

# Analysis on Non-Performing Loans in the Lembaga Perkreditan Desa as an Institution that Provides Credit to Villages Using the Perpetual System (Case Study on Gianyar Regency, Bali Province, Indonesia)

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## Abstract

Almost all *desa adat*<sup>1</sup> which was in the Province of Bali has the Lembaga Perkreditan Desa (LPD)<sup>2</sup> to support the economy of *krama*<sup>3</sup> *desa adat*, especially through the channeling of credit without collateral. To maintain the stability of the LPD, observation of the granting of credit by the LPD needs to be done, one of them by analysing the Non Performing Loan (NPL). Bank Indonesia sets 5% as maximum value of NPL. Gianyar Regency is one of regencies in the Province of Bali with the most number of LPD, but on the other side the value NPL LPD in the Gianyar Regency reach 11,03%. Research results with the techniques of SEM showed that the internal condition of the LPD, the condition of a prospective debtor LPD, LPD external conditions, and significant effects against the granting of the credit. Similarly, granting credit effect significantly to NPL LPD.

**Keywords:** Lembaga Perkreditan Desa (LPD), the granting of credits, Non Performing Loan (NPL)

## 1. Introduction

*Desa adat* is one of the social institutions that is traditional organization in the Province of Bali. *Desa adat* have some autonomy, one of which is autonomous in the social economy, i.e. the power to regulate the relationship between community groups, as well as managing the wealth of *desa adat*. The LPD is a financial institution owned *desa adat* which running business activities in *desa adat* and to service *krama desa adat*. LPD in the province of Bali is the best on the system of the rural credit funds and institutions in Indonesia, although there is a strong competition at the local level by the number of formal and informal institutions (Bedson, 2009). The existence of the LPD very helpful community of Bali to obtain credit without collateral, particularly to strengthen the venture capital community in the informal sector so as to increase the income and welfare of rural communities.

Gianyar is one of the eight regencies and one municipality in the province of Bali with the largest number of LPD in Bali province, or approximately 18.91% of LPD in the province of Bali totalling 1406 units. Therefore, the conditions of stability of LPD in the Gianyar Regency will effect is large enough for the LPD conditions of Bali in General. One form of assessment of the stability condition of LPD is by analyzing the NPL which is the ratio between the credit does not start with a total credit disbursed. Bank Indonesia sets a maximum 5% NPL, so that when a financial institution has an NPL ratio above 5% then it can be considered that the failure occurred in applying the strategy of granting credit that efficiently and effectively. The problem is that the value of the NPL in the Gianyar Regency in 2011 exceed 5%, i.e. 11.02%.

Credit developed into problematic can be caused by various things that come from internal party credit agencies, clients, and external conditions (Rivai, 2006). Therefore, it needs to be examined, the factors affecting the high NPL LPD, particularly about the factors that mempenagruhi the granting of credit. By knowing these factors, factor in the formulation of the provision and assessment in the granting of credit management would be more effective and efficient so that it can redirect LPD in suppressing the NPL which is quite high at the moment. Research frame of mind can be described according Figure 1.

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1 Village based on customary law. The desa adat is the owner of the land; the residents are leaseholders.

2 Village credit institution (in Bali)

3 Residents of a customary village

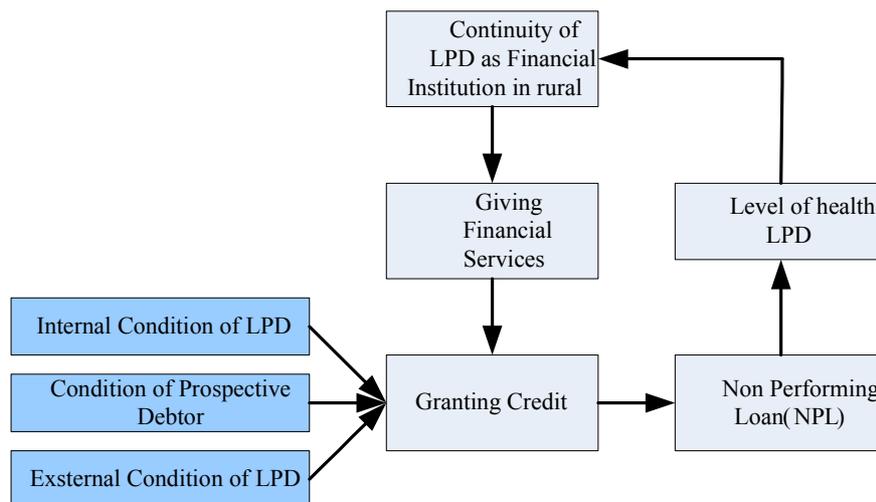


Figure 1. Research Frame Work

## 2. The Granting of Credit LPD

Credit is the ability to execute a purchase or hold a loan with a promise of payment would be done or suspended in an agreed period of time (Kohler, 1984). There are four elements of credit, i.e. an element of trust, time, degree of risk, and achievements (Suyatno, 1997). Belief is a belief that the lender gives good achievements in the form of money, goods or services, will be completely received back within a certain period in the future. Time is a period that separates between the awarding of achievements with the cons achievement which will be received in the future. Degree of risk a level of risk that would be faced as a result of the existence of the period separating the credit apemberian with the cons achievement which will be received in the future. Achievements (and non-achievements) is the object of credit given the creditor to the debtor. It is sometimes also considered to guarantee credit element. The collateral is goods or intangible assets provided the debtor to the bank/lender institutions as an effort in anticipation of various risks that may arise as a result of granting credit. The value of this guarantee is always greater than the amount of credit given. The aim is so that if the debtor is not able to pay off the debt, the lender can foreclose on the collateral as payment of the remaining credits are not capable of being repaid. In contrast to other financial institutions, the LPD is a financial institution that does not require a guarantee, because the sanctions for the debtor does not pay off credits are more likely on custom sanctions.

### 2.1 Internal and External Conditions of the LPD

LPD is a financial institution with two unique characteristics: (a) as an institution owned and governed by the sometimes village (*desa adat*), it is fully integrated into Balinese culture; (b) like no other financial institution, it is inclusive in outreach, sometimes covering almost all villages of Bali and the vast majority of its population. LPD status same with the rural banks (BPR), which serves as the institution of mediation, but there are some fundamental things that distinguish LPD with other financial institutions, i.e. in profit sharing and the existence of sanctions the Customs to the debtor who fails to pay in installments. LPD set with profit sharing proportion: 60% capital reserves; the village development fund of 20%; production services by 10%; and social funds 5%.

Standard health assessment of any financial intermediary institutions in Indonesia refers to the concept of a CAMEL (Capital, Asset quality, Management, Earning, Liquidity). However, in the health assessment/LPD internal conditions, the Government set the weighting element management is 0%, while the other 30% to 40% for capital, asset quality, rentability, 20% and 10% for liquidity. To external factors that are considered to affect the LPD granting credit, among others, environmental economy, as well as natural factor competition between banks or other financial institutions.

### 2.2 Condition of Prospective Debtor

Before a credit is first poured, a financial institution will conduct the assessment through a procedure against clients who seek credit for gaining the confidence that credit is channeled will definitely be back. The assessment includes certain criteria and have the measurements into a standard per bank. In general the standard assessment of prospective borrowers use 5C analysis i.e., character, capital, capacity, condition, and collateral.

Character is the nature or character of a prospective debtor is seen from background jobs or personal lifestyle, such as family, hobbies and spirit of social prospective debtor. Capital is the use of credit primarily for business capital is it effective or not. Capacity is the ability to know the prospective analysis of the debtor to repay the credit. Condition IE assessment to predict business prospects that will be financed prospective debtor.

Collateral is a guarantee given prospective borrowers, both physical and non physical. In granting credit, not collateral valuation LPD needs to be done because it is not necessary a guarantee to obtain credit in LPD.

### 2.3 Credit Collectability and Non Performing Loan (NPL)

Collectability is a credit based on the categorization of certain categories in order to monitor the smooth repayment (repayment) by the debtor with intent to know and get the real picture of the situation and condition of the credit or loans have been given to the public as users of such funds (Abdullah, 2005). Kolektabilitas credit consists of five classes (Tangkilian, 2003): pass; special mention; sub standard; doubtful; and loss. In accordance with the Bank Indonesia based on credit quality, the kolektabilitas are divided into two groups, namely:

the NPL (Non-Performing Loan), is said to be good provided that a maximum of 5% of total loans ( $NPL \leq 5\%$ ). The formula of calculation of the percentage of the NPL as follows: PL (Performing Loan), is said to be good condition at least 95% of the total credit ( $PL > 95\%$ ). The formula of calculation of the percentage of PL as follows:

- 1) The NPL, is said to be good provided that a maximum of 5% of total loans ( $NPL \leq 5\%$ ). The formula of calculation of the percentage of the NPL as follows:

$$NPL = \frac{\text{sub standard credit} + \text{doubtful credit} + \text{loss credit}}{\text{total credit}} \times 100\%$$

- 2) PL, is said to be good condition at least 95% of the total credit ( $PL > 95\%$ ). The formula calculation of the percentage of PL as follows:

$$PL = \frac{\text{pass credit} + \text{special mention credit}}{\text{total credit}} \times 100\%$$

### 2.4 Related Empirical Studies

#### 2.4.1 Empirical Studies About The Relationship Between Internal Condition of LPD Against Granting Credit

Research conducted by Voordeckers and it Steijvers (2003) by the method of analysis of continuation-ratio logit model thus shows that in small and medium enterprises in Belgium, internal conditions within the company a positive effect against the formation of strategies that exist in this part of the credit. Fedorenko, Schafer and Talaveran (2007) also expressed Taiwan's internal systems used by banks in providing positive effect his credit against a period of time in granting credit, using empirical models of analysis. Ono and Uesugi (2005) examine the lending business of small and medium-scale money in Japan. The research results showed that the company's internal conditions have a negative effect against the strategy of granting credit, where too much meddling from owner/managers in carrying out the strategy of running so many strategies that are made for personal gain. It is supported by the research of Leora Klapper (2001), using linear regression analysis.

#### 2.4.2 Empirical Studies About The Relationship Between The Condition of Prospective Debtors Against Granting Credit

Results of the study, Lopez Jimenez and Saurina (2007), the condition of the prospective candidate's specific condition such as debtor of the debtor undertook to influence the management in determining the strategy to be run by a financial institution. The results obtained from a study conducted in Spain. Likewise expressed by Kyaw (2008) that conduct research on financial institutions that perform financing in small and medium business sector in Myanmar by using the quantitative descriptive analysis. Alsace and Krahn (2002) with the analysis of empirical models get results that the condition of prospective debtors against the potential negative effect of granting credit, which thus have an influence is the internal conditions or conditions that exist in the company. In addition, one can find out the condition of a bank is definitely its own internal party, so that it can be said a bank-run strategy should be based on the existing system in the bank. It is supported by research conducted by Takang Felix Achou and Ntui Claudine Tenguh (2008), using linear regression analysis.

#### 2.4.3 Empirical Studies About The Relationship Between External Conditions Against Granting Credit

Research results Jimene, Lopez and Saurina (2007) shows the eksternal conditions such as bajwa market conditions in general demonstrate its influence in determining the management strategies which will be run by a financial institution. The results obtained from a study conducted in Spain. Similar results were also obtained from research conducted by Leora Klapper (2001) using linear regression analysis. Voordeckers and it Steijvers (2003) by the method of analysis of continuation-ratio logit model thus shows that in small and medium enterprises in Belgium outside environmental conditions have a negative effect against the formation of strategies that exist in this part of the credit. It is supported by research conducted by Takang Felix Achou and Ntui Claudine Tenguh (2008).

#### 2.4.4 Empirical Studies About The Relationship Between The Granting of Credit and the NPL

Research in financial institutions of the USA by Manove, Padila and Pagano (2001) using the data show that the equilibrium strategy of granting credit thus increasing the ratio of NPL. It is also revealed by Jessica Peterson and Isac Wadman (2004) to examine the credit markets in Italy and Sweden by using a media interview. From the above two studies revealed that the NPL is more influenced by factors outside management, such as the State of the market anticipated by late strategy made by the management in the company maximize performance, notably

pressing the ratio of NPL. According to Chen (2003) that examines the behavior of financial institutions in China, lending strategies thus influence negative against the NPL. Where the conduct of credit granting is judged capable of lowering the NPL value, in this case the conduct of the granting of loans and the NPL has the opposite direction. Likewise expressed by Hwang and Wu (2006) which conduct research in Taiwan. Both of these studies are equally descriptive qualitative analysis.

### 3. Concepts Framework and Hypotheses

Concepts framework drawn up on this research fit on Figure 2.

Furthermore organized a hypothetical relationship between the internal condition, condition of prospective borrowers, and LPD external conditions with granting credit as well as NPL LPD.

H1: LPD internal condition Factor effect significantly to granting credit on Gianyar

H2 LPD: LPD prospective debtor condition Factor effect significantly to granting credit on Gianyar

H3 LPD: LPD external influential Factors condition significantly to granting credit on LPD in the Gianyar Regency

H4: granting credit effect significantly to the NPL in LPD in the Gianyar Regency

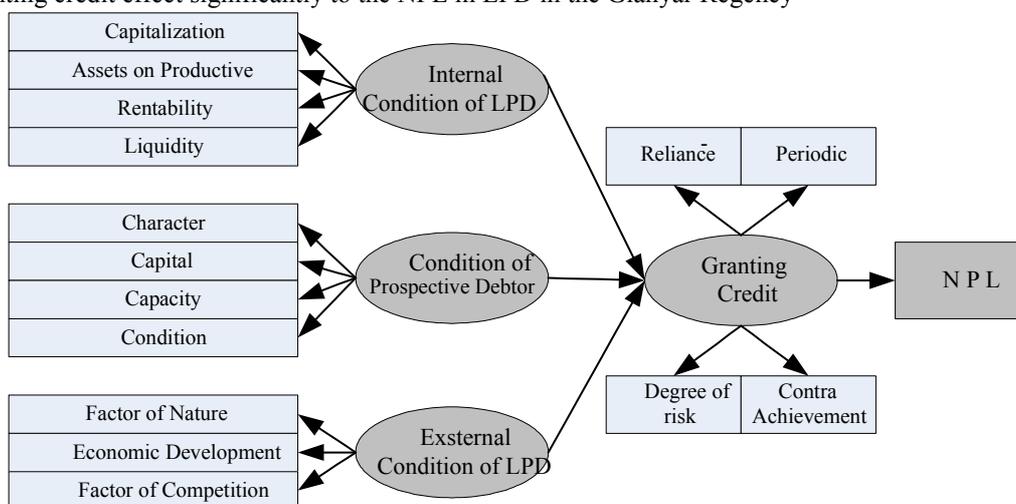


Figure 2. The Concept Framework of The Research of The Factors Affecting The Granting of Credit and Its Impact On The NPL LPD

### 4. Research Method

The research done to LPD in the Gianyar Regency with a total 269 units, but the 5 (five) of them are defunct, so the population of this research as much as 264 units LPD. With the formula Slovin and 5% error, degrees obtained samples as much as 159 units LPD. Next the sample determination techniques done in a proportional stratified random sampling, where the strata in question is the health condition of LPD. Samples taken proportionately in each strata and at every subdistrict. Gianyar Regency itself is divided into seven districts.

The technique of data collection by using a questionnaire that has been tested for validity and its reliability too. To perform data analysis on research using structural equation model analysis technique (SEM) with the help of software AMOS. In the formation of the model and hypothesis testing, SEM is a combination of the analysis of the factor and regression analysis. There are two types of analysis, i.e. to test data (test of normality, outliers, tests test the correlation), and the second to test model (Goodness of fit test and regression weight). To make a complete SEM modeling, there are several steps that must be done.

- 1) Development of model-based theory
- 2) Set up flowchart (path diagram), appropriate flowchart in Figure 3.
- 3) Conversion flowchart into the equation. If flow charts as Figure 3 converted into structural equation then its equations is as follows.  

$$LO = \beta_1 INT + z_1$$

$$LO = \beta_2 BO + z_1$$

$$LO = \beta_3 EX + z_1$$

$$NPL = \beta_4 LO + z_2$$
- 4) Choose matrix inputs and estimation models.
- 5) To evaluate the possibility if the emergence of the problem of the identification.
- 6) Evaluate the Goodness of fit
- 7) Interpretation and modification of the model

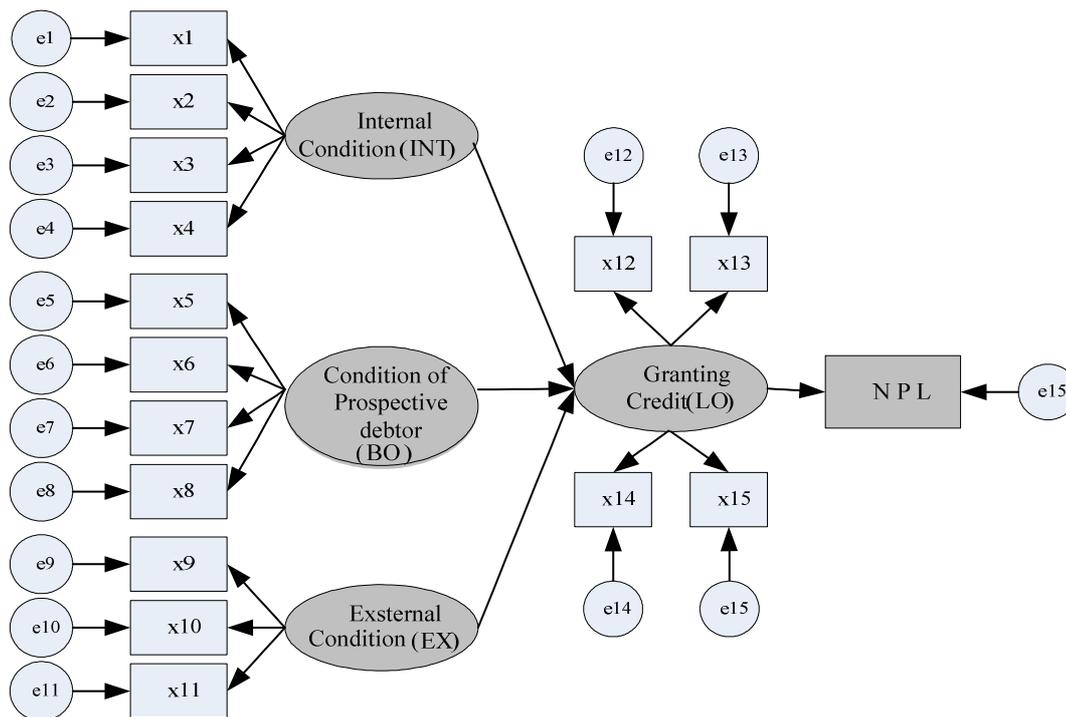


Figure 3. Path Diagram

## 5. Descriptive Research Results

To the results of the data processing, the average value obtained internal conditions LPD in the Gianyar Regency is 81.74, i.e. in the category healthy. Next to the variable condition of the prospective debtor LPD then average condition of prospective borrowers LPD in the Gianyar Regency is 72.36, with indicator character, value and condition of the lowest. LPD external condition variable with an average value of LPD internal conditions in the Gianyar Regency is 69.02, with the indicator on the competition of the business which are perceived on the highest and the lowest natural factor. Next for variable credit granting LPD then average lending index LPD Gianyar is a 71.18.

## 6. The Result of SEM Analysis

### 6.1 Confirmatory Factor Analysis

Confirmatory factor analysis is measured indicators phase of latent variables in the model.

#### 1) Confirmatory factor analysis to exogenous variable

The eligibility test results (goodness of fit) on the analysis of exogenous variable confirmatory can be seen in Table 1.

Table 1. Results of Testing The Feasibility Factors Confirmatory of Exogenous Variables

Goodness of Fit Indexs	Cut off Value	Result	Model Evaluation
Chi-Square	Kecil	55,611	Fit
Probability	$\geq 0,05$	0,055	Fit
CMIN/DF	$\leq 2,00$	1,356	Fit
GFI	$\geq 0,90$	0,928	Fit
AGFI	$\geq 0,90$	0,884	Marginal
RMSEA	$\leq 0,90$	0,065	Fit
TLI	$\geq 0,95$	0,980	Fit
CFI	$\geq 0,95$	0,985	Fit

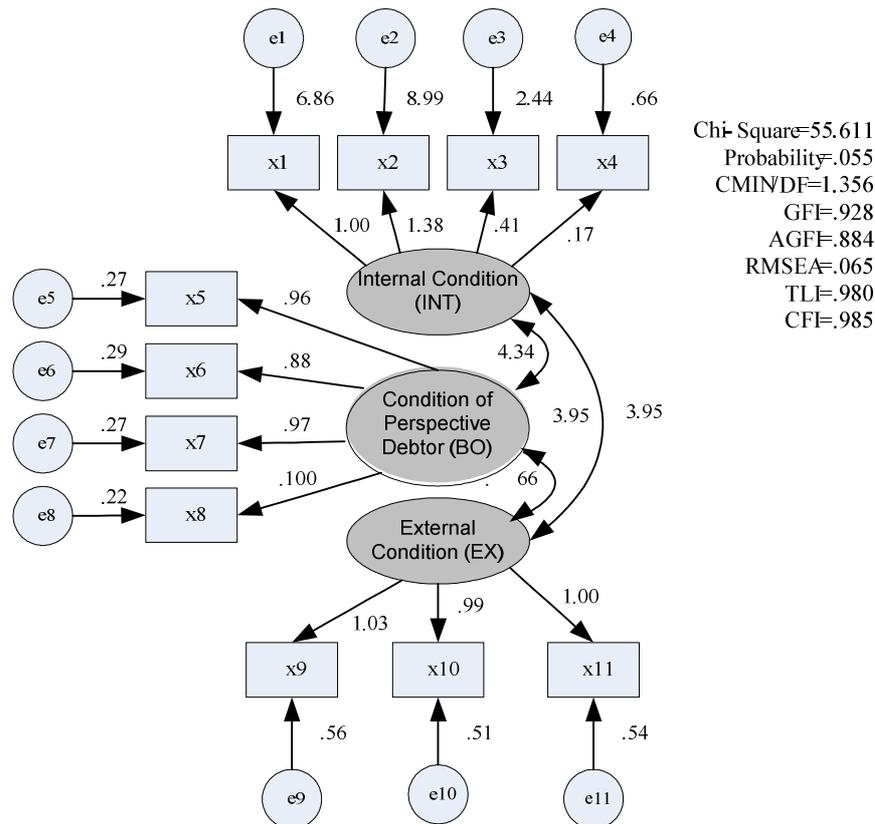


Figure 4. Confirmatory Analysis of Exogenous Variable

The results obtained value testing goodness of fit for the chi square is 55.611, probability of 0.055, and measures of feasibility the other models are also in the category either. Next up for testing the significance of the indicator-an indicator which forms a latent variable analyzed from the component regression weight value. Table 2 shows the test of the significance of each indicator in the form of the latent variable.

From the results of confirmatory factor analysis on exogenous variables retrieved the value of testing on each factor forming an invalid constructs showed high significance, so it is inferred that these indicators indicator well enough to form/latent variable gauge.

Table 2. The Value of The Regression Weight at Confirmatory Factor Analysis of Exogenous Variable

			Std.Est	Estimate	SE	CR	P
x1	←	LPD's Internal Condition	0,886	1,000			0,000
x2	←	LPD's Internal Condition	0,917	1,377	0,073	18,767	0,000
x3	←	LPD's Internal Condition	0,799	0,414	0,030	13,937	0,000
x4	←	LPD's Internal Condition	0,732	0,173	0,014	11,972	0,000
x5	←	Condition of Perspective LPD's Debtor	0,836	0,962	0,064	14,979	0,000
x6	←	Condition of Perspective LPD's Debtor	0,799	0,881	0,064	13,858	0,000
x7	←	Condition of Perspective LPD's Debtor	0,838	0,969	0,064	15,058	0,000
x8	←	Condition of Perspective LPD's Debtor	0,866	1,000			0,000
x9	←	LPD's External Condition	0,673	1,029	0,105	9,846	0,000
x10	←	LPD's External Condition	0,673	0,988	0,100	9,851	0,000
x11	←	LPD's External Condition	0,669	1,000			0,000

2) Confirmatory factor analysis untuk variable endogen

Confirmatory factor analysis for feasibility testing results of the endogenous variables (goodness of fit) on the confirmatory analysis of endogenous variable can be seen in table 3.

Table 3. Results of Feasibility Testing of Confirmatory Factor of Endogenous Variable

Goodness of Fit Indexes	Cut off Value	Result	Model Evaluation
Chi-Square	Kecil	2,261	Fit
Probability	$\geq 0,05$	0,323	Fit
CMIN/DF	$\leq 2,00$	1,130	Fit
GFI	$\geq 0,90$	0,993	Fit
AGFI	$\geq 0,90$	0,966	Fit
RMSEA	$\leq 0,90$	0,029	Fit
TLI	$\geq 0,95$	0,998	Fit
CFI	$\geq 0,95$	0,999	Fit

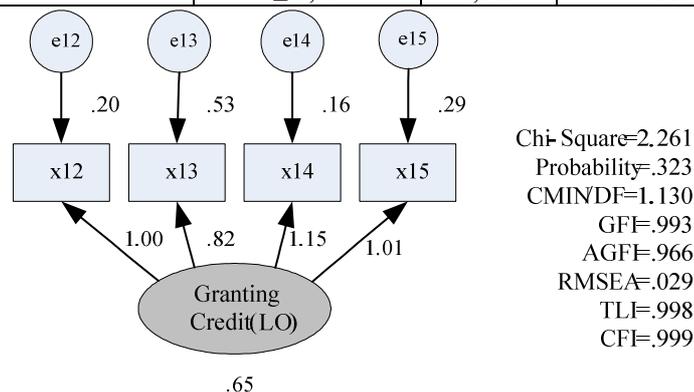


Figure 5. Confirmatory Analysis of The Endogenous Variable

Confirmatory factor analysis results obtained value testing goodness of fit for the chi square is of 2.261, probability of 0.323, and measures feasibility of the other models are also in the category either. Next up for testing the significance of the indicator-an indicator which forms a latent variable analyzed from the component regression weight value. Table 4 shows the test of the significance of each indicator in the form of the latent variable.

Table 4. The value of the Regression Weight on Confirmatory Factor Analysis Endogenous Variables

			Std.Est	Estimate	SE	CR	P
x1	←	LPD's Internal Condition	0,886	1,000			0,000
x2	←	LPD's Internal Condition	0,917	1,377	0,073	18,767	0,000
x3	←	LPD's Internal Condition	0,799	0,414	0,030	13,937	0,000
x4	←	LPD's Internal Condition	0,732	0,173	0,014	11,972	0,000

From the results of the analysis of the confirmatory factor in the endogenous variable retrieved the value of testing on each factor forming an invalid constructs showed high significance, so it is inferred that these indicators indicator well enough to form/latent variable gauge.

### 6.2 Full Model Analysis of Structural Equation Modelling

After an analysis of the degree of unidimensionality of dimensions/indicator latent variable, forming next SEM analysis conducted in the full model, with results as Figure 5.

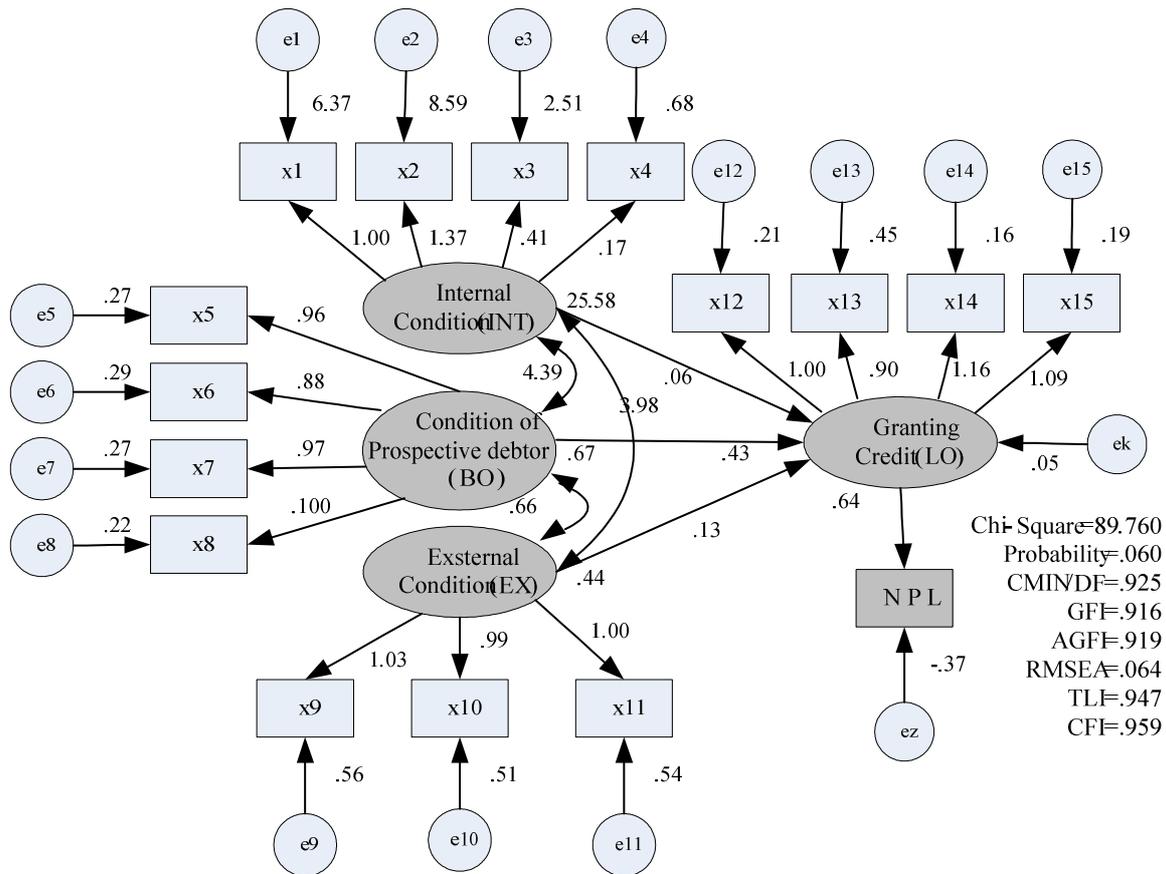


Figure 6. Full Model of SEM Analysis

The results of feasibility test of the model of this research developed according Table 5.

Table 5. Results of Testing The Feasibility of The Research Model

Goodness of Fit Indexes	Cut off Value	Result	Model Evaluation
Chi-Square	Kecil	89,760	Fit
Probability	$\geq 0,05$	0,060	Fit
CMIN/DF	$\leq 2,00$	0,925	Fit
GFI	$\geq 0,90$	0,916	Fit
AGFI	$\geq 0,90$	0,919	Fit
RMSEA	$\leq 0,90$	0,064	Fit
TLI	$\geq 0,95$	0,947	Marginal
CFI	$\geq 0,95$	0,959	Fit

In practice very difficult to get decent models with meets all the criteria. As a rule of thumb, when one of the criteria already fulfilled then the model considered worthy (Widarjono, 2010). Based on the analysis done that the full model has fulfilled more than one criteria test the feasibility of the model, so this model is acceptable.

### 6.3 Testing the assumptions of SEM

Testing study on SEM assumption has been made with the following results.

- 1) The results of the evaluation of the results of the data shows that the normality there are no numbers that exceed the limits of abnormality with the cut off  $\pm 2.58$ , means the normal spread of data.
- 2) The results of the evaluation of the test results that indicate outliers there is no indicator that has a univariate and multivariate outlier
- 3) The results determinant of sample covariance matrix are far from zero, so that the research data are used there is no multicollinearity.
- 4) Not found residual covariance component values more than residual terms so fulfilled 2.58 evaluation
- 5) The results of reliability and variance extract indicates the number of variances of the indicator that is extracted by invalid constructs can be accepted.

### 6.4 Hypotheses Testing

Testing of all hypotheses in this research have done with critical ratio analysis (CR) and probability of causality

of a relationship. Hypotheses testing can be seen in Table 6 and Table 7.

Table 6. Hypotheses Testing

			Std.Est	Estimate	SE	CR	P
Granting Credit	←	LPD's Internal Condition	0,384	0,061	0,011	5,436	0,000
Granting Credit	←	Condition of Perspective LPD's Debtor	0,436	0,427	0,065	6,589	0,000
Granting Credit	←	LPD's External Condition	0,110	0,133	0,025	5,302	0,000
NPL	←	Granting Credit	-0,785	-0,918	0,082	- 11,974	0,000

Table 7. The Result of Hypotheses Testing

Hypotheses		Result
H1	LPD's internal condition has a significant influence on granting credit.	Fit
H2	Condition of perspective LPD's debtor has a significant influence on granting credit.	Fit
H3	LPD's external condition has a significant influence on granting credit.	Fit
H4	Granting credit has a significant influence on Non Performing Loan.	Fit

The magnitude of the influence of a latent variable can be separated into direct effects, indirect effects and total effects as Table 8.

Table 8. Summary of The Influence Coefficient of Direct, Indirect and Total Effect Between Variables

Variable		Granting Credit	NPL
LPD's Internal Condition	Direct Effect	0,061	
	Indirect Effect		-0,461
	Total Effect	0,061	-0,461
Condition of Perspective LPD's Debtor	Direct Effect	0,427	
	Indirect Effect		-3,254
	Total Effect	0,427	-3,254
LPD's External Condition	Direct Effect	0,133	
	Indirect Effect		-1,012
	Total Effect	0,133	-1,012
Granting Credit	Direct Effect		-7,618
	Indirect Effect		
	Total Effect		-7,618

## 7. Conclusion

LPD is the institution of rural credit funds and give credit without collateral by making social capital and institutional foundations as indigenous villages. LPD internal condition, condition of prospective borrowers LPD LPD external conditions, and the respective positive and significant effect against the judgment granting the credit. Subsequent granting credit and significant negative effect against the NPL LPD, which means when granting credit is getting better, then it will lower the NPL, instead granting credit gets worse, it will increase the value of the NPL.

The existence of the LPD has a role in social and economic fields in the countryside. First, the LPD have open access total against financial services to all manners of indigenous villages with minimal transaction costs without distinguish gender. Second, the LPD have become a microfinance institution with high efficiency. The third significant impact to the development of LPD effort local, by increasing the financial capacity of micro and small enterprises through the distribution of credit. Fourth, LPD accumulate savings safely and provide access to credit with an interest rate of interest. Fifth, LPD directly impact the financial improvement of the society. Sixth, the unemployment rate also declined. Seventh, LPD improve family welfare krama village through different paths.

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