

# An Empirical Study on Satisfaction Evaluation of Rural Land Mortgage Loan Supply

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**Abstract.** Based on the perspective of farmers' income gap and ordered Probit model, this paper provides a theoretical basis for the national promotion at the end of 2017 by analyzing the supply effect of rural Land mortgage loans in Sichuan, Yunnan and Guizhou in March 2007 to in March 2016. From the perspective of income grouping, the same factors have different effects on the farmers with different income, and the significant factors are the mortgaged housing area and asset valuation. Secondly, from the overall perspective of farmers, the level of education, interest rate, the expected degree of satisfaction of assets, and the help of funds to family also determine the level of satisfaction of farmers to a large extent. Based on the research conclusions, this paper puts forward to further expand the scope and mode of mortgage guarantee and so on.

## 1. Introduction

With the implementation of grain subsidies and new socialist countryside construction, China's rural economy has been further developed. However, for a long time, China's rural financial assets are still lacking in liquidity, the supply of funds is insufficient, and the progress of financial reform cannot be achieved by leaps and bounds, which have, to some extent, constrained the development of the rural economy. In response to this situation, in 2017 the central document proposed to further promote the right to operate contracted land and rural Land mortgage loans pilot to explore the development of large agricultural machinery, agricultural production facilities mortgage business. "Housing property rights" and "land contractual management rights" are important components of rural property rights. Besides, Mortgage loans with "property rights to rural housing" are innovative attempts to solve the problem of loans for farmers lacking collaterals. On August 10, 2015, the State Council issued the Guiding Opinions on the Implementation of the Pilot Projects for the Operation of Rural Contracted Land and Mortgage Assets of Farmers' Housing on the 45th Issued by Guofa [2015], which granted the mortgage financing function of farmers' housing property rights, providing guidance on how to solve the problem of "mortgage, security and loan difficulties" for rural households. As a new type of financing method, the rural home ownership mortgage loan business has been piloted in provinces across the country.

Many scholars have done a lot of research on customer satisfaction evaluation of financial services, including the construction of satisfaction index. Sheng Lei (2014) put forward the customer satisfaction (CSI) in the commercial bank evaluation system and measurement methods, and then they introduced to a bank in Shanghai to amend and improve. Other scholars have done a lot of analysis on the influencing factors of customer satisfaction of different types of financial institutions and different types of financial services. Wang Qin (2003) used rank-based model on the factors which influences the



customer satisfaction of three kinds of new rural financial institutions, and found that institutional image, network settings and product quality will significantly affect the satisfaction of the customer. Besides, customers have different requirements on the safety and simplicity of different financial institutions. In addition to researches on the personal financial business and corporate financial business satisfaction, Wang Xinglong(2011) found that different types of commercial banks have differences in financial services brands of small and medium-sized enterprises, professional and initiative service and efficiency are the main factors that influence the demand of financial services satisfaction of small and medium-sized enterprises, according to the survey of the 438 national sample of small and medium-sized enterprises.

At present, the research on the customer satisfaction of the rural financial services in rural areas is relatively exile, especially the evaluation of the farmers' satisfaction with the land mortgage loans whose research process is almost blank. The empirical researches generally carry out from the perspective of micro farmers, and the studies always focus on the overall reflection of farmers, which cannot make a reasonable classification of the income level of farmers. As a result, these current researches can't reasonably reflect the evaluation of farmers with different economic conditions on the implementation of this policy. At the same time, in the existing literatures, the selection of the influencing factors mainly focuses on the family characteristics of the farmers, and all has not been selected from the factors affecting the farmers' participation in the business process. In view of the current situation of domestic research, this paper uses the field investigation from the family characteristics, farmers' participation and other aspects of the selection of factors to obtain the micro level data. Based on the performance and different income levels of farmers to evaluate the mortgage policy, this research tries to find the relationship between the different income level of farmers and their cognition differences and rural land mortgage loans' satisfaction differences, and then to further improve the quality of service of financial institutions from the satisfaction study, plus to provide theoretical support for the comprehensive promotion of the country after the end of 2017.

## 2. Methods

The purposes of this paper is to analyse the evaluation of the effect of the rural households on the mortgage loan of Land and the influencing factors, so we choose the ordered Probit model.

$$y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_i x_i + \varepsilon_i \quad (1)$$

In the questionnaire, according to the commonly used Likert scale, the results of the evaluation of the effect of the supply of loans to farmers are divided into five levels, namely, they are not very dissatisfied, dissatisfied, general, satisfied and very satisfied.

**Table 1.** Basic features statistics of farmers

contents	Indexes	Proportions	contents	Indexes	Proportions
Land management scale(acres)	Less than 5 acres	10.80%	Age	20~29	8.10%
	5~15acres	33.80%		30~39	25.70%
	16~25acres	20.80%		40~49	40.50%
	More than 26 acres	34.60%		50~59	20.80%
Management types	Pure agriculture	21.90%		More than 60	2.40%
	Agriculture mainly	35.90%	Man	88.10%	
	Non-agricultural	37.80%	Woman	11.90%	
	Non-agriculture	4.40%	Illiteracy	4.20%	
Mortgage housing area(m <sup>2</sup> )	50~100	9.80%	Education	Primary school	17.10%
	100~200	37.20%		Middle school	47%
	200~300	32.90%		High school	22.10%
	More than 300	20.10%		College and above	9.60%

**Table 2.** Variable description and statistical description

Variable names	Variable account	Variable definition	Mean	Standard deviation	Expected direction
Dependent variable	Evaluation of the effect of farmers(Y)	1=very dissatisfied,2=dissatisfied,3=general,4=satisfied,5=very satisfied	3.82	0.751	
Characteristics of the head in the family	Gender(X1)	0=woman,1=man	0.88	0.293	+
	Age(X2)	1=20~29 ,2=30~39,3=40~49,4=50~59,5=60 and above	2.74	0.904	+
	Education degree(X3)	1=Illiteracy,2=Primary school,3=Middle school,4=High school,5=Bachelor above	2.91	0.801	+
	Land management scale(X4)	1= Less than 5acres,2=5~15acres,3=16~25acres,4=More than 26acres	61	221.83	+
	Management types(X5)	1=Pure agriculture,2=Agriculture mainly 3=Non-agricultural,4=Non-agriculture	2.12	0.795	-
Characteristics of households	Mortgage housing area(X6)	1=50~100,2=100~200,3=200~300,4=More than 300	2.7	124.4	+
	Loan experience(X7)	0=No,1=Yes	0.17	0.167	+
	Village cadre experience(X8)	0=No,1=Yes	0.18	0.367	+
	Bank staff experience(X9)	0=No,1=Yes	0.11	0.301	+
Characteristics of financial institutions	convenient transportation(X10)	1=very inconvenient,2=inconvenient,3=general,4=convenient,5=very convenient	4.11	0.609	+
	Institutional reputation(X11)	1=very bad,2=bad,3=general,4=good,5=very good	4.21	0.634	+
	Business development degree(X12)	1=not very positive,2= not positive,3=general,4=positive,5=very positive	3.99	0.705	+
	attitude towards customers(X13)	1=very dissatisfied,2=dissatisfied,3=general,4=satisfied,5=very satisfied	4.07	0.623	+
	Interest rate(X14)	1=very high,2=Relatively high,3=general,4=Relatively low,5=very low	2.88	0.722	+
Mortgage business	Loan process(X15)	1=very dissatisfied,2=dissatisfied,3=general,4=satisfied,5=very satisfied	3.59	0.731	+
	Evaluation of assets(X16)	1=very dissatisfied,2=dissatisfied,3=general,4=satisfied,5=very satisfied	3.36	0.643	+
	Loan tracking(X17)	0=No,1=Yes	0.81	0.577	?
	Comparative advantage(X18)	0=No,1=Yes	0.89	0.303	+
Farmer's participation	The degree of loans meet the farmer's financial demands (X19)	1=completely can't meet,2=can't meet,3=general,4=meet,5=completely meet	3.96	0.814	+
	The help of funds to families(X20)	1=useless,2=help little,3=general,4=help partly,5=help a lot	4.22	0.746	+

### 3. Data sources and regression results

#### 3.1. Data sources

The data used in this paper are from 8 pilot areas: Luxian County, Meishan City, Chongzhou City in Sichuan province and Jinsha County, Meitan County in Guizhou province, plus Dali City, Qiubei County, Wuding County in Yunnan province in August, and January 2017. In the sample County,

stratified sampling method was used to select different villages and towns with different economic development level, and the farmers were selected by random sampling method, and 164 valid questionnaires were obtained. Since March 2015 the policy was implied, but the county have generally introduced the complete implementation of the program from mid-year 2016, so the various counties have completed housing mortgage loans is little. In statistics, according to the per capita net income of farmers' household, this paper divided it into three equal parts, low income, middle income and high income three income levels, analysing and evaluating different levels of family income of the farmers in the mortgage business policy. The basic characteristics of sample farmers can be seen in Table 1.

Previous studies have shown that there are many factors affecting the satisfaction of financial services. The definition of specific variables, statistical description and the expected direction of action are shown in Table 2.

## 4. Results

### 4.1. Regression results and analysis

Stata13.0 is used to make an ordered Probit regression analysis of the survey data (Table 3).

**Table 3.** Regression analysis of farmers' satisfaction with mortgage loan supply

Variable	All samples		Low income		Medium income		High income	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
X1	-0.2434	0.169	-0.2564	0.121	-0.3418	0.291	-0.2192	0.384
X2	-0.0614	0.233	-0.8334**	0.016	-0.0164	0.068	-0.0883	0.093
X3	0.2019*	0.073	0.0875	0.154	0.4145**	0.035	0.0679*	0.061
X4	0.0011	0.249	0.0021	0.187	-0.0003	0.993	-0.0001	0.527
X5	-0.1275	0.236	-0.6464	0.466	-0.709	0.605	0.0523	0.429
X6	0.0088**	0.024	0.0032*	0.077	0.0022**	0.039	0.0009***	0.009
X7	0.2435*	0.093	0.8864	0.103	0.267*	0.089	0.3318	0.27
X8	0.0037	0.507	0.0418	0.544	0.1364	0.635	0.2711	0.105
X9	-0.0017	0.68	0.0118	0.724	-0.1033	0.601	0.0833	0.522
X10	0.1033	0.132	-0.7769	0.17	0.1493	0.191	0.2170*	0.058
X11	0.1142*	0.097	0.1008	0.133	0.3277*	0.081	0.1209	0.149
X12	0.213	0.131	-0.1158	0.221	0.8189	0.148	0.0012	0.372
X13	0.3299*	0.064	0.1637	0.748	-0.0713	0.722	0.2184	0.228
X14	0.0799**	0.048	0.3422	0.134	0.0009*	0.088	0.1045**	0.041
X15	0.5778	0.169	0.2461*	0.089	0.2213	0.155	0.2152	0.196
X16	0.2892**	0.018	0.2231***	0.014	0.1903**	0.022	0.4166***	0.009
X17	-0.0703*	0.046	-0.0563*	0.074	-0.0498*	0.056	-0.0337	0.879
X18	-0.2363	0.268	0.0061	0.236	0.2893	0.556	0.6112**	0.054
X19	0.2990***	0.007	0.1408	0.304	0.3177**	0.058	0.6120***	0.001
X20	0.1553*	0.073	1.2636**	0.018	0.1948	0.171	0.2455**	0.049

Note: \*, \*\*, \*\*\* respectively indicate 10%, 5%, 1% significance level

From the results of Table 4, the important factors that affects farmers' satisfaction with mortgage loan are the overall situation of farmers, education degree, mortgage housing area, loan experience, institutional reputation, interest rate, evaluation of assets, and the degree of loans meet the farmer's financial demands and the help of funds to families. However, loan tracking is the reverse influence factors of farmers' satisfaction eluviation. From the perspective of income grouping, the same factors have different effects on the farmers with different income, and the significant factors are the mortgaged housing area and asset valuation. Secondly, from the overall perspective of farmers, the level of education, interest rate, the expected degree of satisfaction of assets, and the help of funds to family also

determine the level of satisfaction of farmers to a large extent. In this paper, we will describe some of the significant factors and the factors which are contrary to the expected results.

From the characteristics of the families and the households, education degree is significant at the 10% level. Farmers with higher education degree can access to policy information through the media and the internet, so they can get better understanding of the rural financial activities. Under such condition, the participation of the loan activities will be relatively small compared with the expectations of the farmers, and the satisfaction of the expectations and the actual perception will be relatively high. The reason why mortgage housing area and the satisfaction shows the positive relationship is that the more funds, the greater flexibility that can provide for farmers, to a greater extent to meet the needs of farmers in production and life. Loan experience has a significant positive relationship with the eluviation, because there is a loan experience of farmers will be more aware of the actual situation of loans, such as loan procedures, mortgage valuation.

From the characteristics of financial institutions and mortgage business, Institutional reputation and service are positively significant impact on satisfaction eluviation of the farmers, indicating that financial institutions should strive to establish a good social reputation and improve customers' experience. Interest rate and asset valuation have respectively 10% and 5% level significant effect, indicating the level of interest rates and asset valuations which are involved in farmers' financial activities are important factors in evaluation of financial services. The loan tracking on farmers' satisfaction plays a reverse significant role, and the lending bank will use the loan funds to farmers were tracked continuously, because one of the original intentions to carry out the financial services is to promote agricultural production and so on will pay special attention to agricultural production in the use of funds supervision. To some extent, the loan tracking limits the free use of farmers, which has a negative effect on satisfaction eluviation of the farmers. From the farmers' participation, the degree of loans meet the farmer's financial demands and the help of funds to families have significantly positive influence on farmers' satisfaction eluviation. The two factors in a certain extent can be used as one of the satisfaction of performances, so they are also relevant in the prediction range.

## 5. Political suggestions

Based on the results obtained in this paper, we can draw the following political recommendations combined with the actual situation of each county:

Firstly, we should increase the publicity of rural land mortgage loan business, and further expand the scope and mode of collateral security, expand its awareness and policy superiority. Encourage more farmers to understand the lending policies and processes in order to enhance their willingness to participate. Around the butt of the people's bank or commercial bank can form a policy advocacy for grassroots advocacy groups and have official authority to expand their influence.

Secondly, The relevant financial institutions that carry out rural land mortgage loans should be combined with local realities, to establish a standardized rural property value evaluation mechanism, such as the establishment of assessment of the company or the establishment of a reasonable mechanism of multi assessment team, and then improve the farmers loan business processes and the business process standardization, promote management efficiency, thereby reducing transaction costs.

Thirdly, financial institutions should be divided into different types of loans and the use of loans and interest rates. The demand of farmers with different income has a certain difference in reality, so we should improve the interest rate pricing mechanism, so as to meet the diversified needs of farmers, expand the benefits of farmers, improve the existing Land mortgage products.

Lastly, the establishment of market farmers housing transactions norms can solve the present problems of the disposal and liquidation of housing mortgages in rural areas. At the same time, relax market access mechanism and explore the non-members of the collective economic organizations of paid use of land system to increase the activity of this emerging market.

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