Impact of Financial Risks on the Performance of Cooperatives in Nepal

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Abstract

The research aimed to assess the impact of financial risk on the performance of cooperatives in Nepal, focusing on credit, operational, and market risks are independent variables and financial performance is the dependent variable. The Research data was collected from financial statements and regulatory records spanning mid-July, 2015 to mid-July, 2024, though the dataset was unbalanced due to variations in the licensing years of the cooperatives. Descriptive statistics, including mean, standard deviation, and range, summarized the data, while correlation coefficient analysis examined the strength and direction of relationships between variables. Regression analysis explored the causal impact of financial risks on cooperative performance. The findings revealed that credit risk had a marginal but its positive effect on financial performance, operational risk had a significant and positive influence, and market risk demonstrated a substantial positive impact. The study underscores the importance of comprehensive risk management practices and recommends that cooperatives implement strategies addressing all dimensions of financial risk, including the recruitment of skilled risk management professionals, to enhance overall performance.

Keywords: *Financial Risks, Risk Management, Credit Risk, Operational Risk, Market Risk, Financial Performance, Cooperatives.*

Introduction

Particularly, cooperatives play a crucial role in financial inclusion by targeting individuals and organizations that are often excluded from formal banking systems. In Nepal, cooperatives provide essential financial services such as savings, loans, and other services to their members, thereby contributing to the economic development of local

communities. These cooperatives are member-owned and democratically controlled, with the aim of offering financial services at competitive rates, promoting economic benefits for their members .Globally, the cooperative movement has been rapidly growing. As of 2021, there are over 86,000 credit unions worldwide, with more than 375 million members across 118 countries (World Council of Credit Unions, 2021).

Cooperatives have emerged as the fastest-growing segment in the global financial system, significantly contributing to economic growth due to their essential role in collecting funds for redistributing the sources of consumers. National Credit Union Administration (2021), the United States is home to 5,099 federally insured credit unions, with approximately 124.3 million members and a total asset base of $1.85 trillion. This is compared to 5,236 credit unions in 2019, which had 120.40 million members and assets totaling $ 1.56 trillion. Member deposits saw a remarkable 56% increase in 2020, rising from $ 1.02 trillion to $ 1.59 trillion, while gross loans issued grew from $57.4 million to $71.9 million during the same period. Although total income generated in 2019 experienced a 5.7% increase, reaching $320 million, it fell by 11.7% to $ 282 million in 2020.

Kenya's financial sector is one of the most innovative in Africa and is ranked seventh in the world in terms of overall development (Bwana & Mwakujonga, 2013). The cooperative sector in Kenya has grown quickly, now ranking second in Africa for credit unions and first in terms of membership (WOCCU, 2021). Domestic savings through the cooperatives in Kenya have reached 400 billion, making up 33% of the country's total savings, and the total assets of cooperatives have crossed 300 billion. Kenya's cooperative movement is considered as the strongest in Africa and is among the top 10 worldwide. This shows that cooperatives play a key role in the country's social and economic progress (Kenya Union of Savings and Credit Co-operatives Limited, 2020).Cooperatives faced various risks in their daily operations, including operational, strategic, compliance, business, and financial risks (Maina, 2007). Among these, financial risk stands out as the most significant, as it directly impacts profitability and, consequently the financial performance of cooperatives (Njiru & Iraya, 2020).

The international and local studies reviewed in this research show conflicting results about how financial risks affect financial performance. Akindele (2012) concluded that

effective risk management improves company's performance. Similarly, Aduda and Gitonga (2011) found a positive link between risk management and financial success in Kenya banks. On the other hand, Muriithi et al. (2017) studied commercial banks and found that financial risks, especially liquidity risk, negatively affect their performance. These differences in findings indicate the need for further research. This study aims to fill the gap by examining how financial risks affect the financial performance of cooperative in Nepal. The main goal of this study is to find out how financial risks affect the financial performance of cooperatives in Nepal. It focuses on three types of risks: credit risk, operational risk, and market risk, as the main factors being studied.

Review of Literature

Serwadda (2018) carried out a study to see how credit risk management methods affect the performance of Mahila cooperative banks in Kalaburagi, India. The study looked at how identifying, analyzing, monitoring, and reducing credit risk influences how well the banks operate. Using data collected over time and from different banks, the study found that credit analysis, risk reduction, and recognizing credit risks had a strong positive effect on bank performance. Based on these results, the study suggested that women's cooperative banks should improve their credit analysis tools and strengthen their credit monitoring systems.

Kithuka and Ondabu (2024) conducted a pilot study to explore how managing operational risks is linked to the profitability of cooperatives in Kakamega County. They used a descriptive research approach and focused on four SACCOs in the area. To analyze the data, they used basic statistics like averages and standard deviations, along with other methods to study the relationship between the factors. The study found that better operational risk management is strongly connected to higher profitability in the cooperatives.

Gweyi (2018) studied how managing financial risks affects the financial performance of Deposit-Taking SACCOs (DT-SACCOs) in Kenya. The research looked at how controlling credit risk, interest rate risk, liquidity risk, and operational risk impacts performance, and also considered the effects of the size of the organization. The study used data from 135 DT-SACCOs collected between 2010 and 2015 and applied both basic and advanced statistical methods. The findings showed that properly managing these financial risks leads to better financial performance for the DT-SACCOs in Kenya.

Sohaimi (2013) explored the association between disclosures and liquidity risks, utilizing financial performance metrics such as deposits, liquidity gaps, cash holdings, and non-performing loans (NPLs). The study analyzed data sourced from publications, books, and financial records compiled by Bank Negara Malaysia, covering the period from 1997 to 2012. Multiple regression analysis was applied to evaluate the influence of liquidity risk on banks' capital and reserves. The findings indicated that NPLs exacerbate liquidity risk, significantly impacting the banks' capital reserves.

Conceptual Framework

A conceptual framework illustrates the relationship between credit risk, operational risk, and market risk (independent variables) and financial performance (dependent variable). It highlights how these risk factors impact the profitability and stability of financial institutions. Credit risk arises from potential loan defaults, operational risk from internal inefficiencies, and market risk from external economic fluctuations. Understanding these interactions helps in analyzing their collective influence on financial performance, providing a foundation for risk management strategies and improving decision-making in financial institutions.

Independent Variable   **Dependent Variable**

| Credit Risk |

| Operational Risk | | Financial Performance |

| Market Risk |
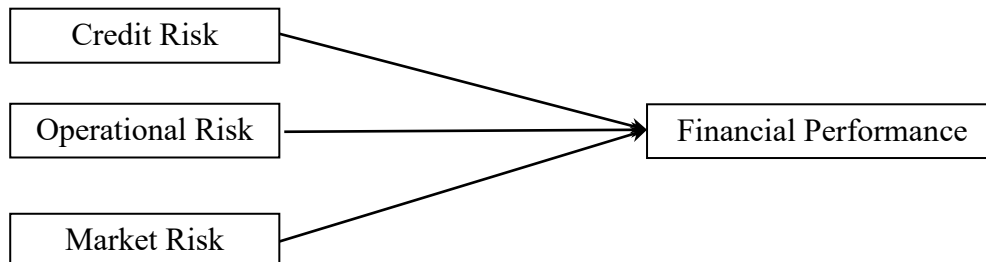
Hypothesis

Credit Risk:

Credit risk is the proportion of non-performing loan on total loan. Credit risk in cooperatives means the chance of losing money when members or borrowers don't repay their loans on time. This can hurt the cooperative by increasing loan defaults, reducing available cash, and putting pressure on resources needed for daily operations and development. According to Alshatti (2015), keeping non-performing loans low can help improve financial performance, even though there may not be a strong direct link between credit risk factors like capital adequacy and loan loss provisions and financial results.

H1: Credit risk has a significant impact on the financial performance of cooperatives.

Operational Risk

Operational risk in cooperatives refers to possible losses caused by poor systems, process failures, human mistakes, or outside events. These risks can disrupt operations, damage member trust, and reduce the cooperative's financial performance and growth. Meshack (2016) found that good operational risk management is positively linked to better financial performance in cooperatives.

H2: Operational risk has a significant impact on the financial performance of cooperatives.

Market Risk:

Market risk in cooperatives is the possibility of financial loss due to changing market conditions like interest rates, exchange rates, or commodity prices. These changes can affect investments, pricing, and financial stability. Kolapo and Fapetu (2015) found through fixed-effect regression analysis that interest rate risks had very little effect on cooperative performance.

H3: Market risk has a significant impact on the financial performance of cooperatives.

Methodology

This research adopted a descriptive research methodology to assess the contribution of financial risks to the financial performance of cooperative in Nepal. The study was carried out by using 120 observations from the dataset of 12 cooperatives from mid-July, 2015 to mid-July, 2024. All the secondary data was collected from the cooperative's financial records and individual cooperatives financial statements. The data for each variable was organized into an Excel file for analysis. The study defined financial performance was the dependent variable, while credit, operational, and market risks were the independent variables. The secondary data collection sheet facilitated the compilation of data from published reports, management reports, and other organizational documents in alignment with the study's variable operationalization for the period 2015–2024.

Descriptive statistics, to use the means and standard deviations, were employed to summarize the data. Inferential statistics, including panel data regression, were used to examine the relationships among the variables. Data analysis was performed using SPSS 27 version, with the coefficient of determination providing insights into the

strength of these relationships. Hypotheses were tested to determine the nature, magnitude, and direction of the interactions. Results were presented using tables and model regression analysis was conducted to evaluate the analytical relationship between the factors. In total, 120 observations were analyzed, representing the cooperatives over the study period.

Research Model

This study used an econometric model to explore how good governance affects the profitability of cooperatives in Nepal. It looks at five main factors legitimacy, participation, professionalization, accountability, and transparency as the independent variables that may influence cooperative performance. The performance of the cooperatives is measured using an overall score that reflects how successful and efficient. The general regression model used to analyze these relationships can be specified as follows:

$$\text{Financial Performance} = \beta_0 + \beta_1 (\text{Credit Risk}) + \beta_2 (\text{Operational Risk}) + \beta_3 (\text{Market Risk}) + \varepsilon \qquad ...(1)$$

In the regression model mentioned above, the dependent variable is performance, measured by the average performance score. The study measurement the effects of credit risk, operation risk and market risk on financial performance of cooperative.

Results and Discussion

The study looked at three main financial risks credit risk, operational risk, and market risk as the independent variables, while financial performance was the dependent variable. Different methods were used to measure these factors. The research included 120 observations, covering an average period between mid-July, 2015 and mid-July, 2024. It also highlighted the average (mean), standard deviation, and the highest and lowest values of each measure.

Descriptive Analysis

Descriptive statistics summarized and explain the main features of a dataset, providing an overview of variables like credit risk, operational risk, market risk, and financial performance. Measure such as mean, standard deviation, and range highlight data distribution, variability and central tendency, aiding in understanding the patterns and drawing initial insights.

Table 1

Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Credit Risk	.05072	.0428784	.0094	.2019
Operational Risk	.51652	.2887696	.0892	2.8027
Market Risk	.05771	.0384651	-.0911	.1542
Performance	.04352	.0299058	-.0576	.1199

The table 1 summarizes descriptive statistics for the variables Credit Risk, Operation Risk, Market Risk, and Financial Performance. The mean value of Credit Risk is 0.05072, with a standard deviation of 0.0428784, indicating moderate variability and values ranging from a minimum of 0.0094 to a maximum of 0.2019. Operation Risk has the highest mean at 0.51652, with a standard deviation of 0.2887696, reflecting substantial variability, and values ranging from 0.0892 to 2.8027, indicating some outliers. Market Risk has a mean of 0.05771 and the lowest standard deviation at 0.0384651, with values ranging from -0.0911 to 0.1542, showing less variability compared to other variables. Financial Performance has a mean of 0.04352, with a standard deviation of 0.0299058, and ranges from -0.0576 to 0.1199. This suggests that while Financial Performance is generally positive, some negative values indicate potential losses in certain instances. Overall, these statistics provide insights into the central tendency, spread, and range of the variables, which are understanding to their behavior in the context of the study.

Correlation Analysis

Correlation analysis looks at how strongly and in which direction the independent variables (credit risk, operational risk, and market risk) are related to the dependent variable (financial performance). It uses correlation coefficients to show how changes in these risks affect financial performance. This helps to understand how the risks are connected and supports better decision-making in managing those risks.

Table 2

Correlation Analysis

Variables	Credit Risk	Operational Risk	Market Risk	Performance
Credit Risk	1			
Operational Risk	-0.0342	1		
Market Risk	-0.0209	-0.7508	1	
Performance	-0.0470	-0.7406	0.9628	1

The table 2 presents the correlation coefficients between credit risk, operational risk, market risk, and performance. Credit risk shows a very weak negative correlation with operational risk (-0.0342), suggesting that changes in credit risk have minimal impact on operational risk. Similarly, credit risk has a weak negative correlation with market risk (-0.0209), indicating a negligible relationship between the two. Operational risk, in contrast, shows a strong negative correlation with market risk (-0.7508), meaning that as operational risk increases, market risk tends to decrease significantly. Regarding performance, it has a very weak negative correlation with both credit risk (-0.0470) and operational risk (-0.7406), implying that higher credit or operational risks slightly hinder performance. However, performance exhibits a very strong positive correlation with market risk (0.9628), suggesting that better performance is strongly associated with higher market risk. This indicates that market risk has a more direct and significant impact on performance than credit or operational risks.

From the coefficients table, the following panel regression model was fitted in equation (1):

$$\text{Financial Performance} = -0.0095 + 0.0034(\text{Credit Risk}) + 0.0140(\text{Operational Risk}) + 0.7900(\text{Market Risk}) + \varepsilon \qquad ...(2)$$

The regression equation shows the relationship between financial performance and the three risk factors: Credit Risk, Operation Risk, and Market Risk. The intercept (−0.0095) represents the baseline financial performance when all risk factors are zero, although its practical relevance may be limited if such conditions are unrealistic. The coefficient of Credit Risk (0.0034) suggests that a unit increase in Credit Risk leads to a small increase in financial performance by 0.0034 units, holding other risks constant. Operation Risk has a slightly higher impact, with a unit increase improving financial performance by 0.0140 units. Market Risk exerts the most significant influence, with a unit increase enhancing financial performance by 0.7900 units, highlighting its

dominant role among the risk factors. This model provides insight into how these risks collectively and individually influence financial performance, emphasizing the critical impact of Market Risk.

Regression Analysis

Regression analysis evaluates the relationship between independent variables (credit risk, operational risk, market risk) and the dependent variable (financial performance). It identifies the magnitude and direction of each variable's impact, enabling a deeper understanding of how risks collectively and individually affect financial outcomes. This helps inform strategic decision-making.

Table 3

Regression Analysis

Variables	Coefficients	Std. Error	T	P- Value
Credit Risk	.0034	.0130	0.26	0.7971
Operational Risk	.0140	.0028	4.88	0.0000
Market Risk	.7900	.0244	32.36	0.0000
R Square	0.14			
Adjusted R Square	0.12			
SEE	0.25			
F Statistics	15.02			

Dependent Variable: Performance

The regression results presented aim to assess the impact of credit risk, operational risk, and market risk on the dependent variable, likely representing financial performance. The coefficient for credit risk is 0.0034 with a high p-value of 0.7971, indicating an insignificant and negligible effect, suggesting that credit risk does not meaningfully influence the dependent variable in this context. In contrast, operational risk has a positive coefficient of 0.0140 and a highly significant p-value (0.0000), implying that it has a statistically significant and positive effect on performance. Similarly, market risk demonstrates a strong and significant influence, with a large coefficient of 0.7900 and a p-value of 0.0000, highlighting its substantial role in explaining variations in the dependent variable. The model's R-square value is 0.14, meaning that only 14% of the variance in the dependent variable is explained by the three risk variables, which is relatively low. The adjusted R-square, which accounts for the number of predictors, is slightly lower at 0.12, indicating limited explanatory power. Despite this, the overall

model is statistically significant with an F-statistic of 15.02, and the standard error of the estimate (SEE) is 0.25, reflecting the average deviation of the predicted values from the actual values. These results suggest that while the model is statistically valid overall, its predictive strength is modest, and additional variables may be needed to enhance its explanatory power.

The hypothesis testing assess the significance of relationships between credit risk, operational risk, market risk, and financial performance. If the hypotheses are supported, it indicates that these risks significantly influence financial performance, either positively or negatively. This provides critical insights for improving risk management strategies

Table 4

Result of Hypothesis

Hypothesis	Variable	Coefficient	t-Statistic	p-Value	Significance	Results
H1: Credit risk significantly impacts performance.	Credit Risk	0.003	0.26	0.797	Not significant	Credit risk has no significant impact.
H2: Operational risk significantly impacts performance.	Operational Risk	0.014	4.88	0.000	Highly significant	Operational risk positively impacts performance.
H3: Market risk significantly impacts performance.	Market Risk	0.791	32.36	0.000	Highly significant	Market risk positively impacts performance.

The results of the hypothesis testing help explain how different risks relate to financial performance. Credit risk has a very small positive effect (coefficient of 0.0034), but this effect is not meaningful or statistically significant, as shown by a t-value of 0.26 and a p-value of 0.7971. This means credit risk does not have a real impact on performance in this case. On the other hand, operational risk has a coefficient of 0.014, meaning that if operational risk increases by one unit, financial performance goes up by 0.014 units. This relationship is very strong, as shown by a t-statistic of 4.88 and a p-value of

0.0000, meaning the effect is highly significant. In the same way, market risk has the biggest impact, with a coefficient of 0.7909. This means that when market risk increases by one unit, financial performance goes up by almost 0.79 units. This strong relationship is supported by a high t-statistic of 32.36 and a p-value of 0.0000. Overall, the results show that operational and market risks play an important role in improving performance, while credit risk has little to no meaningful effect.

The analysis shows that credit risk has a very small and statistically insignificant effect on the financial performance of cooperatives. With a coefficient of 0.0034 and a high p-value of 0.7971, it's clear that credit risk does not play a meaningful role in performance here. This is different from earlier studies like Alshatti (2015), which found that managing bad loans can improve performance. The small impact of credit risk in this case might be because these cooperatives have good loan recovery systems or fewer risky loans. Still, it's important to keep improving credit analysis and monitoring to prevent problems in the future.

On the other hand, operational risk has a clear positive impact on financial performance, with a coefficient of 0.014 and a p-value of 0.0000. This matches Meshack's (2016) study, which also found that managing operational risks helps cooperatives succeed. Since operational risk varies a lot, shown by its high standard deviation, improving internal controls and processes can greatly help boost performance. Cooperatives should focus on reducing human errors, fixing system problems, and handling outside disruptions to keep operations running smoothly and support growth.

Market risk has the strongest effect on financial performance among the three risks. With a coefficient of 0.7909 and a p-value of 0.0000, market risk has a very strong positive connection to performance. This agrees with Kolapo and Fapetu's (2015) research, which showed that market changes greatly affect cooperative success. Because market risk is so important, cooperatives need to use smart strategies to handle market ups and downs, like protecting themselves against interest rate changes and spreading out investments. By managing market risks well, cooperatives can improve financial stability and achieve long-term success.

Conclusion

The analysis concludes that credit risk has the insignificant impact on cooperatives performance. The P value of credit risk is 0.7971 which indicates that there is no any sufficient evidences in favor of research hypothesis. On the other hand, the regression coefficients of operational risk (0.0140) and the market risk (0.7909) are positive and statistically significant at 1% level of significance. The significant positive coefficients confirmed that market risk and operational risk both have the significant positive impact on cooperatives performance.

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