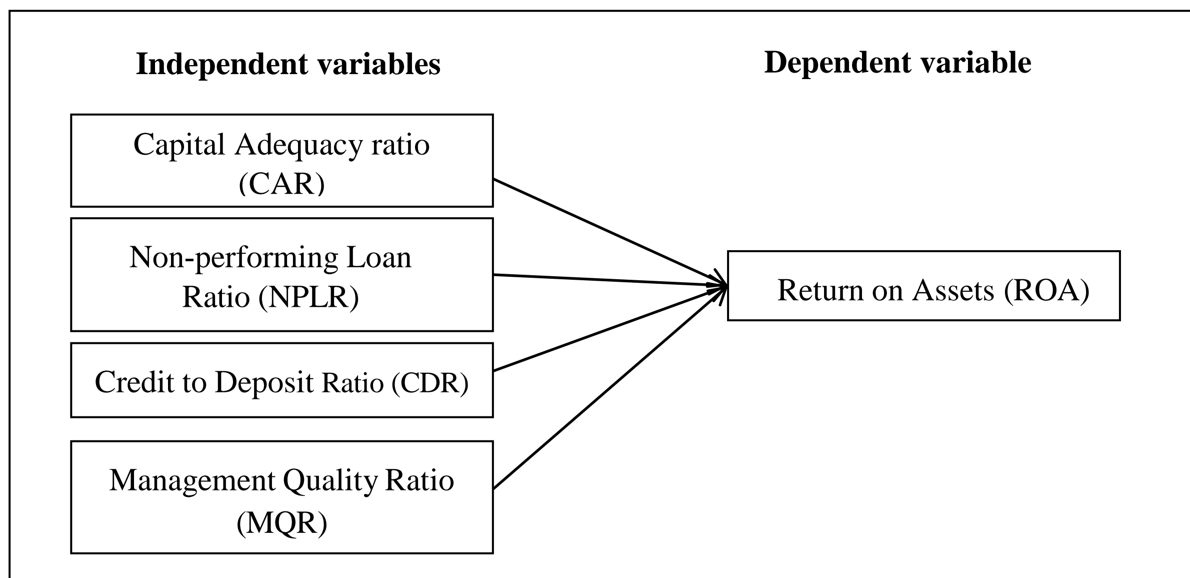
$\beta 0$ = Constant

βi = Beta Coefficient of slope of regression model and

ei = Error term

7.6 Theoretical Framework

Following framework shows CAR, NPLA, CDR and MQR as independent variable to measure the impact on Return on Assets. ROAS is used as the dependent variable.



Source: Karki, (2018)

Variables description

For this research, the study variables are described as follows;

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. The more the amount of ROA the better the efficiency of the bank management, (Gizaw, et al, 2015).

Capital adequacy ratio (CAR)

Capital adequacy is the capital expected to maintain balance with the risks exposure of the financial institution such as credit risk, market risk and operational risk, in order to absorb the potential losses and protect the financial institution's debt holder.

Non-performing loans ratios (NPLR)

Frost (2004) has argued that the asset quality indicators highlight the use of non-performing loans ratios (NPLR) which are the proxy of asset quality, and the allowance or provision to loan losses reserve. As defined in usual classification

system, loans include five categories: standard, special mention, substandard, doubtful and loss. NPL to Total Loans Ratio shows the direct relationship between volume of NPL and Total Loans. It indicates the portion of NPL in loan portfolio. A relatively lower ratio indicates a better quality of the loan portfolio.

Management Quality ratio (MQR)

Management soundness is a 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.

Credit to deposit ratio (CDR)

The credit to deposit ratio (CDR) is a major tool to examine the liquidity of a bank and measures the ratio of fund that a bank has utilized in credit out of the deposit total collected. This ratio measures the ability of the management to use the assets in offering loans which ultimately creates high profitability (Ibrahim, 2014). This ratio helps us showing the relationship between loans and advances which are granted and the total deposited collected by the bank.

8. Chapter Plan

On this research, the study is carried out through different stages and procedures, as it is necessary. The study has been organized on following chapters in order to make the study easy to understand.

Chapter-I: introduction

This chapter covers background of the study, focus of the study, statement of the problem, objectives of the study, significance of the study, theoretical framework, research hypothesis and , limitations of the study.

Chapter-II: Review of Literature

This Chapter is the brief review of literature related to this study. It includes a discussion on the conceptual framework and review of the major studies and research gap.

Chapter-III: Research Methodology

This chapter deals with the methodology followed to achieving the objective of the study, which include research design, population and sample, sampling procedure, collection of data and data analysis tools and techniques.

Chapter-IV: Results and Discussion

This chapter deals with presentation, analysis and interpretation of data, collected from various sources. It also includes the major finding of the study.

Chapter-V: Summary and Conclusion

This chapter includes brief sketch of the study, conclusions and recommendation or implications. Finally, references and appendices are also included at the end of the study.

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