

# **Study on the Willingness of Farmers to Mortgage Loan of Land Contract Management Right and Its Influencing Factors in Wj District**

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**Abstract:** Based on the on-the-Spot Investigation of Farmers' Willingness to Mortgage the Right of Contracted Management of Land in Wj District, and Using the Logistic Model, This Paper Concludes That the Type of Operation, the Source of Income and the Satisfaction with the Loan Term of Farmers Have a Significant Positive Impact on Their Willingness to Mortgage the Right of Contracted Management of Rural Land. Finally, According to the Analysis Results, the Paper Puts Forward Some Policy Suggestions, Such as Industrial Transformation, Improving the Risk Mechanism and Broadening the Use of Funds.

## **1. Introduction**

As of December 2018, the Land Scale Transfer Rate of Wj Has Reached 66.8%, and a Total of 1.23 Billion and 378 Million Mortgage Loans Have Been Issued. At Present, the Flower and Wood Market in Wj District is Oversupplied, the Industry is in the Transition Stage, and the Financing Willingness of Farmers Has Declined. as a Pilot Project of Land Contractual Management Right Mortgage Loan, It is Necessary to Understand the Needs of Farmers and Steadily Promote the Smooth Development of Rural Land Contractual Management Right Mortgage Loan by Analyzing the Influencing Factors of Wj Farmers' Willingness to Participate.

## **2. A Description of the Present Situation of Farmers' Willingness to Mortgage the Right of Contracted Management of Land in Wj District**

### **2.1 Data Sources**

The data of this study comes from the household survey conducted in 8 randomly selected villages in Hesheng Town, Shouan town and Wanchun Town, WJ District, Chengdu City, Sichuan Province in August 2018. 107 questionnaires were sent out and 105 were recovered, with a recovery rate of 98%. After eliminating invalid and incomplete questionnaires, 101 effective questionnaires were obtained, with an effective rate of 96.19%.

### **2.2 Descriptive Statistical Analysis of Samples**

Among the 101 survey data, 63% of the farmers have the willingness to loan, which is more than half of the survey data, indicating that more farmers are willing to participate in the mortgage loan of land contractual management right. The respondents are 82% male and 18% female, 55% aged 30-49, 38% aged 50 and above, 51% educated senior high school and above, 49% under senior high school, 80% of 2-5 family members, 52% income from Central African agriculture, 18% from agriculture and non agriculture, 18% from 1-10 mu, 29% from 11-20 mu, 53% from 20 mu, 28% from retail investors, 26% from large investors, 44% from professional cooperatives, and 2% from leading enterprises, indicating WJ flower The large-scale degree of wood industry is relatively high; the land inflow is 62%; 56% of the capital uses are agriculture, and 23% are agriculture.

### 3. An Empirical Analysis on the Willingness and Influencing Factors of the Mortgage Loan of the Contracted Land Management Right of Farmers in Wj District

#### 3.1 Model Selection

According to the survey data, the explained variables of farmers' mortgage intention are ordered multi variables and only two values of 0 and 1, so the explained variables are highly discrete random variables. In the binary discrete random variables, this paper chooses the logistic model to analyze the factors that affect farmers' mortgage intention.

The explained variable is represented by Y,  $y = 1$  for mortgage intention,  $y = 0$  for no mortgage intention.  $X_i$  is used to represent each influencing factor.

$$Y = f(X_1, X_2, X_3, X_4 \dots X_n) + u$$

In the above formula, Y represents the mortgage willingness of farmers' land contractual management right,  $X=(X_1, X_2, X_3 \dots X_n)$  is a variety of influencing factors that affect farmers' willingness to participate, u is a random error term. If the probability of farmers willing to mortgage is  $P(y,1|X_i)=P$ , the probability of not willing to mortgage is  $1-P$ , then P is transformed into logistic, which is recorded as  $\text{logit}(P)$ , as a dependent variable. The complete model is as follows:

$$\text{Ln}\left(\frac{P}{1-P}\right) = \text{logit}(P) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n$$

In upper middle,  $\beta_0$  is a constant term, the natural logarithm value of the ratio of probability that farmers are willing to mortgage and unwilling to mortgage when all independent variables are 0, no direct relationship with  $X_i$ .  $\beta_i$  is partial regression coefficient, representing the contribution of  $X_i$  to p.

That is, when other independent variables are fixed, the  $\text{logit}(P)$  change size caused by each unit of change of  $X_i$ .

#### 3.2 Index Selection

Table 1 Variable Selection And Assignment

Variable name	Variable definition	mean value	Expected impact
LW Y	1=yes;0=no		
Gender X1	0=female;1=male	0.82	+
Age X2	1=Under 30;2=30-49;3=50 and above	2.31	-
EB X3	1= illiteracy;2= Primary school;3= Junior middle school;4= senior middle school;5= Junior College;6= Bachelor or above	3.62	+
FP X4	0=1-2 person;1=2-5 person;2=5or more person	1.22	+
TBE X5	1= individual;2= Large household;3=Professional cooperative;4= Leading enterprises	2.21	+
IS X6	1= Non agriculture;2= Agriculture and Non;3= Agriculture	2.21	+
LS X7	1=1-10mu;2=11-20mu;3=20 mu and above	2.34	+
LIA X8	1= No land transfer 2= Land transfer	1.61	+
LFU X9	1= Non agriculture;2= Non agricultural oriented;3= Agriculture as the main force;4= Agriculture;	0.63	+/-
LIRS X10	1= Dissatisfied;2= less dissatisfied;3=less satisfied;4= satisfied	2.20	+
LTS X11	1= Dissatisfied;2= less dissatisfied3= less satisfied;4= satisfied	2.31	+

Notes:Loan Willingness(LW), Gender, Age, Education Background(EB), Family Population(FP), Type of Business Entity(TBE), Income Source(IS), Land Scale(LS), Land Inflow Area(LIA), Loan Fund Use(LFU), Loan Interest Rate Satisfaction(LIRS), Loan Term Satisfaction(LTS).

The regression results of the model are as follows:

Table 2 Hosmer lemeshow test

step	X <sup>2</sup>	Df	Sig
1	6.809	8	.557

It can be seen from the table that the significance is  $0.557 > 0.05$ , indicating that the variable has a significant impact on the level of 5%.

According to the misjudgment matrix given by SPSS 14.0 (the correct rate of the predicted value when all independent variables are taken as 0 is omitted here), 27 out of 37 farmers who are not willing to make mortgage loan are correctly predicted, with the correct rate of 73%; 55 out of 64 farmers who are willing to make mortgage loan of land contractual management right are correctly predicted, with the correct rate of 85.9%. The comprehensive accuracy is 81.2%, which is more than 60%, indicating that the model has high fitting degree.

Table 3 Model Regression Results

	B	S.E	Wald	Df	Sig	Exp(B)	Exp(B) 95% confidence interval
Gender X1	-.049	.864	.003	1	.955	.952	.175-5.184
Age X2	-.925	.542	2.910	1	.088	.397	.137-1.148
EB X3	-.158	.266	.353	1	.552	.854	.507-1.438
FP X4	-.367	.684	.288	1	.591	.692	.181-2.648
TBE X5	1.450	.463	9.809	1	.002	4.262	1.720-10.559
IS X6	1.596	.503	10.075	1	.002	4.932	1.841-13.211
Land scale X7	.285	.509	.314	1	.575	1.330	.491-3.605
LIA X8	-.915	.848	1.166	1	.280	.400	.076-2.109
LFU X9	.230	.334	.475	1	.491	1.259	.654-2.423
LIRS X10	-.308	.402	.587	1	.443	.735	.334-1.615
LTS X11	.979	.407	5.797	1	.016	2.663	1.200-5.910
Constant	-3.943	2.316	2.899	1	.089	.019	

From the above table, it can be seen that the sig value of business entity type, income source and farmers' satisfaction with the loan term is less than 0.05, indicating that these three variables are significant at the level of 5%, which has a significant impact on Farmers' willingness. Other variables had no significant effect on willingness.

(1) the type X5 of operation subject is a positive impact, which means that the larger the scale of land operation of major professional households, cooperatives and leading enterprises is, the more means of production they put in, the more complete industrial chain they can achieve, and thus have a greater willingness to mortgage the contracted management right of agricultural land.

(2) the source of income X6 is a positive impact, which is mainly due to the fact that farmers with agricultural source of income need financing for material procurement, so they have a strong willingness to mortgage; non-agricultural source of income is mainly from migrant workers and individual businesses, with relatively stable income, without bearing the risk of crop operation, so the farmers' mortgage willingness is not strong.

(3) the loan term satisfaction X11 is a positive impact, which is consistent with the predicted value. The satisfaction here is mainly about the length of the loan term. According to the actual investigation, the longer the term is, the higher the satisfaction is. The main reasons for the highly positive correlation between term and willingness are as follows: first, because the mortgage loan of land contractual management right is currently in the trial stage, the loan term is relatively short, mostly 1-2 years, while the one-year loan has become the actual loan term of only 8-10 months due to the tedious application and handling procedures, and the farmers in this term have not reaped enough income to repay Loan, so the pressure is huge, the mortgage will not be strong. Second, due to the low evaluation of the right of contracted management of land and its attachments on the ground, the amount of loans that farmers can get is too small to effectively alleviate the financial needs of farmers. At the same time, the ability of farmers to resist market risks and operational risks is declining, which may lead to poor management.

#### 4. Policy Suggestion

First, promote industrial transformation of WJ district. The government and enterprises promote the whole industrial transformation of WJ District, deepen the structural reform of agricultural supply side, innovate the rural governance system, improve the relevant infrastructure, such as the industrial support policy, the construction of entrepreneurship Park, the construction of catering, tea and other entertainment facilities, create a new industry chain, attract capital inflow in the city, form a new consumer demand, and thus increase output. At the same time, large-scale flower and wood cooperatives or leading enterprises should extend their own industrial chain, one, two and three industries go hand in hand, continue to improve the organizational and management structure, give full play to the advantages of scale economy, improve production efficiency, reduce the proportion of market risk of flowers and trees in the whole business risk, and thus reduce their own risk.

Second, expand the use of loan funds. With the proposal of Rural Revitalization Strategy, WJ district has derived many new rural industries, such as rural complex and other operation modes. At this time, the government and banks should relax the restrictions on the use of loans to ease the problem of farmers' loans. At the same time, financial institutions should provide more financial products related to the mortgage of land contractual management rights, such as commercial paper + property rights, so as to reasonably transfer their own risks and make it easier for farmers to obtain loans.

Third, we will continue to improve the mechanism for resolving risks. It is necessary to establish a multi-party incentive and cooperation mechanism to form a compound mortgage guarantee mechanism; at the same time, it is necessary to establish a risk compensation mechanism in the process of the transfer of rural land contractual management rights, integrate the existing city and county level rural property rights financing risk funds in Chengdu, and inject them into the rural property rights collection and storage companies. In addition, it should be noted that although the government and financial institutions have great support for the mortgage loan of the contracted land management right, they should properly handle the relationship between the government and the market, otherwise, they will form some communities of interests that are not conducive to the society and make the allocation of resources more unfair.

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