Original Research Article

The Determinants of the SMEs Loan Repayment in Palembang City

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Abstract

The goal of this research is to analyze the factors that affect the rate of loan repayment by SMEs with a case study on SMEs businesses PNPM-MP PPMK built in Palembang, Indonesia. This study used logistic regression analysis techniques using six independent variables are gender, Business Turnover Value, Ceiling Loans, Period Repayments, Loans Frequency, and Installment Credit System. The dependent variable is the rate of repayment that is categorized Current and Delinquent. The results showed that the factors that influence and significantly related to the rate of repayment PPMK loan repayments are a business turnover value, Ceiling credits value, payback periods and installment system.

Keywords: Credit, Rate of Repayment, SMEs.

INTRODUCTION

Small and Medium Enterprises (SMEs) have a strategic role in national economic development, because in addition to a role in economic growth and employment also play a role in the distribution of development outcomes. In the economic crisis that occurred in our country since some time ago, where many large-scale efforts that have stagnated even stop their activities, Micro, Small and Medium Enterprises (SMEs) proved to be more resilient in the face of the crisis. Given the experience that has been faced by Indonesia during the crisis, would not be excessive if the starters private sector development is focused on SMEs, especially the business unit is often overlooked simply because their products on a small scale and have not been able to compete with the business units which had already grown.

To overcome the problem of SMEs, the government has implemented several programs that focus on the development of SME including Urban Community Empowerment Program (PNPM-MP) is in the Community Livelihood Improvement Program Community-based (PPMK). PPMK aims to improve institutionally and develop SME business through the credit approval process of venture capital, training, and business assistance. This program has been running in the city of Palembang on from 2012 to 2015 with the number of funds distributed in 33 villages with total lending for working capital loans and training or capacity building program assisted MSMEs PPMK Rp. 2,340,000,000 [1].

Problems often arise from lending are many cases of delay in refund credits that can disrupt the continuity and benefit PPMK Program. Where based on the data in January 2016 in lending to SMEs in the program PPMK in Palembang experiencing congestion level of 18% of total loans. The delinquency problems, particularly related to SME borrowers because business activity is dynamic and sometimes difficult to predict success.

The goal of this research is to analyze the factors that influence and has been linked with a repayment rate target SME Revolving Credit PNPM-MP PPMK in Palembang as well as the influence and relevance.

LITERATURE REVIEW

Community Livelihood Improvement Program Community Based (PPMK) is an intervention in the development of society's productive activities that can directly improve the livelihoods of the poor with KSM mentoring approach. Therefore, assistance focused on institutional strengthening and development of SME

Assistance strategies of institutional strengthening and development of group enterprises MSMEs in PPMK done through the development principle of the five asset livelihoods of people, namely: human capital (human capital), social capital (social capital), natural resources (natural capital), physical resources (physical capital) and financial resources (financial capital). In the management of the source of livelihood, PPMK associated with increasing the ability of SMEs to access various sources of capital income. Mentoring focus group strengthening SMEs, in addition to the smoothness associated with financial capital, particularly well-oriented on the effectiveness of productive activities developed group of SMEs, so that they can positively contribute to improved livelihoods group members.

Studies concerning credit have done a lot of them to research conducted by Godquin [2] conducted research on the impact of group lending, nonfinancial services and dynamic incentives on repayment performance. that MFIs (Microfinance institutions) tend to attribute larger loans to homogeneous groups in terms of age. Group homogeneity was not, however, found to affect the repayment performance in a significant way.

Mirdianingsih [3] conducted research on the distribution and loan repayments mercury village revolving fund as a model for small businesses in the construction area of Bogor Barat. The results of these studies indicate that the percentage of revolving funds from year to year decline and far from government expectations. Factors that allegedly affect the sustainability of these programs include dissemination (extension), HRM and selection of loan recipients.

Nawai *et al.*, [4] conducted a research on the factors affecting repayment performance in microcredit programs in Malaysia. The result of the study shows that there are ten factors that affecting the repayment performance of the borrowers namely age, gender, total sales, business experience, religious education, total household income, distance to the lender office, the formality of business, the period of loan approval and loan monitoring. The study found that improvement in income and total sales will increase the repayment.

Grant *et al.,* [5] conducted research on Using bounds to investigate household debt repayment behavior. The result of these studies that access to informal sources of credit increase the default rate in the formal sector suggest that there is a moral hazard, in the sense that access to credit from family and friends reduces repayment in the formal sector. However, unlike conventional moral hazard where the loan from the lender changes repayment behavior on that loan, we instead show that access to alternative credit sources changes repayment behavior on the loan granted by the lender.

Meizari *et al.*, [6] conducted research on the factors that affect the rate of return of business credit groups in rural agribusiness development program (PUAP) in the sub wake rejo Central Lampung Regency. By using binary logit regression analysis showed the results of research that the factors that affect significantly to the repayment of credit are household income and knowledge PUAP.

Mirpourian *et al.*, [7] conducted research on the determinants of loan repayment performance among borrowers of microfinance institutions India(MFI). The results of these studies indicate that among MFI borrowers, the motivation for reaching the maximum loan level is positively associated with their repayment performance.

Bilau *et al.*, [8] conducted research on the microcredit repayment in Portugal. The results show that the use of microcredit was found both in the more developed and poorest regions of the country and there was no significant variation between the expansion and the recession periods. However, analysis of the origin of the borrower's microcredit in relation to the regional share of GDP reveals that, in Portugal (and possibly in other EU countries), microcredit appears to be a tool for disadvantaged groups in the richest regions (e.g. urban areas) more than a solution for people of the poorest regions.

RESEARCH METHODOLOGY
The method used is a survey method. This study uses primary data and secondary data. The sampling method in this research is done intentionally and disproportionately (unproportional and purposive sampling) so that all members of the population does not have the same opportunities to be sampled and the number of samples that represent the groups in the population are not proportionate. Selection of samples intentionally and disproportionately is done because of the range limitations Borrowers who lived far enough away so that borrowers samples taken are within easy reach.

The population in this study is a member of the group receiving business PPMK PNPM-MP in the city of Palembang which amounted to 712 people. In this study, the sample used is the borrowers who do credit to its business processes or to increase capital. The number of samples taken at 10% of the population sample to be taken in 5 districts covering Sub Ilir Barat I, Ilir Timur I, Gandus, Plaju and Seberang Ulu 2 with a sample of 75 respondents. While the sample size for each subpopulation, namely 46 people represent a subpopulation of borrowers who repay loans and smoothly in 29 people representing subpopulations are in arrears.

Analysis of the data used in this study is divided into quantitative analysis and qualitative analysis. Qualitative data are presented through descriptive method using tabulation to support quantitative data while quantitative data is processed using Microsoft Excel 2007 and IBM SPSS version 20. Logistic regression is an analysis model to determine the effect of predictor variables metric scale (continuous) or categorical (nominal) to variable categorical response scale. Logistic regression was divided into two, namely binary logistic regression (binary logistic regression) and multinomial logistic regression (logistic regression multinominal). Binary logistic regression was used when there are only two possibilities for the response variable (Y) and multinomial logistic regression is used when the response variable over 2 categorizations.

The model equations are formed on logistic regression are as follows:

$$\ln\left(\frac{\hat{p}}{1-\hat{p}}\right) = B_0 + B_1 X$$

Where,

Ln: Natural logarithm.
$B_0 + B_1 X$: The equation is commonly known in the OLS.

While the accent is the probability P logistics obtained the following formula:

$$\hat{p} = \frac{\exp(B_0 + B_1 X)}{1 + \exp(B_0 + B_1 x)} = \frac{e^{B_0 + B_1 x}}{1 + e^{B_0 + B_1 x}}$$

Where:

exp or written "e" is the exponential function. (Keep in mind that the exponent is the inverse of the natural logarithm. The natural logarithm is the logarithm but with a constant value or regular 2.71828182845904 rounded to 2.72).

With the model equations above, would be very difficult to interpret the regression coefficient. Hence the term introduced Odds Ratio or commonly abbreviated as Exp (B) or OR. Exp (B) is an exponent of the regression coefficients.

This study forms of regression equation is as follows:

Logit (p1) = Y = β0 + + β3X3 β2X2 β1X1 + + + β6X6 β5X5 β4X4 + μ
β0 is the intercept of the regression line is the model (constant)

Variable Response:

Y = 1 (Payment Credit Fluent)
Y = 0 (Payments Bad Debts)
2. Variable Predictors
X1 = Gender
X2 = Turnover of Enterprises value
X3 = Ceiling Loans
X4 = Period Repayments
X5 = Frequency Loans
X6 = System installment

The goodness of fit test model conducted with respect to the distribution of the chi-square value of Hosmer and Lemeshow with the hypothesis:

- H0 = There can be significant differences between the observed values with the values predicted by the model (model fit).
- H1 = There are significant differences between the observed values with the values predicted by the model (the model does not fit).

If the p-value of the three is greater than the statistical significance level (α = 0.1) then the decision is to accept H0, which means the model is quite feasible to be used in the prediction.

Tests on the significance of each predictor variable individually performed with a Wald test. Wald test (test the effect of each independent variable on the dependent variable). Wh statistics follow a normal distribution (Z), if the value of Wj> Z alpha / 2 two-tailed p-value of less than Wj statistical significance level (α = 0.1) then the decision is to reject H0 means variable predictor of all these k significant effect / significantly to the response variable.

H0: βi = 0 X did not affect Y
H1: βi ≠ 0 X significantly affect Y

Logistic regression was not limited only be applied in cases where the X variable of type interval or ratio. Logistic regression can also be applied to cases in which the X-type variable nominal or ordinal. It is analogous to linear regression with dummy variables.

DATA ANALYSIS, FINDING, AND INTERPRETATION

Descriptive of loan repayment respondents

All respondents from each category fluency loan repayments are identified based on the variables gender, Business Turnover, Credit Ceiling, repayment period, frequency loans, and installment system is as follows:

Table-1: An overview of loan repayment respondents by gender

No	Gender	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	Women	36	77%	17	61%	53	71%
2	Men	11	23%	11	39%	22	29%
	Total	47	100%	28	100%	75	100%

Source: Research Data

In Table-1 above it can be seen that in general, the borrowers are women who perform loan repayments smoothly as many as 36 people (77%). The proportion of female borrowers pay more smoothly than the proportion of men who perform substandard repayments of 23%. Also in terms of the proportion of women who are in arrears overdue for less than smooth and conversely the proportion of men who are in arrears greater than smooth. This means that the ability of women in the current loan repayment better than Men.

Table-2: Overview of loan repayment respondents by business turnover value

No	The amount of turnover (Rp.000)	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	0-1000	16	27%	3	20%	19	25%
2	>1000-2000	30	50%	7	47%	37	49%
3	>2000-3000	12	20%	4	27%	16	21%
4	>3000	2	3%	1	7%	3	4%
	Total	60	100%	15	100%	75	100%

Source: Research Data

At Table-2 the distribution of respondents who have a turnover between the smooth return of> 1 million-2 million rupiahs to the current proportion of 50% of total borrowers smoothly. However, when viewed by the distribution of the data rate of return on loans based on the turnover showed a relatively balanced distribution between each category levels of turnover.

Table-3: Overview of loan repayment respondents by the amount of credit ceiling

No	Amount of Credit Ceiling (Rp.000)	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	3000	8	16%	2	8%	10	13%
2	>3000-4000	13	27%	5	19%	18	24%
3	>4000	28	57%	19	73%	47	63%
	Total	49	100%	26	100%	75	100%

Source: Research Data

Based on the distribution of loan repayment in Table-3. it can be seen that the largest proportion of the arrears were respondents who had a ceiling value of over four million rupiahs to the proportion which is in arrears by 73% contrary to the category of a credit limit below would indicate a better rate of repayment. It can be concluded that the larger the loan limit then the chances of congestion increases.

Table-4: An overview of loan repayment respondents by a repayment period

No	The repayment period (months)	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	1-12	36	80%	23	77%	59	79%
2	>12-24	9	20%	4	13%	13	17%
3	>24	0	0%	3	10%	3	4%
	Total	45	100%	30	100%	75	100%

Source: Research Data

In Table-4 above can be seen that a borrower with a loan repayment period of> 24 months have awareness unfavorable to repay the loan with the number 3 to 3 people (100%). The proportion of borrowers with a loan repayment period of between 1 to 12 months classified in the current category as many (80%) and the proportion of delinquent borrowers as much (77%). Based on that data the longer term installments concluded the greater the chances of congestion.

Table-5: An overview of loan repayment respondents by frequency loans

No	Frequency Loans (time)	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	0-3	23	50%	15	52%	38	51%
2	>3-6	23	50%	12	41%	35	47%
3	>6	0	0%	2	7%	2	3%
	Total	46	100%	29	100%	75	100%

Source: Research Data

Overview loan repayments based on the frequency of loans seen that the proportion who never borrowed> 3-6 times the current installment has a better proportion (50%) compared to the proportion of

installments loss (41%) in that category. Also when compared with the category of 0-3 times the loan so that it can be concluded more often respondents borrow the better consciousness in making loan repayments.

Table-6: An overview of loan repayment respondents by installment system

No	Installment System	Category Installment				Total	Proportion
		Current		Delinquent			
		Total	Proportion	Total	Proportion		
1	Monthly	44	90%	25	96%	69	92%
2	Business Cycle	5	10%	1	4%	6	8%
	Total	49	100%	26	100%	75	100%

Source: Research Data

Repayments on installment credit based system, respondents installments with the pattern of the business cycle has a better chance smoothly in loan repayments compared to the proportion of respondents who do installments with the monthly installment system. Where out of six respondents who conduct business cycle installments only one respondent in arrears.

Analysis of the factors that affect the rate of loan repayment by SMEs

Factors influencing the rate of loan repayment by SMEs assisted PNPM-MP PPMK in Palembang is the turnover and Ceiling Loans. The response variable, in this case, consists of two alternative choices of current (1) and delinquent (0). At the 95 percent confidence level (α = 0.05), the overall test with the omnibus test in logistic regression models has P = 0.001. This shows that the value of P (0.015) <alpha 5% reject H0, meaning that at least one independent variables were significant or significant regression model. It can be concluded that one among the variables Gender, Business Turnover value, Credit Ceiling, the payback period, the frequency of system installment

loans and real effect on the repayment of SME loans PPMK Palembang.

Judging from the Goodness of fit test consisting of Hosmer and Lemeshow test showed that all P values (0.615)> 5% (α = 0.05) then accept H0. This shows that the model derived from the logistic regression analysis was fit or capable enough to explain the data.

Results of the Cox-Snell output R2 and Nagelkerke R, declare that as many as 52.3% of diversity can be explained by the model, while the rest (47.7%) is explained by factors (variables) other than research model. The result of the logistic regression of the factors that affect the rate of repayment of loan repayment can be seen in Table-7 and Table-8. Results of processing by logistic regression variables to produce a significant effect (significant) and the variables that had no significant effect (not significant) towards repayment of credit. Identification of significant variables can be viewed from the P value of the variable in question. If the P value of a variable less than 5 percent (P <5%), then these variables significantly affect loan repayments and vice versa.

Table-7: Predictor variables that significantly affect loan repayment

No.	Variable	Coefficient	P-value	Odds Ratio
1	Turnover of Enterprises value	2,418	0,001	11,223
2	Ceiling Loans	-2,700	0,001	0,067
3	Period Repayments	-0,185	0,030	0,831
4	System installment	-3,572	0,030	0,028

Source: Research Data

From the above table can be seen from the P value equal to (0.01) <α 5%, meaning that X2 (business turnover) significantly affected the Y, (reject H0 = no effect and accept H1 = effect). Based on the odds ratio value 11,223 means that borrowers with the greater turnover business had chances influence credit repayment substandard compared to borrowers with a smaller turnover if turnover increased 11,223 units, assuming other variables remain.

Judging from the P value equal to (0.001) <α 5% means that, X3 (credit ceilings) significantly affected the Y, (reject H0 = no effect and accept H1 = effect). Based on the odds ratio value -0.067 means that borrowers who have a smaller loan ceiling have a chance of affecting the current loan repayment compared to borrowers who have a loan limit is greater if smaller Ceiling loans amounted to 0,067 units, assuming other variables remain.

Judging from the P value equal to (0.001) <α 5% means that, X4 (Period of repayment) significantly affected the Y, (reject H0 = no effect and accept H1 = effect). Based on the odds ratio 0.867 means that borrowers who have payback periods longer have a chance affect loan repayments smoothly compared to borrowers who have a longer repayment period if the period is longer amounted to 0.831 units, assuming other variables remain.

Judging from the P value equal to (0.001) <α 5% means that, X6 (System Installment) significantly affected the Y, (reject H0 = no effect and accept H1 = effect). Based on the odds ratio 0.028 means that borrowers who do installments based on the Business Cycle have an opportunity influence credit repayment substandard compared to borrowers who conduct regular monthly installments amounting to 0,067 units, assuming other variables remain.

Table-8: Predictor variables were not significantly affected loan repayment

No.	Variable	Coefficient	P-value	Odds Ratio
1	Gender	1,780	0,042	5,927
2	Frequency Loans	0,588	0,056	1,800

Source: Research Data

CONCLUSION

Characteristics of borrowers who likely are experiencing Delinquent in the repayment of loans PPMK are Men, ceiling Credit> Rp.4000.000, the payback period of> 24 months, the frequency of 0-3 times and system loan monthly installment. Factors that affect and significantly related to the rate of repayment PPMK is a business turnover, Ceiling credits, payback periods and installment system. PNPM-MP PPMK parties and Assistant to be more selective in lending to SHGs PPMK by considering various things, especially in the amount of business turnover, the amount of the credit limit, the credit period and credit installment system. Fostering more intensive through assistance for strengthening the capacity of groups, training, OJT, and partnerships, especially in terms of business bookkeeping, business management, and business network.

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