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Credit Risk and Bank Performance: an empirical evidence In the Philippine Context

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Abstract: *Credit risk is one of the most significant banking risks, which entails the borrower's failure to meet contractual obligations. Credit risk and bank performance in Philippine rural banks from 2018 to 2022 are examined in this study. The Bangko Sentral ng Pilipinas' rural banks' publicly available financial statements are used to evaluate this association. The study utilizes a quantitative research method. The data were analyzed using the Kendall's Tau correlational research design. The study encompasses a total enumeration of 92 rural banks in the Philippines. Bank performance is measured using return on equity. The loanloss provision ratio quantifies the credit risk. Moreover, the results demonstrate that credit risk exerts a detrimental and somewhat substantial impact on bank performance. As the level of credit risk rises, the financial performance of rural banks declines. This implies that Philippine rural banks must adequately and carefully manage their credit risk to ensure financial stability and performance.*

Keywords: Bank Performance, Credit Risk, Loanloss Provision, Return on Equity, Rural Banks in the Philippines

I. INTRODUCTION

The banking system significantly influences the overall financial systems of most economies worldwide (Ali 2011 as cited in Mendoza, 2017); thus, banks are indispensable to economic growth. Moreover, Rabab'Ah Rabab'ah (2015) emphasizes that banks are crucial for economic development as they gather savings to fund investments and facilitate trade. In particular, the Basel Committee on Banking Supervision (2000) emphasized that among banks, one of the significant issues is directly related to lenient credit standards for borrowers and counterparties and poor loan portfolio risk management. In fact, Ahmad and Ariff (2007) cited in Mendoza, 2017 that most banks in countries like Malaysia, Indonesia, Thailand, Mexico, and Japan experienced significant credit risks, resulting in the closure of several banks. Hence, the closure of banks due to credit risk can have substantial implications for the financial sector and the economy. In addition, Akwaa-Sekyi and Gené (2016) highlighted those ineffective internal controls can lead to credit risks, bank closures, and loss of investments, underscoring the importance of robust risk management practices in mitigating credit risks to prevent bank failures. Furthermore, Moloi (2016) discussed the negative implications of significant bank failures on the overall financial sector and economy, emphasizing the catastrophic consequences of credit risks not being managed effectively. Consequently, this underscores the critical need for central banks, investors, and depositors to closely monitor how banks manage credit risks to prevent closures and financial instability.

The Philippine banking system is comprised of three distinct groups of banks: (1) universal and commercial banks, (2) thrift banks, and (3) rural and cooperative banks. Wherein in the context of the Philippine banking industry, rural banks are crucial in promoting rural development, increasing global competitiveness, and providing accessible credit in rural areas. Hence, the Rural Banks Act of 1992 (Republic Act No. 7353) was enacted to establish a rural banking system in the Philippines. Based on the data provided by the Bangko Sentral ng Pilipinas (2021), rural banks constitute 1.5% of the overall assets of the Philippine banking system, but they are essential to the rural economy, serving farmers, fishermen, and micro and small businesses. Furthermore, the Socioeconomic Report 2021 highlights the need for more reforms to increase the country's potential for economic growth and greater financial inclusivity. Also, in the transition year 2022, it was highlighted that there is a need to focus on accelerating and sustaining social and economic recovery, building resiliency, and developing agility (NEDA, 2021). In the same way, the conference of the Bicol Federation of Rural Banks (2023) emphasized that rural banks are also affected by the economic condition, pressing issues and

challenges on sustainability, and heightened competition with other financial institutions such as quasi-banks and microfinance companies (RBAP, 2023). Hence, under the General Banking Law (2000), BSP, as a supervisor of banks and quasi-banks, is mandated to ensure continuous solvency and liquidity of the banking industry to promote and maintain a stable financial system.

Risk is inherent in the banking business, necessitating that sound risk management practices be a fundamental component of its operations. Credit risk refers to the risk of potential loss arising from a borrower or counterparty failing to perform on an obligation (Agribank.com). Credit risk is a significant form of risk in the banking industry that directly impacts the performance of banks. It arises from the likelihood of debtors failing to meet their commitments to the bank, resulting in potential losses. The Bangko Sentral ng Pilipinas released Circular No. 855, series of 2014, which outlines the prescribed principles governing credit risk management practices in the Philippines. Banks must establish and formally record a robust loan loss methodology that effectively estimates provisions for credit losses within a reasonable timeframe. The proficient administration of credit risk, considered an essential element of a holistic risk management strategy, should encompass the entire portfolio and individual loans. Banks should consider the interconnections between credit risk and various diversifiable and non-diversifiable risks (Mendoza & Rivera, 2017). The research undertaken by Muriithi et al. (2016) explores the influence of credit risk on commercial banks' financial performance operating in Kenya. Given the similarity in banking systems between the two countries, this study is pertinent for comprehending the implications of credit risk on the financial performance of rural banks in the Philippines.

Sofyan (2019) analyzed the financial performance of rural banks in Indonesia, emphasizing the impact of bank closures on performance. In their study, Mendoza and Rivera (2017) investigated how credit risk and capital sufficiency affect the profitability of rural banks in the Philippines. In addition, Ferhi (2018) compared credit risk and banking stability between Islamic and conventional banks in the Middle East and North Africa region. Meanwhile, Harjanto et al. (2022) highlighted the importance of appropriate credit risk management in rural banks for effective governance. Roselyne et al. (2022) investigated the influence of credit risk on the financial performance of tier IV commercial banks in Kenya, indicating a gap in similar studies focusing on rural banks in the Philippines.

Studying credit risk in rural banks is crucial due to several reasons that have been highlighted in the literature. Monalisa (2022) emphasize the importance of rural banks indicating a need for a deeper understanding of credit-related issues. Yang (2021) underscores the practical significance of studying credit risk evaluation in regional rural commercial banks to promote stable and healthy development. Harjanto et al. (2022) stress the necessity for appropriate credit risk management in rural banks as part of internal governance mechanisms to mitigate high credit risk effectively. Ali et al. (2021) highlights the critical importance of studying credit risk for assessing the soundness and stability of the banking system.

One of the key problems that needs to be addressed is the impact of credit risk on the financial performance of rural banks. Sofyan (2019) points out that rural banks with a large Capital Adequacy Ratio (CAR) need to manage credit risk effectively to maintain financial stability. Additionally, Hamdillah et al. (2021) indicate that suboptimal asset management in rural banks can lead to increased vulnerability to credit risk, necessitating a focus on improving asset quality and financial performance. Furthermore, the study by Viana et al. (2021) highlights the attractiveness of rural banks to Micro, Small, and Medium Enterprises (MSMEs) due to their simplified procedures, emphasizing the need to ensure the profitability and sustainability of rural banks through effective credit risk management. Additionally, Dibra and Bezo (2021) point out that poor understanding of credit risk and inadequate risk management strategies threaten commercial banks' advancement and customers' interests, underscoring the urgency of addressing credit risk in rural banking institutions. Finally, the literature underscores the importance of studying credit risk in rural banks to enhance financial stability, promote healthy development, and ensure effective risk management practices to safeguard the interests of both banks and their customers.

Although existing literature has provided valuable insights into credit risk and bank performance in various countries such as Indonesia, India, Kenya, Albania, Latvia, and Ghana, there is a notable research gap in understanding the specific dynamics of credit risk and bank performance in rural banks in the Philippines. While studies have been conducted on these elements in other countries, more extensive studies must examine rural banks in the Philippines. Specifically, the correlation between credit risk and bank performance using Kendall's Tau, which covers 2018 to 2022 for rural banks, is yet to be studied. Consequently, the conference conducted by the Bicol Federation of Rural Bankers in

2023 highlighted the need for effective credit risk management in rural banks because of their vulnerability as a financial institution (RBAP, 2023).

This study holds substantial importance for various stakeholders, including rural bank owners and decision-makers, the general public, and the academic community. The findings from this study can assist in formulating tailored risk management strategies specific to the context of rural banks in the Philippines. It will assist rural bank owners and decision-makers in the Philippines by providing valuable risk planning and assessment perspectives and understanding the intricate relationship between credit risk and bank performance in rural banks. Furthermore, by effectively managing credit risk, rural banks can strengthen their financial performance and contribute to improved financial inclusion in rural areas.

Moreover, the findings of this study can provide valuable insights to policymakers and regulators into the uniquefeature and framework of the regional rural banks in the Philippines, enabling them to implement specific policy interventions. It is crucial to address the research gap in credit risk and bank performance of rural banks in the Philippines to enhance understanding in this field, strengthen risk management techniques and boost the financial stability of rural banking institutions in the country.

The aim of the study is to determine the correlation of credit risk on the bank performance of the rural banks in the Philippines by assessing the credit risk level in terms of the ratio of provision for loan loss to the gross total loan portfolio, and the financial performance of rural banks in the Philippines by analyzing their return on equity.

II. LITERATURE REVIEW

Credit risk theory, anticipated income theory, and information asymmetry are fundamental concepts that significantly influence the banking sector's risk management practices and financial decision-making. Understanding these theories is crucial for banks to manage risks effectively, make informed lending decisions, and enhance financial performance.

The inception of credit risk theory occurred in 1974 when Robert Merton introduced it as a component of his default or default model. This theory serves as the foundational framework for comprehending credit risk. Robert introduced a framework for evaluating a company's credit risk by defining equity as a call option on its assets (Folajimi& Dare, 2020). This theory provides banks with a framework for assessing the risk in granting credit, influencing their risk management tactics to minimize possible losses and maintain financial stability. The Anticipated Income Theory was formulated by H.V. Prochnow in 1944 based on the practices of commercial banks in the United States. According to this theory, regardless of the borrower's business kind or characteristics, the bank should strategize the repayment of the term loan (a loan with a duration of one to five years) based on the borrower's projected income. The bank correlates its medium- and long-term loans with the projected income of the borrower. This idea highlights the bank's capacity to provide a loan depending on the borrower's anticipated income in both the near and distant future. The bank can effectively mitigate credit risk by strategically aligning its credit decisions with projected income (Folajimi& Dare, 2020).

Banks can improve their risk assessment methods and make educated credit decisions by matching lending decisions with borrowers' projected income levels. The anticipated income theory, formulated by H.V. Prochnow, highlights the importance of aligning bank loans with borrowers' projected revenue in order to effectively mitigate credit risk (Waitherero&Wanyoike, 2019). Banks can improve their risk assessment methods and make informed lending decisions by matching loan decisions with borrowers' income estimates, therefore relying on projected income levels. In 1970, George Akerlof discussed the concept of information asymmetry. George Akerlof has pointed out that information asymmetry refers to the unequal knowledge between lenders and borrowers, affecting credit risk evaluation (Abraham & Shrives, 2014). Banks must effectively manage the obstacles posed by information asymmetry in order to make precise lending decisions while considering the risks associated with insufficient information. The association between credit risk and the financial performance of rural banks has been a subject of significant research interest. Several studies have explored this relationship, shedding light on the implications for risk management, bank stability, and overall financial performance.

Understanding credit risk theory, anticipated income theory, and information asymmetry is essential for effective risk management in the banking sector. These theories enable banks to assess credit risks accurately, align lending decisions with borrowers' income expectations, and address information disparities to make informed financial decisions. Banks can enhance stability, improve lending practices, and optimize financial performance by incorporating

these theories into risk management strategies. Finally, integrating credit risk theory, anticipated income theory and information asymmetry in risk management practices is vital for banks to navigate uncertainties, make prudent lending decisions, and ensure long-term financial sustainability in a dynamic banking environment.

A study conducted by Awo and Akotey in 2019 investigated the financial performance of rural banks in Ghana, explicitly examining financial ratios and profitability indices. Similarly, Sofyan, in 2019, assessed the financial performance of rural banks in Indonesia. In addition, Muriithi et al., 2016 investigated the influence of credit risk on the bank performance of commercial banks in Kenya. Roselyne et al. (2022) examined how credit risk affects the financial performance of tier IV commercial banks in Kenya. The performance of regional rural banks in India was assessed by Ahmed (2015). Rupeika-Apoga et al., 2018 undertook a study on bank stability, explicitly discussing the situation of Nordic and non-Nordic banks in Latvia. Ferhi (2018) conducted a comparative analysis of credit risk and financial stability in the Middle East and North Africa, specifically focusing on Islamic and conventional banks. While there is existing literature on credit risk and bank performance in countries such as Indonesia, India, Kenya, Albania, Latvia, and Ghana, a significant research gap exists in understanding the specific dynamics of credit risk and bank performance in rural banks in the Philippines. Their study provided insights into the financial performance of rural banks, offering valuable perspectives on the association between credit risk and financial outcomes.

In their study, Djalilov and Piesse (2016) examined the variables affecting banks' profitability in transitioning nations. They specifically highlighted the significance of risk management methods in determining the financial performance of these banks. In 2019, Sofyan analyzed the financial performance of rural banks. The study focused on the effects of bank closures on performance and the consequences for credit risk management. In their study, Muriithi et al. (2017) examined how credit risk impacts the financial performance of commercial banks, focusing on the consequences for risk management and financial stability. Ahmed (2015) assessed the efficiency of regional rural banks, with a specific emphasis on their distinctive features and the difficulties they encounter. Sofyan (2019) analyzed the financial performance of rural banks in Indonesia. The study reveals valuable insights into the impact of bank closures on financial performance and the consequences for credit risk management. In their study, Dibra and Bezo (2021) investigated the correlation between corporate governance and credit risk within the banking industry.

This study yielded valuable insights into the correlation between credit risk and financial performance within the framework of regional rural banks. This study highlights the implications for risk management methods, the stability of banks, and the overall financial performance. It provides significant perspectives for policymakers, regulators, and experts in the banking industry. This study provides empirical evidence and implications for risk management approaches in the Philippines.

III. METHODOLOGY

This study utilizes a quantitative research method. A quantitative approach was used to ascertain the influence of credit risk on the rural banks' financial performance. Secondary data analysis was performed on cross-sectional and time series panel data. Kendall's Tau (using SPSS version 2021) was used as statistical treatment. The scope covers the total enumeration of the 92 rural banks in the entire Philippines. It did not cover the cooperative banks. The rural banks with complete five-year financial reports were considered. Secondary data analysis was conducted from publicly available and published financial statements of the rural banks that have been issued by the BangkoSentral ng Pilipinas (BSP). No ethical issues are violated regarding the gathering of the data because the source data are publicly available. In fact, the BSP requires the rural banks to publish the financial statements in circulars, newspapers, and posts in a conspicuous place before submitting them to the BSP. In addition, only the standard items contained in the financial report were included in the study covering the five years, 2018 to 2022. As to the limitation of the study, it did not consider other factors that may impact credit risk and bank performance in the rural banks of the Philippines.

IV. RESULTS AND DISCUSSION

The results of the study on credit risk, return on equity, and correlation between credit risk and bank performance are as follows:

Metrics such as the loan loss reserve ratio provide insights into a bank's loan portfolio's quality and ability to manage credit risk effectively. A sufficient loan loss reserve ratio suggests that a bank is adequately prepared for potential loan losses. When assessing bank data, it is crucial to consider regulatory requirements and industry benchmarks in addition to these essential measures. Regulatory bodies such as the Federal Reserve and the Basel

Committee on Banking Supervision set standards for capital adequacy, liquidity, and risk management to ensure the banking system's stability. Overall, a comprehensive analysis of bank statistics should encompass a range of profitability, capital adequacy, asset quality, and liquidity metrics while also considering regulatory requirements and industry benchmarks to provide a holistic view of a bank's financial performance and stability.

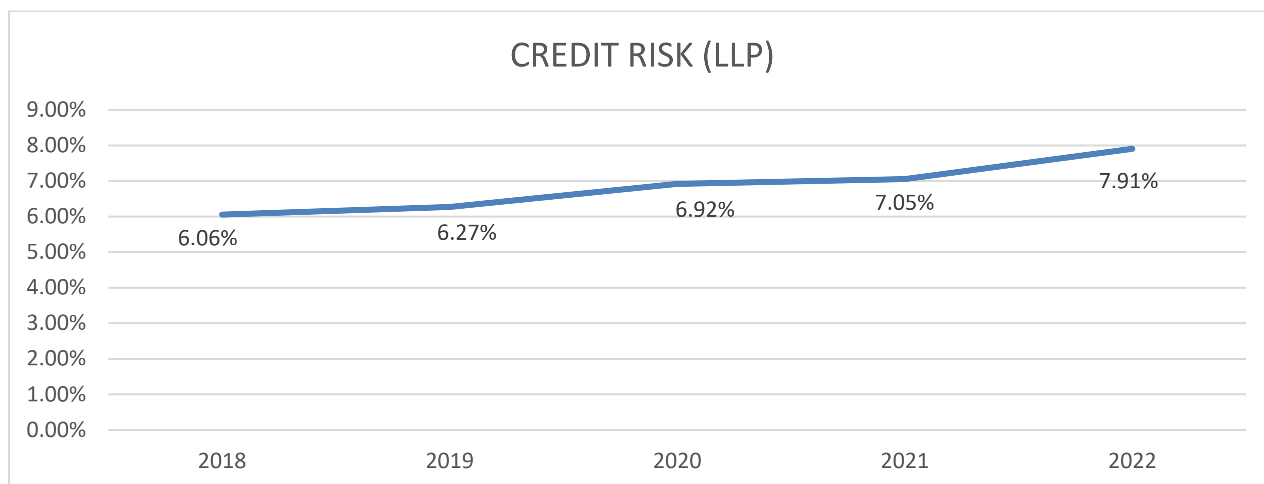

Figure 1.
Credit Risk (Loan Loss Provision Ratio) of Rural Banks in the Philippines

The study results show that credit risk has increased from 2018 to 2022. Figure 1 shows that the median credit risk for 2018 is 6.06%; in 2019, it is 6.27%; in 2020, it is 6.92%; in 2021, it is 7.05%; and in 2022 it is 7.91%. The results imply that increasing credit risk by metrics of loan loss provision can be supported by the study (Jasman & Murwaningsari, 2022), which suggests that an increase in loan loss provision indicates a rise in credit risk and a deterioration in loan quality, consequently adversely affecting bank performance. This implies that higher loan loss provisions may reflect a more cautious approach by banks in recognizing potential credit risks, which can lead to a more conservative lending strategy and a reduction in risky loan exposures.

Conversely, the report titled "Credit Risk Management and Financial Performance of Listed Banks in Ghana" (2020) gives a counterargument to the idea of raising credit risk based on loan loss provision indicators. The research findings indicate that the loan loss provision index can decrease credit risk. This suggests that a higher level of loan loss provision may serve as a buffer against potential risks, enhancing the bank's overall risk management framework and reducing the likelihood of financial distress.

It implies that while increasing credit risk by metrics of loan loss provision may signal a proactive approach to managing potential risks and ensuring financial stability, it is essential for banks to strike a balance between prudent risk management practices and maintaining profitability. Banks can strengthen their long-term sustainability by making informed judgments to maximize their risk-return trade-off and improve their overall financial performance through rigorous evaluation of the impact of loan loss provisions on credit risk.

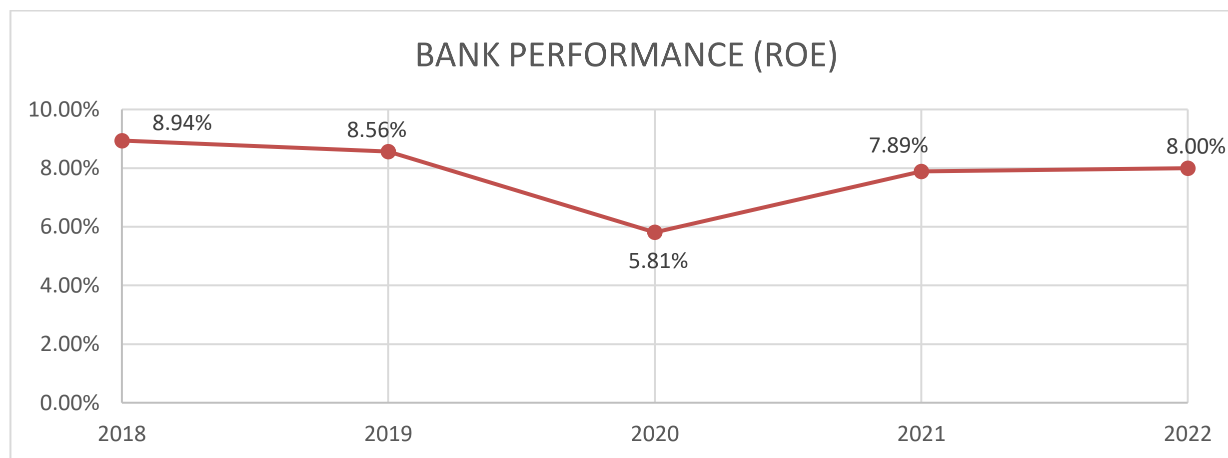

Figure 2.
Bank Performance (Return on Equity) of Rural Banks in the Philippines

Figure 2 shows that in the year 2018, the return on equity was 8.94%. It declined in 2019 to 8.56%. In the year 2020, it continues to decline to 5.81%. It increased in 2021, which is 7.89%, and increased to 8% in 2022. In examining bank profitability statistics, it is essential to consider various vital metrics that provide insights into these institutions' financial health and performance. One crucial aspect to analyze is the profitability of banks, which can be assessed through return on equity (ROE). Return on Equity indicates how effectively a bank is utilizing shareholder equity to generate profits. The Return on Equity (ROE) metric measures a company's profitability and financial performance. It offers valuable perspectives into the efficiency of a company in generating profits from its equity. Timothy (2022) also highlighted that return on equity provides insights into a business's profitability for owners and investors. Moreover, Alam (2018) emphasized that return on equity reveals how much profit a company can earn compared to the shareholders' total equity on the balance sheet.

Understanding return on equity is essential for effective financial decision-making and risk management. It allows investors, shareholders, and financial analysts to gauge a company's ability to generate profits from its equity. Additionally, return on equity is a crucial indicator for assessing a company's financial performance and competitiveness in the market. By studying return on equity, businesses can identify areas for improvement, make informed investment decisions, and enhance their overall financial health. Therefore, studying return on equity (ROE) as a profitability metric is crucial for evaluating business performance, making strategic financial decisions, and ensuring long-term sustainability.

Table 1

Correlation Between Credit Risk and Bank Performance of Rural Banks in the Philippines from 2018 to 2022

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. 2018 Credit Risk		---										
2. 2019 Credit Risk		0.75	---									
3. 2020 Credit Risk		0.65	0.82	---								
4. 2021 Credit Risk		0.55	0.67	0.72	---							
5. 2022 Credit Risk		0.50	0.60	0.64	0.74	---						
6. 5-Year Average Credit Risk	0.69	0.82	0.84	0.81	0.76	---						
7. 2018 Financial Performance	-0.15	-0.11	-0.08	-0.11	-0.06	-0.12	---					
8. 2019 Financial Performance	-0.14	-0.14	-0.12	-0.14	-0.05	-0.13	0.52	---				
9. 2020 Financial Performance	-0.2	-0.19	-0.23	-0.26	-0.16	-0.24	0.44	0.53	---			
10. 2021 Financial Performance	-0.16	-0.14	-0.14	-0.19	-0.1	-0.16	0.4	0.46	0.54	---		
11. 2022 Financial Performance	-0.23	-0.23	-0.21	-0.26	-0.21	-0.24	0.35	0.4	0.42	0.54	---	
12. 5-Year Average Financial Performance	-0.22	-0.19	-0.17	-0.21	-0.12	-0.20	0.61	0.66	0.63	0.69	0.65	---

Black Bold Coefficients = Significant at .05 alpha

Table 1 depicted the correlation between credit risk and bank performance in 2018, which is -0.15; based on Hemphill's (2003) coefficient correlation, it has a negative, weak, significant correlation. In 2019, the correlation between credit risk and bank performance was -0.14, based on Hemphill's (2003) coefficient correlation; this means it has a negative and weak significant correlation. In 2020, the correlation between credit risk and bank performance was -.023, based on Hemphill's (2003) coefficient correlation. This means that there is a significant negative and moderate correlation. Furthermore, in 2021, the correlation between credit risk and bank performance is -0.19, which means that it has a negative and weak significant correlation. In addition, in the year 2022, the result of the correlation between credit risk and bank performance is -0.21; based on Hemphill's (2003) coefficient correlation, the result signifies that it has a negative and moderate significant correlation. Finally, the 5-year average bank performance is -.20, based on Hemphill's (2003) coefficient correlation, which means a negative and weak significant correlation.

The result implies that when credit risk increases, the financial performance of rural banks is likely to decline. This is supported by (Abdullahi and Tela, 2022), who found that an increase in credit risk management negatively impacts the profitability of listed deposit money banks in Nigeria. Similarly, Goh et al. (2022) highlighted that the risk of credit or bad credit in the banking sector can lead to lower banking capital, directly affecting financial performance and potentially causing a decline in profits. Furthermore, the study by Sofyan (2019) emphasized the importance of appropriate credit distribution ceilings based on capital considerations for Rural Banks. This suggests that as credit risk

increases, rural banks need to carefully manage their credit exposure to maintain financial stability and performance. Additionally, the research by Yang (2021) pointed out that rural commercial banks often rely on subjective judgments and simplified models when measuring credit risk. This approach may need to adequately capture the increasing credit risk exposure, leading to potential financial challenges for rural banks.

V. Conclusion

The findings demonstrate a negative correlation between increasing credit risk and declining financial performance of rural banks. As credit risk rises, rural banks must improve their risk management methods, regularly monitor their credit portfolios, and modify their lending policies to mitigate the detrimental consequences on their financial performance. The results of this study can help develop customized risk management techniques that are specifically designed for rural banks in the Philippines. It will assist rural bank owners and decision-makers in the Philippines by providing valuable risk planning and assessment perspectives and understanding the intricate relationship between credit risk and bank performance in rural banks. Rural banks can ensure their financial stability and profitability by implementing effective credit risk management techniques and adhering to cautious lending policies, even when credit risks increase. This study proposes that rural banks must accurately assess and prudently handle their loan exposure in response to escalating credit risk. This is crucial to effectively address prospective financial difficulties and ensure financial stability and performance. In addition, through efficient credit risk management, rural banks can enhance their financial performance and promote enhanced financial inclusion in rural areas. Furthermore, the results of this study might offer significant perspectives to policymakers and regulators regarding the unique challenges faced by rural banks in the Philippines, allowing them to enact targeted policy reforms. Addressing the research gap in credit risk and bank performance of rural banks in the Philippines is of utmost importance. This would contribute to a better understanding of this sector in order to develop tailored risk management techniques that are specifically designed for rural banks in the Philippines, promote enhanced financial inclusion in rural areas, and enact targeted policy reforms that would further ensure financial stability of rural banking institutions in the country.

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