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DETERMINANTS OF NON-PERFORMING LOANS IN RURAL BANKS: EVIDENCE FROM SOUTH SUMATRA, INDONESIA

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Abstract
This study investigated the factors influencing the emergence of Non-Performing Loans (NPL) at Rural Banks in Southern Sumatra, one of the western provinces of Indonesia, from the perspective of debtors. The data were gathered through questionnaires distributed to 285 debtors with non-performing credit across the province. The questionnaire utilized an ordinal scale from 1 to 10. It included 15 variables: Length of Procedure, Officer Capacity, Credit Monitoring, Business Appraisal, Credit Period, Principal Amount, Interest Rate, Interest Rate Change, Customer Appraisal, Debtor Relations, Collateral Appraisal, Credit Allocation, Money Recording, Business Competition, and Economic Condition. The data were processed using Factor Analysis. Using factor analysis as the primary method, the study reduces the factors into three general factors and found that non-performing loans in the region are affected by the linear combination of the observed variables.

Keywords: Rural bank, NPL, credit, JEL Classifications

INTRODUCTION

The bank is a crucial financial component in the economy of a country. The stronger the banking system in a country, the better it can ride out external and internal economic shocks (Bebczux & Sangiacomo, 2008; Brigham & Houston, 2001). In a developing country like Indonesia, where market infrastructure is not yet fully developed, the availability of financial institutions to serve Small, Micro, and Medium Enterprises (SMMEs) is extremely important (Madan, 2020; Santoso, 2020). Therefore, the Indonesian Banking Act, since 1980, has classified banks in Indonesia into two groups based on their market segment: Rural Banks, which target the SMME market sector, and Commercial Banks, which target the larger market sector (Sutarno, 2009). The existence of rural banks has invigorated banking competition in Indonesia, showing steady progress year after year (Yap et al., 2020). There are 1635 rural banks in Indonesia, although this is a decrease from the previous year, which saw 1669 banks (Riduwan, 2010). Despite the decline in the number of rural banks, the amount of loans disbursed by these banks has significantly increased. In 2012, the Indonesian Statistics Agency recorded that those loans grew by 21,1%, rising from US$4,1 billion in 2011 to US$ 4,98 billion in 2012. This growth indicates that rural banks still have substantial potential, as the Central Bank has asserted that banks have not yet served 74% of micro businesses in Indonesia. Similarly, a comparable situation has occurred in Southern Sumatra. As one of Indonesia's largest provinces and trade centers, rural banks play an essential role in supporting the development of SMMEs (Ghozali, 2007). The development of rural banks in Southern Sumatra has shown significant progress; over the past five years, loans have increased by 262%, savings and deposits have risen by 150,63%, and total assets of the banks have grown by 191,46% (Ghozali, 2007).

Before the establishment of the Financial Services Authority, the development of rural banks in Indonesia was overseen by the banking supervision team at the Central Bank of Indonesia, which conducted monthly evaluations through the banking health report. The methodology employed to assess the health of rural banks in Indonesia is relatively conventional and is known as the CAMEL technique, which stands for Capital, Asset, Management, Earnings, and Liquidity. One of the most critical variables in this technique, which serves as a primary benchmark for measuring banking performance, is Non-Performing Loans (NPL). NPL is a vital indicator for monitoring credit quality. The higher the NPL, the greater the credit risk in the community, and vice versa (Rangoon & Dhal, 2003).

As one of the largest provinces in Indonesia, South Sumatra plays a key role as a trading hub, especially for marketers between Java and Sumatra. Therefore, the sustainability of credit in the province is essential because it determines the activity level of trade between the two islands. Hence, monitoring NPL in this province is considered crucial. In the five years since 2007, the percentage of NPL for rural banks in Southern Sumatra significantly decreased from 11.73% to 4.09%. However, this significant decrease does not guarantee risk stability, as the value of NPL remains quite volatile; for instance, in the first quarter of 2012, the NPL jumped from 6.91% to 7.45% due to a decline in timber market prices. The value of NPL also assumes that financial crimes, such as report manipulation or window dressing, do not exist. Given the importance of the NPL variable for banking activity, understanding the factors influencing NPL in the province is essential as a precautionary strategy for the Central Bank in supervising banks and for rural bankers in operating their businesses.

Alnabulsi, Kozarević, and Hakimi (2023) systematically reviews 76 peer-reviewed studies from 1987 to 2022 to investigate the determinants of non-performing loans (NPLs). The review categorizes NPL drivers into macroeconomic, bank-specific, and industry-specific factors. It highlights that macroeconomic conditions (e.g., GDP, unemployment, inflation) and bank-level characteristics (e.g., profitability, capitalization, efficiency) play more critical roles in influencing NPLs than industry factors. The study also includes insights into the COVID-19 pandemic's impact on NPL trends and uses a variety of econometric methods especially panel data techniques such as the Generalized Method of Moments (GMM). The paper calls for further research into emerging markets and underexplored industry factors and encourages the development of stress testing and regulatory strategies to mitigate NPL-related banking distress.

Florian Manz (2019) offers a comprehensive systematic review of 44 peer-reviewed studies published between 1987 and 2017. The paper categorizes the determinants of non-performing loans (NPLs) into three key themes: macroeconomic factors (e.g., GDP growth, unemployment, inflation), bank-specific factors (e.g., capital adequacy, efficiency, governance), and loan-specific factors (e.g., loan maturity, terms, and borrower characteristics). The study finds that although macroeconomic conditions are frequently emphasized, a holistic understanding requires integrating these with bank-level and loan-level influences. The author critiques the limited interaction found in past research across these dimensions and encourages deeper empirical investigation—particularly with dynamic panel models like GMM. The paper also highlights regional differences, showing Europe continues to face high NPL ratios compared to the U.S. and China, and it calls for regulatory responses based on improved data availability and stress-testing frameworks. Finally, the review identifies significant gaps in the literature, including the underrepresentation of loan-specific dynamics and emerging market contexts, and offers a concept-centric framework to guide future NPL research and policy design.

Ardhi Khairi, Bahri, and Bhenu Artha (2021) conducts a systematic review of 21 scholarly articles to explore the factors associated with non-performing loans (NPLs). It highlights that NPLs are influenced by a wide range of macroeconomic and microeconomic variables such as GDP growth, unemployment, inflation, credit growth, and bank governance. The study finds that both economic shocks (like the global financial crisis) and internal bank behaviors (such as credit risk management and monitoring quality) significantly affect NPL levels. It also observes that NPLs impact key banking metrics like profitability, asset quality, and capital adequacy. Notably, the review identifies a gap in the literature, finding no variables directly linked to policy actions—national or global—suggesting an important direction for future research. The study concludes by emphasizing the need to expand research on policy-related variables and to analyze NPLs over longer time horizons to better understand their systemic implications.

Nguyen (2023) examines how credit risk, measured by the non-performing loan ratio (NPLR), affects the financial performance of 26 Vietnamese commercial banks from 2006 to 2016. Using dynamic panel data analysis with the Difference Generalized Method of Moments (GMM) estimator, the study addresses endogeneity, autocorrelation, and heteroskedasticity issues. Financial performance is evaluated through return on assets (ROA), return on equity (ROE), and net interest margin (NIM), while control variables include bank size (SIZE), loan loss provision ratio (LLPR), capital adequacy ratio (CAR), GDP growth, and inflation. The results indicate that NPLR and SIZE have a significant negative impact on ROA and ROE, but not on NIM. GDP positively influences all three performance indicators, while inflation affects only ROA and NIM. LLPR and CAR show no significant effect. The study concludes that managing credit risk is vital to improving bank profitability and suggests that

banks, especially in developing economies like Vietnam, must strengthen internal risk management practices to enhance financial resilience.

Widodo (2003) conducted the research using a Likert scale with 100 respondents and found that interest rate, credit period, and business stability influence NPL of rural banks in Demak Municipality. Saptono (1997) conducted research that found that incomplete data of borrowers, less accurate business appraisal, less frequent credit monitoring, and high business competition were the factors influencing NPL of rural banks in South Sulawesi. Rajiv and Ranjan (2003) found that factors like credit maturity, better credit culture, and favorable macroeconomic and business conditions lead to lower NPL. The business cycle may have differential implications, leading to different responses from borrowers and lenders. Mensah (2012) found that Security and Type of Loan were significant to the NPLs, whereas Sex, Marital Status, Age, Educational Level, and Town were unimportant to the study. The studies concluded that the risk of default for a customer who used collateral as security in accessing the loan is less than for a customer who used a personal guarantee. Bebczuk (2008) found that macroeconomic conditions, which are proxied by time variables, seem to exert a significant influence on the probability of NPL.

This study is interested in investigating factors influencing nonperforming credit loans in the South Sumatra region. The study is conducted through survey to 285 debtors with non-performing loan across South Sumatra. In assessing the factors, we incorporate every point of interaction between banks and debtors particularly in relation to credit activities. These points include Length of procedure, Officer Capacity, Credit Monitoring, Business Appraisal, Credit Period, Principal Amount, Interest Rate, Interest Rate Change, Customer Appraisal, Debtors Relation, Collateral Appraisal, Credit Allocation, Money Recording, Business Competition and Economic Condition. The question in the survey is measured by a Likert scale from 1 to 10 and processed using Principal Componen Analysis (PCA) or widely known as factor analysis. The main contribution of this study is to identify factors affecting NPL comprehensively.

Theoretically, the value of NPL is primarily determined by prudential banking behavior conducted by the bank. Prudential banking is defined as how prudent the bank is in distributing its public funds through credit to society. The banks have a generic guideline to always stick to the 5 C's principle when assessing across regions. Dewi (2009) researched the factors influencing the NPL of rural banks in the Middle Java province through descriptive analysis and structural equation modeling, using 100 non-performing debtors. The result found that internal management in the bank has a positive and significant influence on lending strategy, while lending strategy itself negatively influences NPL. Bustomi (2003) conducted similar research by descriptive analysis and found that the incompetence of debtors in managing loans, poor internal management, high business competition, and weak banking supervision were the factors influencing NPL of rural banks in East Java.

METHODOLOGY

The data used in this study were primary data gathered through questionnaires spread to 285 rural banks' debtors with non-performing loans throughout Southern Sumatra. Given that there were 19 rural banks in the province, the survey was conducted by sampling around 15 debtors from each bank. The respondent was highly selected through some criterias **4** and constructed by 15 variables **5** comprised of Length of Procedure *(v1),* Officer Capacity *(v2),* Credit Monitoring *(v3),* Business Appraisal *(v4),* Credit Period *(v5),* Principal Amount *(v6),* Interest Rate *(v7),* Interest Rate Change *(v8),* Customer Appraisal *(v9),* Debtor Relation *(v10),* Collateral Appraisal *(v11),* Credit Allocation *(v12),* Money Recording *(v13),* Business Competition *(v14),* and Economic Condition *(v15)*. A Likert scale was used to measure the questionnaire from 1 to 10, where 1 indicated that the variable had the lowest influence on the emergence of NPL and 10 indicated the opposite statement, that the variable had the most significant influence on the emergence of NPL. The technique used to process the data was Factfr Aoalysis, which was calculated using SPSS. The detailed variable explanations are as follows:

Table 1. List of variables or point of interactions

Var.	Variable	Explanation
v1	Length of procedure	is defined as the time required by the bank to give the credit to the debtors, since the debtors propose until the loan is disbursed and received. The time consumed usually varied takes around 3-7 days. This variable tries to ask whether the time taken for credit procedure influences the emergence of NPL or not.
V2	Officer Capacity	is defined as the capability of banking employee in accurately measuring the repayment capacity of the debtors. This variable tries to ask whether the ability of banking officer in measuring the repayment capacity influences the emergence of NPL or not.
V3	Credit Monitoring	is defined as monitoring activity conducted by the bank toward the business condition of the debtors after the loan was given. This monitoring should have implemented in a regular basis. This variable tries to ask whether credit monitoring activity conducted by the bank influences the emergence of NPL or not.
V4	Business Appraisal	is defined as the capability of banking employee to accurately measure the business condition of the debtors. This variable tries to ask whether the ability of banking employee in measuring the business of the debtor influences the emergence of NPL or not.
V5	Credit Period	is defined as the length of credit since the disbursement until the settlement. The length of credit period is determined by the amount of principal amount that the debtors agree/able to pay. This variable tries to ask whether the credit period influences the emergence of NPL or not.
V6	Principal Amount	is defined as the principal money that the debtors must pay every month. This variable tries to ask whether the amount of principal money that the debtor must pay every month influences the emergence of NPL or not.
V7	Interest Rate	is defined as the level of interest rate set by the banks. This variable tries to ask whether the level of interest rate set by the banks influences the emergence of NPL or not.
V8	Interest Rate Change	is defined as the decision of banking board management in changing the level of interest rate. This policy used to affect effective rate based credit scheme. This variable tries to ask whether the change of interest rate set by the banks influences the emergence of NPL or not.
V9	Customer Appraisal	is defined as the ability of banking officer in measuring the character aspect/personality of the debtors. This variable tries to ask whether the ability of banking officer in measuring the character of the debtors influences the emergence of NPL or not.
V10	Debtors Relation	is defined as the existence of relationship between the board management of the banks with the debtors such as colleague, friend or family relationship. This variable tries to ask whether the existence of such relationships influences the emergence of NPL or not.
V11	Collateral Appraisal	is defined as the ability of banking officer in measuring the real price of collateral owned by the debtors. This variable tries to ask whether the ability of banking officer in measuring the real price of collateral influences the emergence of NPL or not.
V12	Credit Allocation	the discipline of the debtors to use the loan for its purpose as analyzed by the bank separatedly from their personal money. This variable tries to ask whether the ability of the debtors in separating the loan from their personal money influences the emergence of NPL or not.
V13	Money Recording	the ability of the debtors to record the cash flow, incomes and expenditures in operating their business. This variable tries to ask whether the ability of the debtors in creating a written record in operating their business influences the emergence of NPL or not.

Var.	Variable	Explanation
V14	Business Competition	is defined as the impact of business competition toward the business of the debtors. This variable tries to ask whether business competition influences the emergence of NPL or not.
V15	Economic Condition	is defined as the impact of economic condition toward the business of the debtors. This variable tries to ask whether economic condition influences the emergence of NPL or not.

The primary method applied in this study is factor analysis. Factor Analysis is one of the multivariate statistical techniques used to analyze variables that are assumed to be hypothetically correlated with each other. This technique explains the correlation and maps the variables into some distinctive factors. In social science studies, researchers require measurement development for various complex variables, such as behavior, opinion, intelligence, or personality. Factor analysis is the technique used to solve such problems (Sharma & others, 1996). Factor analysis aims to depict the covariance relationship among unobserved key variables in a random quantity called a Factor (Johnson & Wichern, 2002).

RESULTS AND DISCUSSION

Preliminary statistical analyses, such as validity and reliability tests, were conducted before executing factor analysis. A validity test was conducted to investigate the accuracy level of the questionnaire in measuring the answers. In contrast, a reliability test was conducted to investigate the questionnaire's consistency level in capturing the respondents' answers (Gozhali, 2009). According to the test, not all variables were valid, which meant that *v5,v7,v10,* and *v13* must be omitted from the instrument. After omitting those variables, the questionnaire was valid as it was reflected in its significant correlation with each variable toward the total score. Moreover, the instrument was also proven reliable as it was reflected from its more than 80,3% Cronbach Alpha score.

Table 2. Validity test (sign * indicates significant)

	v1	*v2*	*v3*	*v4*	*v6*	*v8*	*v9*	*v11*	*v12*	*v14*	*v15*
v1	1	.376*	.354*	.136*	.162*	.156*	.380*	.252*	.370*	.156*	.184*
v2	.376*	1	.533*	.130*	.313*	.158*	.342*	.192*	.292*	.159*	.188*
v3	.354*	.533*	1	,191*	,359*	,192*	,256*	,148*	,283*	,235*	,198*
v4	.136*	.130*	,191*	1	,297*	,224*	,238*	,217*	,316*	,235*	,396*
v6	.162*	.313*	,359*	,297*	1	,128*	,232*	,225*	,302*	,273*	,365*
v8	.156*	.158*	,192*	,224*	,128*	1	,409*	,196*	,280*	,373*	,367*
v9	.380*	.342*	,256*	,238*	,232*	,409*	1	,319*	,452*	,248*	,279*
v11	.252*	.192*	,148*	,217*	,225*	,196*	,319*	1	,449*	,167*	,211*
v12	.370*	.292*	,283*	,316*	,302*	,280*	,452*	,449*	1	,192*	,231*
v14	.156*	.159*	,235*	,235*	,273*	,373*	,248*	,167*	,192*	1	,571*
v15	.184*	.188*	,198*	,396*	,365*	,367*	,279*	,211*	,231*	,571*	1

Table 3. Reliability test

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
v1	63,396	104,971	0,384	0,276	0,778
v2	63,24	105,187	0,405	0,363	0,777
v3	63,328	105,659	0,434	0,368	0,776
v4	65,84	92,705	0,421	0,231	0,776
v6	63,98	97,249	0,447	0,278	0,77

v8	64,66	94,442	0,441	0,281	0,772
v9	63,74	97,832	0,524	0,367	0,763
v11	63,764	101,434	0,389	0,236	0,776
v12	63,616	98,92	0,52	0,383	0,765
v14	65,268	89,257	0,482	0,37	0,769
v15	65,768	86,323	0,567	0,445	0,755

This study's steps of factor analysis consecutively included *Matrix Correlation Calculation*, *Factor Extraction*, *Factor Rotation*, and *Factor Score Estimation*.

Matrix Correlation Calculation:

Matrix correlation was conducted using Bartlett's Test of Sphericity and Kaiser Meyer Olkin Measure of Sampling Adequacy (KMO KSA). Bartlett's Test functions to calculate the correlation among each variable. The matrix has a significant correlation when the result of the Bartlett test is substantial (>0,5). KMO KSA test functions as a test to measure the adequacy of the number of samples that will be used in factor analysis. The value of KMO KSA varies, ranging from 0 to 1. Factor analysis may start when the value of KMO KSA is more than 0,5, indicating that the samples taken are sufficient and more than one factor has been created. The result showed that Bartlett's test was significant with a value of 0,00, and KMO KSA sampling adequacy was 0,808, indicating that the sample size is sufficient and factor analysis can be started.

Table 4. Sample Sufficiency Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0,808
Bartlett's Test of Sphericity	Approx. Chi-Square	669,747
	df	55
	Sig.	0

Factor extraction

Factor extraction conducted in this study is Principal Component Analysis, which minimizes the number of factors and maximizes information absorption. The extraction produced three factors with an eigenvalue of 1,118. The factors, in total, could explain 56,712% of the variance of the variables, which consisted of 33,903% variance explained by factor 1, 12,644% by factor 2, and 10,165% by factor 3.

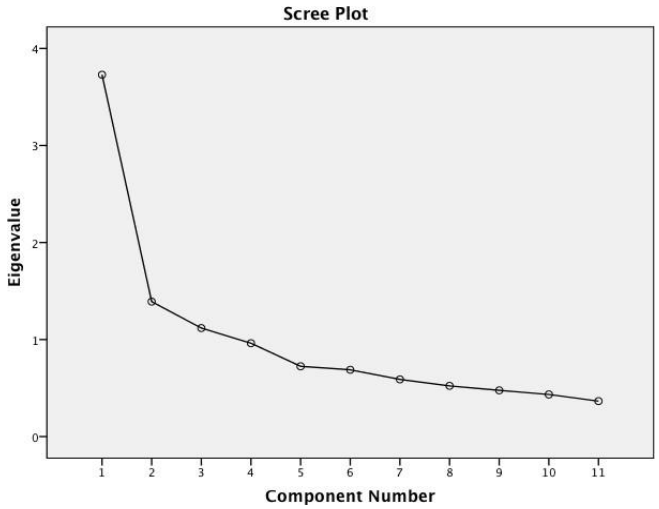

Figure 1. Eigen Value Chart

Table 3. Eigen Value - Variance Decomposition

Component	Initial Eigenvalues			on Sums of Squared Loadings			ın Sums of Squared Loadings	
	Total	%	Cumulativ	Tota	%	Cumulativ	Total	% Cumulati

	Varianc e %	e	1	Variance e %		Varianc ve %	e	
1	3,729	33,903	33,903	3,729	33,903	33,903	2,21	20,088	20,088
2	1,391	12,644	46,547	1,391	12,644	46,547	2,08	18,908	38,996
3	1,118	10,165	56,712	1,118	10,165	56,712	1,949	17,716	56,712
4	0,962	8,746	65,458						
5	0,724	6,586	72,044						
6	0,688	6,254	78,298						
7	0,589	5,359	83,657						
8	0,522	4,749	88,406						
9	0,477	4,332	92,737						
10	0,434	3,944	96,681						
11	0,365	3,319	100						

Factor Rotation

Factor rotation conducted in this study was Varimax, the most popular methodology to decrease the number of original variables. The rotation result showed that 11 variables were classified into three different factors. Factor 1 consisted of variables Business Appraisal, Interest Rate Change, Business Competition, and Economic Condition, which explained the factor by 36,4%, 44,9%, 63,3%, and 71,7%, respectively. Factor 2 consisted of variables Length of Procedure, Customer Appraisal, Collateral Appraisal, and Credit Allocation, which explained the factors by 50,2%, 56%, 53,2%, and 63,4%, respectively. Factor 3 consisted of variables Officer Capacity, Credit Monitoring, and Principal Amount, which explained the factor by 68,6%, 70,3%, and 46%, respectively.

Table 4. Loading factor

Faktor	Variabel		Loading Factor	Communalities
F1	*v4*	Business appraisal	0,54	36,4
	v8	Interest rate change	0,541	44,9
	v14	Business_competition	0,782	63,3
	v15	Economic Condition	0,83	71,7
F2	*v1*	Length of Procedure	0,512	50,2
	v9	Customer appraisal	0,674	56
	v11	Collateral appraisal	0,717	53,2
	v12	Credit allocation	0,747	63,4
F3	*v2*	Officer capacity	0,799	68,6
	v3	Credit Monitoring	0,818	70,3
	v6	Principal amount	0,513	46

Factor Score Estimation:

Factor score estimation calculated the correlation between each factor. The result showed that the correlation between each factor was relatively strong (>0,5), except the correlation between factor 1 and factor 3, which was relatively low at 0,199.

Table 5. Component Transformation Matrix

Factor	*F1*	*F2*	*F3*
F1	0,596	0,601	0,533

F2	0,778	-0,267	-0,569
F3	0,199	-0,754	0,626

Using factor analysis, we reduce the questions and categorize them into three main factors, each composed of multiple variables.
F1 = 0,54(v4) + 0,541(v8) + 0,782(v14) + 0,83(v14)
F2 = 0,512(v1) + 0,674(v9) + 0,717(v11) + 0,747(v12)
F3 = 0,799 (v2) + 0,818(v3) + 0,513(v6)

Factor 1 = 0,54(Business Appraisal) + 0,541(interest Rate Change) + 0,782(Business Competition) + 0,83(Economic Condition)

The first factor was constructed from four variables: Business Appraisal, Interest Rate Change, Business Competition, and Economic Condition. Economic Condition has the most significant influence with a loading factor of 0,83 compared to other variables within the same factor, indicating that the debtors were rational enough to consider this variable as an important signal affecting their business. Ironically, banking supervision frequently found that rural banks were careless in assessing economic conditions when selecting debtors. This issue may be triggered internally, according to interviews with rural banking directors in the province, by the lack of competence among banking employees to comprehend recent economic conditions. Externally, some rural banks in remote areas faced difficulties gathering recent economic news. The Central Bank is responsible for providing transparent information about actual economic news and formulating effective distribution methods. Another variable with a relatively strong influence was business competition, with a loading factor of 0,782. According to the audit findings, significant issues related to this variable may stank banks' reputation from the poor risk of the banks towards a highly concentrated economic sector driven by their ambition to make profits. A homogeneous credit portfolio created by a saturated market resulted in tight business competition among the debtors, ultimately impacting their income negatively. Regarding this issue, banks must diversify their credit portfolios, rather than relying solely on similar resources, such as focusing on particular market segments like timber or coconut while neglecting the potential to create loans in other market areas. Eventually, when the economy pushes prices down due to external shocks like a global price decline or natural disasters, the continuity of loan repayment is disrupted, and non-performing loans (NPL) suddenly increase.

Factor 2 = 0,512(Length of Procedure) + 0,674(Customer Appraisal) + 0,717(Collateral Appraisal) + 0,747(Credit Allocation)

The second factor was constructed from four variables, namely Length of Procedure, Customer Appraisal, Collateral Appraisal, and Credit Allocation. Credit allocation, which reflected the ability of the debtors to use the loan for its initial purpose as analyzed by the bank, acted as the most influential variable regarding the emergence of NPL, with a loading factor of 0.747. According to supervision, the misallocation of loans in the province has been recognized as commonplace in society, making it difficult to control. However, the bank has been advised to address this behavior by implementing credit monitoring for debtors on a regular basis after the loan is granted. The problem is that some rural banks are unable to create appropriate monitoring instruments and do not provide any incentives to ensure that their employees, particularly account officers, are willing to complete the assignment. In most rural banks, monitoring activities were only conducted through informal approaches because some debtors still maintain relationships with the employees as friends, relatives, or family. This was one of the reasons why it has been so difficult to establish strong corporate governance in rural banks.

Another variable in this equation with a strong influence was Collateral Appraisal, with a loading factor of 0.717. Converting collateral such as buildings, cars, motorcycles, land, and so forth into market prices in some areas is relatively hard to measure. Therefore, most rural banks appraised the collateral personally instead of through independent appraisal. This allowed the price of collateral to be either undervalued or overvalued compared to the real market price. Consequently, the collateral price set by the banks was unable to cover the amount of the loan, and they faced difficulties in recovering the loan when the debtors went bankrupt or committed fraud. The central bank has frequently urged rural banks to use independent appraisal services rather than appraising collateral personally. However, this recommendation will have no power if not legally established as regulation.

Factor 3 = 0,799(Officer Capacity) + 0,818(Credit Monitoring) + 0,513(Principal Amount)

The third factor was constructed from three variables, namely Officer Capacity, Credit Monitoring, and Principal Amount. In this factor, credit monitoring was considered the most influential variable in the emergence of NPL, with its loading factor at 0.818. Credit monitoring was defined as the process of monitoring the business condition of the debtors after the loan was given. This monitoring should ideally be conducted regularly and particularly applied to working capital credit. The biggest challenge in implementing this monitoring activity during banking supervision lies in three crucial issues. First, rural banks tend to minimize their operational costs to achieve higher profits by reducing the number of employees. Consequently, employees become burdened with high job loads to fulfill all required positions in the organizational structure. As a result, one employee may be unable to handle all assignments and neglect the need to implement credit monitoring. Second, the banks did not specify in their credit agreements that debtors must send business progress reports to the bank regularly. Third, the banks lacked a remuneration formula that could provide incentives to employees who completed monitoring activities. Another variable that significantly influenced the factor was Officer Capacity, with its loading factor at 0.799. Officer Capacity was defined as the capability of banking employees to assess the repayment capacity of the debtors accurately. According to the Audit Findings, this issue manifested in the form of inaccuracy and poor quality of credit analysis produced by most rural banking officers. Thus far, the banks have lacked an official instrument for analyzing the repayment capacity of the debtors, leading to biased information in credit analyses, which potentially facilitates financial crime in the form of data manipulation. The financial report is the most challenging document that banking officers must complete to create accurate credit analyses. Most small, micro, and medium business owners do not record their cash flow in formal financial reports. Instead, they often rely on simple notes, or none at all. This presents a problem, as the lack of a financial report, even a simple one, can categorize the debtor as unbankable. Some banks have initiated efforts to require their employees to assist debtors in creating simple financial reports, so their cash flow can be more easily monitored. This phenomenon should raise high-level concerns for the government, especially for the Ministry of Cooperatives and SMME, in formulating solutions to help small business owners become more bankable.

CONCLUSION

This research highlights the key factors influencing the emergence of non-performing loans

(NPLs) in rural banks in the province, identifying three primary factors: Economic Condition, Credit Monitoring, and Credit Allocation. The findings suggest that economic conditions are a significant driver of NPLs, particularly due to rural banks' reliance on homogeneous credit portfolios and insufficient employee competence in analyzing the impact of economic shifts. Internally, banks need to diversify their portfolios and enhance the capacity of their staff, especially in credit monitoring, through training and policy changes. Externally, the government and the Central Bank have critical roles in supporting rural banks by easing the financial reporting requirements for small, micro, and medium enterprises, relaxing regulatory burdens, and ensuring timely access to updated economic information. Future research could explore the impact of such policy reforms on the reduction of NPLs and the effectiveness of employee training programs in enhancing rural banks' risk management capabilities. Additionally, examining the role of technological advancements in credit monitoring and portfolio diversification could provide valuable insights for further reducing NPL risks in rural banking sectors..

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