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FACTORS AFFECTING THE HOUSEHOLD'S REPAYMENT ABILITY ON TIME IN THE MEKONG DELTA,VIETNAM

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Abstract

This study attempts to determine the factors affecting household's repayment ability on time in the Mekong Delta, Vietnam. This study conducted surveys of 326 farmers and filtered out 135 farmers who are currently in debt to credit institutions and whose payments are not due or have been paid within 6 months. Based on the data, binary Logistic was used for research. SPSS ver22 was used to measure the factors including age, educational level, size of family, number of dependents, size of farm, farm income, natural disasters - epidemics, interest rate to household's repayment ability. The result of the study indicates that educational level, size of family, size of farm, farm income significantly affected household's repayment ability. The result also shows that number of dependents, size of farm, farm income, natural disasters - epidemics, interest rate have negative effect on household's repayment ability.

Keywords: repayment ability, debt, household, Mekong Delta, credit institution

Introduction

Repayment ability on time in developing countries has become a major issue in the management of agricultural credit, particularly for smallholder farmers with limited mortgage assets. Social Policy Bank is one of the economic leverage tools of a country to help poor, near-poor households and policy beneficiaries to access preferential credit capital to develop production, improving living conditions, rising out of poverty in order to contributing to the implementation of economic development policies associated with hunger eradication and poverty alleviation and social security. Social funds provide for poor and near poor households to purchase machinery, equipment, tools, seedlings, fertilizers, livestock feeds ... to develop production and business. Although the Social Policy Bank operates for non-profit purposes, is guaranteed the solvency by the government, the compulsory reserve ratio is 0%, does not have to participate in deposit insurance, is exempt from tax and budget payables but the risk of capital losses arising when the borrower fails to make repayments of debt including interest or principal upon maturity or loss of principal is a matter for which the social policy banks still have to interested in it to maintain capital for survival and development. Repayment performance referred to the total amount of loans to be paid on time in the loan contract (Godquin, 2004; Nawai & Shariff, 2012). Thus, when the borrower pays the total amount of the loan on time,

repayment is considered effective. Social policy banks are always concerned about the repayment ability on time or the repayment performance to minimize the risk of their operations. This study focuses on consideration of the factors affecting the household's repayment ability on time in the River Delta, Vietnam. This is one of the largest agricultural development areas in Vietnam but has many risks in repayment ability.

Literature Reviews

In earlier times, the study focused on group-based lending (Besley & Coate, 1995; Ghatak, 1999; Godquin, 2004; Sharma & Zeller, 1997), the researchers said that the group-based lending repayment reduced risk, increased repayment capacity, therefore they recommend that credit institutions provide group-based lending. The recent research has to change, some studies indicate group lending was not necessarily reduce the risk that uses of the direct supervisor, regularly repayment schedule and uses of non-refinancing threats are factors to produce high repayment rates of from low-income borrowers without requiring collateral and without group lending contracts which have a general responsibility (Aghion & Morduch, 2000). These studies focused on the personal lending repayment(Aghion & Morduch, 2000; Nawai & Shariff, 2012; Young-Chul, 1978). The credit institutions providing funds to low income groups tend to choose the main market segments as rural and households. Many studies have examined the factors affecting to household's repayment ability.

Young- Chul studied the factors affecting the small farm's repayment ability in South Korea. The purpose of this study was to assess the household's repayment performance repayment and to examine the factors affecting the small farm's repayment ability in South Korea. Farm size, the process of surveying when the loan is made, the profit of the farm affect the repayment ability, in which farm size has a negative impact to the repayment ability(Young-Chul, 1978).

In another study of the factors affecting the smallholder's repayment ability in Malawi, China et al. (1997) has shown income from the crop, farm size, level of diversification, received conversion income and quality information affecting the smallholder's repayment ability(Chirwa, 1997).

Okorie examined the determinants of the small farmers' repayment who were customers of State Agricultural Credit Corporation Ondo in Nigeria. The four key determinants that was identified to have a great impact on the repayment performance of farmers, including: the nature of disbursements, the timeliness of disbursements and profitability of the business has been invested capital (Okorie, 1986).

In Orebiyi's research, the author showed the decisive factors affecting household's repayment ability were the loan amount, age, the literacy level of the borrower, the level of loan supervision(Orebiyi, 2002).

Oke et al. studied the factors affecting the household's repayment ability in South Western Nigeria, the study indicated to the factors affecting the household's repayment ability include: income, ability of interaction with the bank, amount of business investment, loan amount, level of access to business information, penalties for

late repayment, the number of days between loan application and disbursement date, poverty index. Poverty index is a factor hindering repayment(Oke, Adeyemo, & Agbonlahor, 2007)

Afolabi showed that the factors affecting household's repayment ability were farming experience, income from agriculture, non-farm income, farm size, family size, non farm expenses, interest rates, cultivation cost. In particular, family size, cultivation cost and interest rate have negative impact on repayment ability. The study identified the reasons for the unpaid debt were crop failures, family commitments, disbursement of loan funds, high production costs, loan amounts, experience, gross farm income, interest rates and non-farm income have a significant impact on repayment ability. However, family size and non-farm expenditure have a negative impact on repayment ability(Afolabi, 2010).

The factors including the loan purpose, interest rates, income after borrowing, age of household head, key products to generate farm income, member with income in the household, the level of household head's education were factors affecting the repayment ability of households in Hau Giang province, following to Loc & Binh(Loc & Binh, 2011).

Nghi pointed out that the educational level of the household head, ethnicity, savings and loan purpose have a positive impact on the household's repayment ability on time in rural areas of Tra Vinh province; while the factor proportion of dependents, loan purpose, interest rate and age have a negative impact on the household's repayment ability on time(Nghi, 2012).

Research model and hypotheses

Based on previous studies on the factors affecting the household's repayment ability on time in agricultural field(Afolabi, 2010; Chirwa, 1997; Loc & Binh, 2011; Nghi, 2012; Okorie, 1986; Orebiyi, 2002; Yotopoulos, 1976; Young-Chul, 1978), and a number of other studies on the household's repayment ability without the agricultural sector, such as services, trade and retail in rural areas(Aghion & Morduch, 2000; Nawai & Shariff, 2012), the study propose a research model with the expectation of variables following as:

Table 1. Interpretation of independent variables in research models and research hypotheses

Variable	Expected	Source
Age	-	(Aghion & Morduch, 2000; Loc & Binh, 2011; Nawai & Shariff, 2012; Nghi, 2012; Orebiyi, 2002)
Educational level	+	(Loc & Binh, 2011; Nghi, 2012; Orebiyi, 2002)
Size of Family	-	(Afolabi, 2010)
Number of dependents	-	(Nghi, 2012)
Size of Farm	-	(Young-Chul, 1978)
Farm income	+	(Loc & Binh, 2011; Oke et al., 2007; Okorie, 1986; Young-Chul, 1978)
Impact of natural disasters, epidemics	-	(Afolabi, 2010)
Interest rate	-	(Afolabi, 2010; Loc & Binh, 2011; Nghi, 2012)

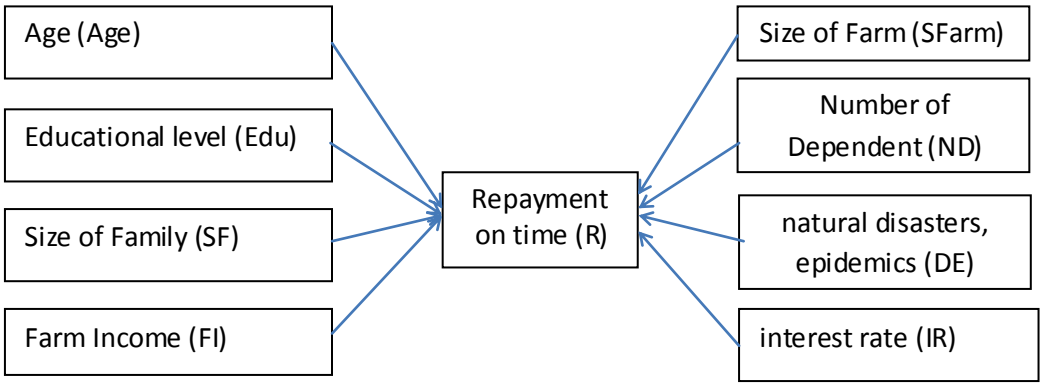

Figure 1. Research Model

The research model is defined as follows:

$$\mathbf{Log\ (\ R\ ) = \alpha - \beta_1\ Age + \beta_2 Edu - \beta_3 SF + \beta_4 FI\ - ß_5 SFarm - \beta_6 ND - \beta_7 DE - \beta_8 IR\ + ei}$$

Where,

R: Repayment ability on time (Y = 0; Y = 1) .

Age: Age of the borrower (years):

Edu: Education level of the borrowers

SF: Family size (persons)

ND: Number of dependents (persons)

SFarm: Farm size (ha)

FI: Farm income (million VND / year)

DE: Natural disasters, epidemics

IR: Interest rate (% / month)

Methods

The questionnaire was designed based on previous research, based on two major studies of Afolabi (2010) and Nghi (2012)(Afolabi, 2010; Nghi, 2012). These test questions have been reviewed by some experts with experience in credit management at social policy banks and farmers with bank loans for production. The questionnaire has five questions that are used to collect general information on respondents such as gender, education, experience, ethnicity, age, occupation; 15 questions for information to assess the household's repayment ability on time.

Respondents were farmers using bank loans in the Mekong Delta, Vietnam. Samples were selected by random sampling. The questionnaires were sent directly to the respondents (the farmer borrows money from the bank, with a deadline for compulsory loan before February 2018), with a total of 326 questionnaires. Collection of questionnaires was conducted by the research team for a period of approximately three weeks. After eliminating invalid responses, the total number of questionnaires were 135. Data after being stored and processed on two software are excel and SPSS 22.

Data Analysis

According to the survey results, 135 households in the Mekong Delta have 48.9% of primary school, 37.8% of lower secondary and 11.9% of upper secondary education. The survey also shows that household size has a large population of 6-8 persons. The age of the head of household is mostly from 20 to 50 (accounting for 52% and 38%). The farm size ranges from 1 to 4 hectares, the number of dependents (without generating income in the household) is 2-3 persons. Most of the income of household is from 100 million to less than 300 million VND (57%).

As a result of the survey on household's loans, interest rates ranged from 0.6% per month to 0.8% per month.

The model determines the repayment ability based on eight independent factors, including Age, Edu, SF, ND, Sfarm, FI, LP, DE, IR and dependent variable are R

Binary dependent variable has two values 0 and 1 corresponding to default and debt repayment.

Omnibus Tests of Model Coefficients

		Chi-square	DF	Sig.
Step 1	Step	83.493	8	.000
	Block	83.493	8	.000
	Model	83.493	8	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
first	36.536[a]	.461	.783

a. Estimation terminated at iteration number 9 because parameter estimates changed by less than .001.

On the Model Summary table: The -2 Log likelihood index of the model is 36.536[a] shows the suitability of the overall model of the authors proposed above.

Classification Table[a]

Observed			Predicted		
			R		Percentage Correct
			0	1	
Step 1	R	0	18	4	81.8
		1	4	109	96.5
		Overall Percentage			94.1

a. The cut value is .500

Table **Classification Table** shows the classification of payables and defaults on two criteria: real and predicted observations. Of the 22 observed cases of default, 18 were

unlikely to be repaid, with a predicted rate of 81.8%. In 113 cases of debt repayment, 109 cases were expected to be paid, so the predicted correct rate was 109/133 = 96.5

Analysis of Binary Logistic regression on SPSS 22 software to find the factors affecting the timely repayment ability due to the above model, with the hypothesis test Sig.F = 0.00 < 5%. The analysis showed that in the eight independent variables included in the model, Age variables (Age) was not statistically with significant level at the 5%, the remaining seven variables were statistically with significant level at the 5%, in which the educational level (Edu) , size of Family (SF), size of farm (Sfarm) , and farm income (FI) have a positive influence on the timely repayment ability. While the remaining factors as the number of dependents (ND), the interest rate (IR), impact of natural disasters, epidemics (DE) have a negative impact with the ability timely repayment ability of the households in Cuu Long Delta, Vietnam; in which, the interest rate factor has the strongest impact on timely repayment ability of the households.

Table 2. Results table of variables in the equation

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Edu	2.591	1.168	4.925	1	.026	13.349
	SF	.904	.321	7.928	1	.005	2.470
	ND	-2.018	.638	10.008	1	.002	.133
	Sfarm	1.147	.431	7.088	1	.008	3.149
	FI	1.163	.527	4.875	1	.027	3.199
	DE	-2.801	1.414	3.923	1	.048	.061
	Age	-1.537	.825	3.469	1	.063	.215
	IR	-23.425	6.762	12.000	1	.001	.000
	Constant	18.161	6.330	8.231	1	.004	77147508.701

a. Variable(s) entered on step 1: Edu, SF, ND, Sfarm, FI, DE, Age, IR.

Findings and Implications

The result shows that the education level (Edu) of the household head (borrower) has a positive impact on timely repayment ability of the households. In general, the higher level of education can lead to the higher level of awareness, leading to a better management capacity, a better organization of production and business activities, thus generating better income. This finding is consistent with the initial hypothesis of the study and is consistent with the results of previous studies (Loc & Binh, 2011; Nghi, 2012; Orebiyi, 2002). In order to enhance the efficiency of timely repayment ability, the state managers, stakeholders in agricultural and rural development projects, hunger eradication and poverty reduction should have support programs, training, career counseling, agricultural production techniques for farmers to help them have better knowledge, organize the production process better.

Farm income (FI) has a significant positive effect on timely repayment ability of households. Obviously, the higher the income, the more likely timely repayment ability, because farm income is considered to be the main source of households' income. This result is consistent with the initial hypothesis of the study and consistent with the results of all previous studies(Loc & Binh, 2011; Oke et al., 2007; Okorie, 1986; Young-Chul, 1978)

The age of the household head (borrower) (Age), the number of dependents (ND), the interest rate (IR) are three factors that have a negative impact on timely repayment ability. This can be explained. The higher the borrower's age, the higher the risk of repayment ability. A greater number of dependents are more likely to default on debt on time because the number of dependents in the household is related to the costs that the household has to pay not in the implementation of the project using production loan capital, thereby reducing the net income of farmers led to reduced resources for loan repayment. Interest rates are a significant factor affecting timely repayment ability because interest rates are the cost of borrowing that the borrower has to pay, which is a reduction in net income of the household. Therefore, when reviewing loan applications to ensure the effectiveness of loan repayment, lenders should carefully assess the case of high age borrowers, the high number of dependents in the households. On the other hand, lenders need to have a reasonable interest rate policy so that the borrower can better guarantee their timely repayment ability. High interest rates can easily lead to low repayment ability. This result is consistent with the initial hypothesis of the study and consistent with the results of all previous studies(Afolabi, 2010; Aghion & Morduch, 2000; Loc & Binh, 2011; Nawai & Shariff, 2012; Nghi, 2012; Orebiyi, 2002)

Size of family (SF) and size of farm (Sfarm), according to research results, have a positive impact on household's timely repayment ability in the Mekong Delta, Viet Nam. However, this result refutes the initial hypothesis of the study that there is a negative relationship, which is also contrary to the results of previous studies (Afolabi, 2010; Young-Chul, 1978). In particular, Afolabi pointed out that family size has a negative impact on household's timely repayment ability, Young-Chul points out that farm size has a negative impact on household's timely repayment ability.

Conclusions

The results show seven factors affecting household's timely repayment ability in the Mekong Delta, Vietnam, including four positive factors, three negative factors of the eight initially factors of the research model. This result provides the basis for lenders to have a realistic view of their loan repayment effectiveness, and to adopt appropriate policies and practices to mitigate risk during operation. On the other hand, it can also help local, state, and local macro managers to adopt appropriate policies to implement poverty alleviation programs and ensure social security.

There are some limitations in this study, the factors only have a simple linear relationship, New research model may increase other factors and build a complex linear, nonlinear relationships due to show better influence, which may have intermediate

variables. The sample size of the study, although appropriate, may increase further to ensure better representation for the whole.

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