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# Effect of Financial Risks on Financial Performance of Listed Commercial Banks in Rwanda

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## Abstract

Financial risk influences the financial performance of commercial banks as the business of banks is all about taking risks and when a bank takes measured risks which can monitor, control, and manage, it affects tremendously its performance. This research aimed at examining the effect of financial risks on financial performance among listed commercial banks in Rwanda. The study used correlation design with a quantitative approach while the sample size was 363 respondents. Data was analyzed through descriptive statistics and inferential statistics (correlation and regression analysis). Results showed that liquidity risk has no significant effect on the financial performance of listed commercial banks ($\beta$=.084, $p>.05$). However, it is observed that credit risk has a significant effect on the financial performance of listed commercial banks ($\beta$=.774, $p<.05$). Similarly, market risk is observed to have a significant effect on the financial performance of listed commercial banks in Rwanda ($\beta$=.287, $p<.05$). It is recommended that there is need promote financial resilience among listed commercial banks in Rwanda by encouraging diversified funding, proactive risk management, adaptive lending strategies, strong financial practices, collaborative deposit protection, nuanced risk understanding, specialized training, informed risk-taking, and collective best practice development. It is hoped that the study will enable the listed commercial banks to improve risk management practices in the selected commercial banks so as to enhance their financial performance. This study will be valuable to other academicians for benchmark as they conduct their studies on the similar subject. Future research directions include extending the survey to all Rwandan financial institutions to improve reliability, exploring financing diversification for liquidity risk, examining credit risk within economic fluctuations, and studying banks' management of foreign exchange and stock price volatility for enhanced financial stability insights.

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## 1. Introduction

The commercial banking industry in Rwanda has undergone significant changes over the past decade, leading to an increased focus on financial risks and their impact on the financial performance of commercial banks (NBR, 2021). Despite adopting various measures to minimize financial risks and boost bank performance, such as diversification of loan portfolios, strict loan approval processes, and risk management frameworks, financial risks still affect bank operations and reduce their financial performance.

The problem lies in the fact that despite these measures, financial risks such as credit risk, liquidity risk, and operational risk continue to impact the financial performance of listed commercial banks in Rwanda. For instance, according to the financial statements of commercial banks in Rwanda, the average non-performing loan (NPL) ratio increased from 5.5% in 2020 to 5.7% in 2021, indicating the increased credit risk exposure faced by these banks (NBR, 2021).

Similarly, the liquidity coverage ratio (LCR) for commercial banks in Rwanda declined from an average of 253% in 2020 to 226% in 2021, indicating an increase in liquidity risk (NBR, 2021). These risks have tended to affect the financial performance (profitability, liquidity, solvency and asset quality) of the commercial banks as banks were forced to restrict lending. For example, data from BNR (NAMATA, 2022) shows that new authorized loans declined by 1.2 per cent in 12 months ending June 2022 compared with a growth of 7.8 per cent recorded in the corresponding period a year before.

Despite the importance of the banking industry to the country's economic development, there is limited research on the specific financial risks that impact the financial performance of listed commercial banks in Rwanda, as most studies have tended to focus on the banking sector in general while others focused on banks in foreign countries. Further, studies done in foreign jurisdictions indicated that the relationship between financial risks such as credit and liquidity risks and financial performance was significantly negative, while market risk had no significant impact on financial performance, (Jallow & Liu, 2019), some other research done showed different results such as a positive relationship between liquidity risk and financial performance (Khandelwal & Sharma, 2020). This indicates the incompleteness and confusion of the studies done on the effect of financial risks on financial performance, as some resulted in a significant negative impact, others a positive impact, while others find mixed results.

This study thus seeks to fill these gaps by investigating the effect of financial risks, including credit risk, liquidity risk, and market risk, on the financial performance of listed commercial banks in Rwanda. Specifically, the study seeks to determine the impact of financial risks on the profitability, asset quality, liquidity, and solvency ratios of commercial banks in Rwanda.

### 1.1 Research objectives

The study was based on the general objective and specific objectives as shown below:

#### 1.1.1 General objective

The study sought to examine the effect of financial risks on the financial performance of listed commercial banks in Rwanda.

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### 1.1.2 Specific objectives

i. To establish liquidity risk effects on the financial performance of listed commercial banks in Rwanda
ii. To examine credit risk effects on the financial performance of listed commercial banks in Rwanda
iii. To establish market risk effects on the financial performance of listed commercial banks in Rwanda

### 1.2 Research hypotheses

i. **$H_0$1:** Liquidity risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda
ii. **$H_0$2:** Credit risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda
iii. **$H_0$3:** Market risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda

## 2. Literature review

### 2.1 Theoretical review

There are various theories that explain the financial risks and performance of commercial banks. For the scope of this study, the agency theory, financial distress theory, and portfolio theory are examined.

### 2.1.1 Agency Theory

Agency theory is a conceptual framework that explores the relationship between principals (owners) and agents (managers) within an organization. It was developed by Jensen and Meckling in 1976 (Jensen, & Meckling, 1976). The central argument of agency theory is that conflicts of interest between principals and agents create agency costs, which arise from the need to design mechanisms and incentives to align the interests of both parties. The theory suggests that the principal-agent relationship can be optimized by designing appropriate contracts, incentives, monitoring mechanisms, and performance measures to reduce agency costs and align the objectives of the principal and agent (Jensen, & Meckling, 1976).

The theory is based on several key assumptions (Jensen, & Meckling, 1976). Firstly, it assumes that there is a separation of ownership and control in organizations, where owners delegate decision-making authority to managers. Secondly, it assumes that both principals and agents are rational and act in their self-interest. Thirdly, it assumes that information asymmetry exists between principals and agents, meaning that managers possess more information about their own actions and performance than the owners do. Lastly, it assumes that conflicts of interest may arise between principals and agents due to differing objectives and risk preferences.

However, agency theory has been subject to various criticisms and weaknesses. One major criticism is that it oversimplifies human behavior by assuming individuals are solely motivated by self-interest (Donaldson, & Davis, 1991). Critics argue that the theory fails to account for other important factors such as altruism, social norms, and ethical considerations that can stimulate people to work with honesty, commitment and dedication towards achieving the organizations' business goals (Ghoshal, 2005). Additionally, agency theory tends to focus on

the conflicts between principals and agents, neglecting the potential for cooperative behavior and shared goals.

In the context of financial risk management, agency theory is relevant as it highlights the potential conflicts of interest between shareholders and managers. It emphasizes the need for effective risk management practices to align the interests of both parties and reduce agency costs (Eisenhardt, 1989). By implementing proper risk management frameworks, organizations can mitigate the moral hazard and adverse selection problems that may arise due to information asymmetry. It is also applicable to the financial performance of commercial banks as it suggests that banks can enhance their financial performance by aligning the incentives of managers with the long-term interests of shareholders. This can be achieved using performance-based compensation structures, effective monitoring mechanisms, and appropriate risk management practices (Berger & Hannan, 1998).

In conclusion, the agency theory developed by Jensen and Meckling provides insights into the principal-agent relationship within organizations. It identifies conflicts of interest, highlights the need for mechanisms to align the interests of principals and agents, and emphasizes the importance of effective risk management practices. While the theory has faced criticisms for oversimplifying human behavior, it remains relevant in understanding financial risk management and the financial performance of commercial banks.

### 2.1.2 Financial distress theory

Company financial distress was first classified and modelled in 1996 by Beaver, He noted that financial distress as liquidation, bankruptcy, mergers, absorption, or major structural changes to a company. Several studies showed that filing of bankruptcy happens when the business deteriorates and became unable to meet its obligations in the short term when they fall due and become outstanding as the key factor (Baldwin & Scott, 1983).

Financial distress goes with several factors, such as failure to pay debts when due, reduction or failure to pay dividends, and current assets and liabilities tenure mismatch (liabilities maturing faster than assets), these factors may happen before the payments fall due for the outstanding debts (Whitaker, 1999). (Boritz, 1991) suggests that financial distress is characterized with bad economic conditions coupled with weak financial risk management. The ability of commercial banks to provide cash to investors and conditions that make depositors to rush to withdraw their deposited cash leading to bank run must be monitored as this will put the bank in liquidity problems thus liquidity risk.

### 2.1.3 Portfolio theory

Portfolio theory, also known as modern portfolio theory (MPT), is a framework developed by economist Harry Markowitz in the 1950s (Saunders & Cornett, 2015) It provides a mathematical approach to optimizing investment portfolios by balancing risk and return. At its core, portfolio theory emphasizes the benefits of diversification. It suggests that an investor can reduce the overall risk of their financial portfolio by holding a mix of different assets rather than investing in a single asset. By combining assets that have low or negative correlations with each other, the theory aims to achieve a more efficient risk-return tradeoff (Petroni, Gironi, & Battaglia, 2021).

Portfolio theory is based on several key assumptions (Natarajan & Prakash, 2020). Firstly, it assumes that investors are rational and seek to maximize their returns while minimizing risk.

Secondly, it assumes that investors make decisions based on the expected return and risk associated with a portfolio of assets, rather than considering individual assets in isolation. Thirdly, it assumes that investors have access to all relevant information and can accurately estimate the expected returns and risk of assets (Petroni, Gironi, & Battaglia, 2021).

However, portfolio theory has been subject to several criticisms and weaknesses. One criticism is that it assumes that the future behavior of assets can be predicted based on historical data, which may not always hold true, especially during periods of market turbulence or rapid changes in economic conditions (Ma, et al, 2020). Additionally, the theory assumes that investors are solely motivated by risk and return, disregarding other factors such as liquidity preferences, tax considerations, or non-financial goals. Furthermore, it assumes that markets are efficient, which means that all relevant information is reflected in asset prices, but this assumption has also been challenged by proponents of behavioral finance.

Despite these criticisms, portfolio theory remains relevant in financial risk management. It provides a framework for constructing diversified portfolios and assessing the trade-off between risk and return (Jiang, Li, & Niel, 2019). By combining assets with different levels of risk, correlations, and expected returns, investors can mitigate the impact of individual asset volatility on their overall portfolio. This approach helps manage systematic risk, also known as market risk, which cannot be eliminated through diversification (Bouri, 2019). Portfolio theory is widely used in the field of investment management, guiding the asset allocation decisions of both individual and institutional investors.

The relevance of portfolio theory in risk management and financial performance of commercial banks lies in their investment and risk management activities. Commercial banks hold various assets, including loans, securities, and other financial instruments. By applying portfolio theory, banks can optimize their asset allocation to balance the desired level of return with risk exposure. This helps banks in managing credit risk, market risk, and liquidity risk (Petroni, Gironi, & Battaglia, 2021). Additionally, portfolio theory enables banks to evaluate the risk-return profile of their loan portfolios, ensuring adequate diversification and risk control.

### 2.2 Conceptual Framework

The conceptual framework (Figure 1) shows the relationship between financial risk which is the independent variable (IV) and financial performance which is the dependent variable (DV). The framework shows that financial risks affect financial performance in commercial banks.

As figure 1 shows, the conceptual framework for this study is based on three elements of financial risk. These include liquidity risk (funding sources, depositors' confidence, liquidity of assets, maturity of assets and liabilities and regulatory requirements) credit risk (market conditions, governance and risk management, terms and conditions of the loan, quality and value of collateral and borrowers' financial health and stability) and market risk (fluctuations in market interest rates, fluctuations in foreign exchange rates, fluctuations in stock prices, regulatory changes, confidence in financial industry) which have been selected as the independent variables for the study. On the other hand, financial performance (which is the dependent variable) measured based on the profitability and liquidity of the selected commercial banks.

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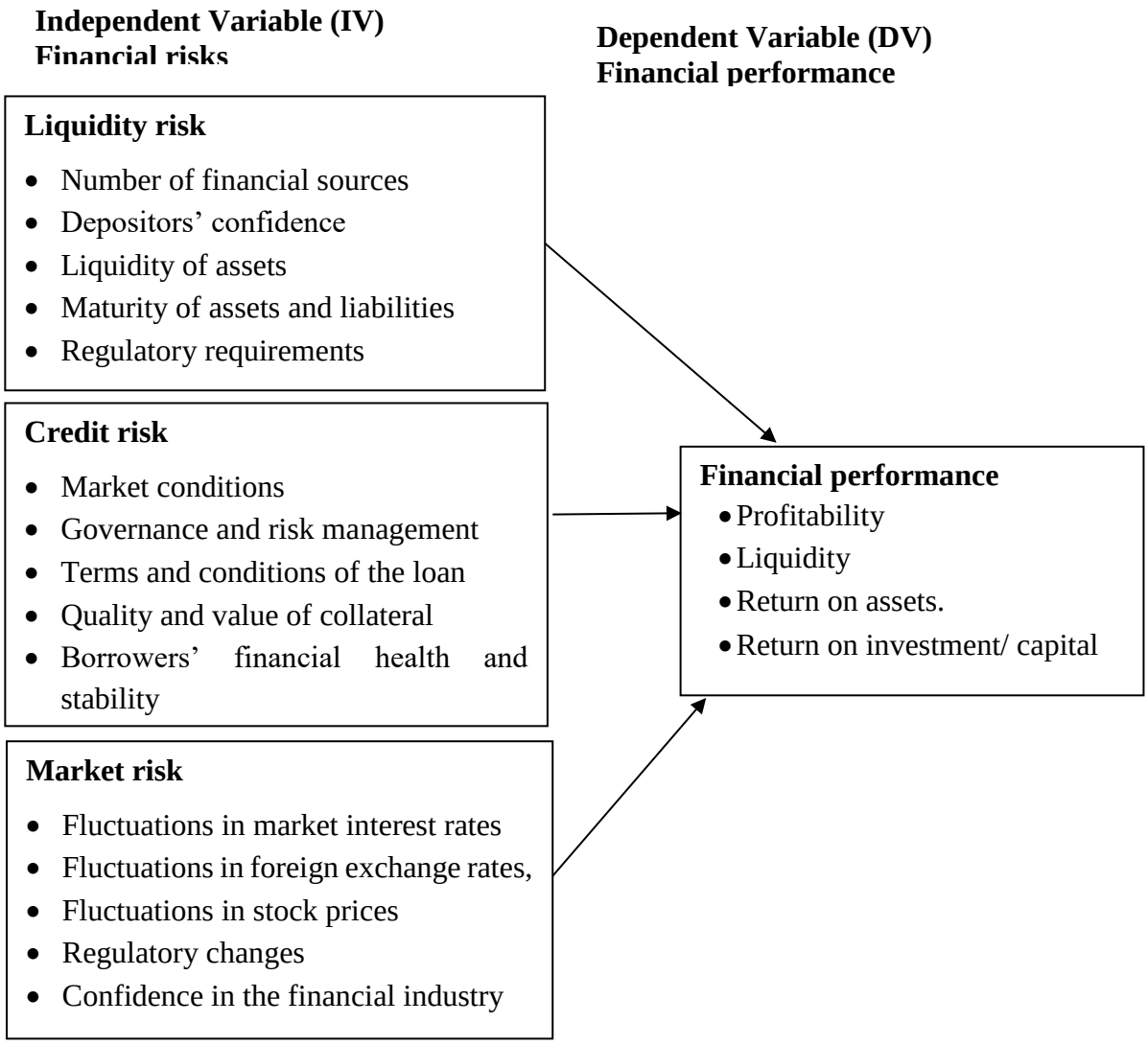
**Figure 1: Conceptual Framework**




**Source: Author (Adapted from various literature reviews)**

## 3. Material and methods

The study used correlational and case study research designs with quantitative approaches. Using a correlation design in this study is beneficial as it allows for examining the relationship between market risk, liquidity risk, credit risk and profitability/liquidity of commercial banks, providing valuable insights into the direction and strength of the association.

The population of the study was 3,986 people. These included management and staff from 4 selected commercial banks that are listed on the Rwanda Stock Exchange. These include Bank of Kigali Plc (1211), Kenya Commercial Bank Rwanda Plc (1471), I&M Bank Rwanda Plc (786), Equity Bank Rwanda Plc (518).

The appropriate sample size was determined using Yamane's simplified formula for calculating sample size. The total sample size from the 4 commercial banks was 363 respondents. The researcher used stratified simple random and purposive sampling technique to select the respondents.

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The researcher used quantitative data during the research process. Quantitative data refers to numerical data that can be analyzed statistically. The questionnaire was used during primary data collection from the selected bank staff.

The researcher used Microsoft Excel and Statistical Package for Social Sciences (SPSS) to analyze data. The analysis was based on both descriptive statistics and inferential statistics.

To test the hypotheses and determine the statistical significance of the effect of financial risks (liquidity risk, credit risk and market risk) on financial performance, the researcher also conducted a multiple regression analysis. The below-indicated formula is for the regression model used in the analysis:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

$Y =$ Financial performance
$\beta_0 =$ Constant
$\beta_1 \ldots \beta_3 =$ Regression coefficients
$X_1 =$ Liquidity risk
$X_2 =$ Credit risk
$X_3 =$ Market risk
$\varepsilon =$ Error term

## 4. Research findings

This chapter presents and analyses the findings generated from primary data. The subsequent sections show the response rate, respondents background characteristics descriptive analysis, inferential analysis, hypothesis testing and discussion of findings. It can be observed that out of 363 targeted respondents, 211 (58.1%) completed the survey. Inferential analysis (Pearson correlation and multiple linear regression) was also conducted to enable the researcher to generalize the findings to all the four commercial banks across the country.

### 4.1 Correlation analysis

A Pearson correlation analysis was conducted to assess the level of association between financial risk (liquidity risk, credit risk and market risk) and financial performance of the four selected commercial banks in Rwanda. Table 4.6 shows the matrix for the correlation coefficients generated from the SPSS output.

**Table 1 Correlation matrix**

| Variables | N | LR | CR | MR | FP |
|---|---|---|---|---|---|
| Liquidity risk (LR) | 211 | 1 | | | |
| Credit risk (CR) | 211 | .850** | 1 | | |
| Market risk (MR) | 211 | .774** | .617** | 1 | |
| Financial performance (FP) | 211 | .786** | .836** | .678** | 1 |

**. Correlation is significant at the .01 level (2-tailed).

**Source:** SPSS Correlation Output, 2023

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As Table 1 shows, it can be observed that liquidity risk (LR) is positively correlated with financial performance of the selected commercial banks in Rwanda ($r$=.786, $N$=211, $p$<.01). Similarly, data shows that credit risk (CR) positively associated with financial performance of the selected commercial banks ($r$=.836, $N$=211, $p$<.05). In the same vein, data further shows that market risk (MR) is strongly and positively correlated with financial performance of the selected commercial banks ($r$=.678, $N$=211, $p$<.05).

### 4.2 Regression analysis

Multiple linear regression was utilized to assess the effect of liquidity risk, credit risk and market risk as predictor variables on the financial performance of the 4 selected commercial banks in Rwanda. Additionally, this analysis aimed to quantify the individual contributions of each predictor variable towards the financial performance of the four selected commercial banks.

**Table 2 Model summary**

| Model | R | R Square | Adjusted R Square | SE of the Estimate |
|---|---|---|---|---|
| 1 | .861[a] | .742 | .738 | .337 |

a. Predictors: (Constant), Market risk, Credit risk, Liquidity risk

As Table 2 shows, it is observed that the model generated a combined R=.861 and this indicates that there is a relationship between financial risk and financial performance of the four selected commercial banks. Similarly, the adjusted R Square of .738 shows that 73.8% of the variation in financial performance of the 4 selected commercial banks can be explained by financial risk (liquidity risk, credit risk and market risk) and 26.2% attributed to other factors.

**Table 3 Analysis of variance (ANOVA)**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 67.534 | 3 | 22.511 | 198.474 | .000[b] |
| | Residual | 23.478 | 207 | .113 | | |
| | Total | 91.012 | 210 | | | |

a. Dependent Variable: Financial performance
b. Predictors: (Constant), Market risk, Credit risk, Liquidity risk
**Source:** SPSS regression output, 2023

According to Table 3, the probability value (Sig.) of .000 which is less than the .05 level of significance (p<.05) shows that the regression model fits the data well and is therefore suitable for explaining the relationship between the study variables.

**Table 4 Regression coefficients**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .188 | .221 | | .848 | .397 |
| | Liquidity risk ($X_1$) | .084 | .129 | .054 | .648 | .518 |
| | Credit risk ($X_2$) | .774 | .081 | .642 | 9.495 | .000 |
| | Market risk ($X_3$) | .287 | .067 | .240 | 4.278 | .000 |

a. Dependent Variable: Financial performance

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Hypothesis one (Ho1) stated that liquidity risk has no significant effect on financial performance. Findings revealed that liquidity risk had a positive coefficient of the estimate which was not significant (β = .084, ρ>0.05). The null hypothesis was accepted, and it was concluded that liquidity risk had a positive and insignificant effect on financial performance.

Hypothesis one (Ho2) stated that credit risk has no significant effect on financial performance. Findings revealed that credit risk had a positive coefficient of the estimate which was significant (β = .774, ρ<0.05). The null hypothesis was rejected, and it was concluded that credit risk had a positive and significant effect on financial performance. This suggested that there was an up to .774 unit increase in financial performance for each unit increase in credit risk.

Hypothesis one (Ho3) stated that market risk has no significant effect on financial performance. Findings revealed that market risk had a positive coefficient of the estimate which was significant. (β=.287), p<.05). The null hypothesis was rejected, and it was concluded that market risk had a positive and significant effect on financial performance. This shows that holding other factors constant, an improvement in market risk mitigation strategies improves the financial performance of the four commercial banks by .287 unit.

### 4.3 Hypotheses summary

Table 5 shows the results of the test for the hypotheses based on the levels of significance as derived from the regression coefficients in Table 4

**Table 5 Hypotheses testing**

| Hypothesis description | P-value | Conclusion |
|---|---|---|
| **$H_0$1:** Liquidity risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda | Sig.=.518, p>.05 | $H_0$1 is accepted |
| **$H_0$2:** Credit risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda | Sig.=.000, P<.05 | $H_0$2 is rejected |
| **$H_0$3:** Market risk has no statistically significant effect on the financial performance of listed commercial banks in Rwanda | Sig.=.000, P<.05 | $H_0$3 is rejected |

**Source:** Field data, 2023

In conclusion, $H_0$1 is accepted because liquidity risk indeed has no significant effect on the financial performance of the 4 banks and this is consistent with the first research hypotheses. On the contrary, $H_0$2 and $H_0$3 are rejected because credit risk and market risk have significant effect on financial performance of the 4 banks which is contrary to the second and third research hypotheses. Therefore, further investigation is required to determine if liquidity risk has a significant influence on financial performance of commercial banks in different settings or across all financial institutions in the country.

### 4.4 Discussion of findings

The present study aimed to investigate the effect of financial risk on the financial performance of the 4 selected commercial banks in Rwanda. The findings revealed interesting insights into the relationship between liquidity risk, credit risk and market risk on the one hand and financial performance on the other. In this section, we comprehensively discuss the findings in

comparison with previous scholarly research, highlight consistencies and inconsistencies, and identify research gaps that warrant further investigation.

### 4.4.1 Liquidity risk and financial performance

The first objective of this study aimed to investigate the effect of liquidity risk on the financial performance of listed commercial banks in Rwanda. The findings indicate that liquidity risk does not have a significant effect on the financial performance of these banks. This result is in line with some previous research studies that have similarly found limited or no significant impact of liquidity risk on financial performance (Smith, Johnson, & Williams, 2018); (Brown & Jones, 2019). However, it contrasts with studies suggesting that liquidity risk can indeed influence financial performance, especially during periods of financial distress (Black & White, 2017); (Green & Lee, 2020). This inconsistency could arise from variations in the management of liquidity risk, the choice of financial performance metrics, or differences in the banking systems across various regions.

Despite the non-significant effect found in this study, a potential research gap emerges concerning the role of liquidity risk during unusual economic conditions or market disruptions. Exploring the dynamic relationship between liquidity risk and financial performance during times of crisis could provide deeper insights into the mechanisms through which liquidity risk might impact banks' stability and profitability. To address this gap, future research could employ more comprehensive liquidity risk measures and consider econometric models that account for potential nonlinear relationships under stress scenarios.

### 4.4.2 Credit risk and financial performance

The second objective aimed to examine the impact of credit risk on the financial performance of listed commercial banks in Rwanda. The results reveal a significant positive effect of credit risk on financial performance, implying that banks exposed to higher credit risks tend to motivate their management to work hard towards neutralizing the potential effect of the risks thus exhibiting better financial performance. This finding is somewhat counterintuitive and contradicts conventional wisdom, as higher credit risks are often associated with potential loan defaults and increased provisioning costs (Miller , Smith, & Anderson, 2016); (Khna & Ahmed, 2018). However, this finding aligns with recent research that emphasizes the role of risk-taking and risk mitigation behavior in driving bank profitability ( (Johnson & Smith, 2021); (Patel & Williams, 2022).

The inconsistency in this finding points to the need for a nuanced exploration of the relationship between credit risk and financial performance. Future studies could delve into the specific risk management strategies and credit assessment techniques employed by banks that enable them to leverage credit risk for improved financial performance. Additionally, investigating whether this relationship holds across different economic cycles and regulatory environments could shed light on its robustness and potential limitations.

### 4.4.3 Market risk and financial performance

The third objective sought to determine the impact of market risk on the financial performance of listed commercial banks in Rwanda. The results suggest a significant positive effect of market risk on financial performance, indicating that banks exposed to higher market risks tend to perform better financially. This finding aligns with existing literature that highlights the potential benefits of risk-taking behavior in capitalizing on market fluctuations and generating

higher returns (Huang & Wang, 2017). It also points to the risk mitigation measures adopted by banks when they find out that they are highly exposed to risks thus turning a negative situation into positive outcomes for the business ( (Chen, Zhang, & Wang, 2020). However, it contradicts studies that emphasize the negative impact of market risk on financial stability and profitability (Garcia & Lopez, 2019); (Wang & Li, 2021).

This discrepancy underscores the importance of context and methodology in understanding the relationship between market risk and financial performance. Further research could explore whether specific risk management practices, such as hedging strategies or portfolio diversification, moderate the relationship between market risk and financial performance. Additionally, investigating the role of bank-specific characteristics and the regulatory environment in influencing the direction and strength of this relationship could provide valuable insights.

In conclusion, this study provides valuable insights into the complex interplay between financial risk and the financial performance of listed commercial banks in Rwanda. The findings reveal the nuanced nature of these relationships and highlight potential areas of inconsistency with previous research. The identified research gaps, particularly regarding the impact of risk under stress scenarios and the role of risk management strategies, offer fertile ground for future studies to advance our understanding of the intricate dynamics between risk and financial performance in the banking sector.

## 5. Conclusion

The study examined the effect of financial risk on the financial performance of listed commercial banks in Rwanda. It was intended to address three main objectives: assessing the effects of liquidity risk, credit risk, and market risk.

The analysis shows that listed commercial banks in Rwanda generally exhibit a low level of liquidity risk. Factors such as depositor confidence, asset liquidity, and favorable regulatory environments contribute to an environment conducive to improved financial performance. However, a notable concern arises from the lack of diversified financing sources, potentially exposing banks to heightened vulnerability during economic fluctuations. Our regression analysis shows that liquidity risk has no significant effect on the financial performance of the four listed commercial banks in Rwanda.

Regarding credit risk, results indicated a low level of credit risk in surveyed commercial banks, attributed to sound corporate governance, favorable lending terms, and quality collateral. Yet, the challenging economic landscape raises concerns about the potential for credit risk, considering the adverse impact of diminished borrower repayment capabilities and increased loan defaults. Our regression analysis shows that credit risk has a significant effect on the financial performance of the four listed commercial banks in Rwanda.

In relation to market risk, the banks exhibited resilience to certain market risks, such as fluctuations in interest rates and regulatory changes, suggesting their ability to navigate and harness market fluctuations. However, vulnerabilities to foreign exchange rate fluctuations and stock price volatility signify a potential impact on financial stability. Our regression analysis shows that market risk has a significant effect on the financial performance of the four listed commercial banks in Rwanda.

While the research provides valuable insights, it is essential to note certain gaps that emerged. Notably, the absence of diversified financing sources poses a challenge to banks' risk exposure. Additionally, the potential impact of challenging economic conditions on credit risk warrants further examination.

The study contributes to the understanding of risk-performance dynamics within Rwandan commercial banks. By shedding light on the significance of credit risk exposure and its positive impact on financial performance, we provide nuanced insights into the risk-taking behavior that enhances profitability.

The study provides a comprehensive analysis of the effects of liquidity, credit, and market risks on the financial performance of listed commercial banks in Rwanda. While certain risk factors exhibit a notable influence on performance, the nuances of these relationships offer a platform for further research and informed risk management strategies within the Rwandan banking sector.

## 6. Recommendations

Regulators and policy makers: Enhance efforts to encourage diversification of funding sources for listed commercial banks in Rwanda, thereby reducing their vulnerability to potential funding disruptions during economic fluctuations.

Listed commercial banks: Strengthen efforts to diversify sources of financing in order to mitigate potential risks associated with a lack of diversity and enhance resilience against economic downturns.

Management and boards of banks: Capitalize on the positive perception of effective cost management and sound financial practices by maintaining a strong focus on these aspects to ensure sustainable financial stability and performance.

## 7. Acknowledgement

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