

# Mortgage Behavior Analysis of Family Farm Land Management Right Based on SEM Model

Chun Yang\*, Yarong Shao, Jie Zhou, Yu Wang, Linben Wang, Pingyuan Du

*School of management, Sichuan Agricultural University, Sichuan, Chengdu 610000, China*

*\*Corresponding author. Email: 609221068@qq.com*

## ABSTRACT

The proper scale management of family farm has a strong demand for funds, but the lack of collateral makes financing very difficult. The development of mortgage loan of land management right provides a new financing channel for the business subjects. In this paper, Chongzhou City in Sichuan Province, which has long-term pilot experience, was selected as the empirical research area. The multiple regression model and the structural equation model were adopted, and the mortgage intention and influencing factors of family farm land management rights were explored. This study is of great significance to promote the good and orderly development of the mortgage practice of land management rights in China.

**Keywords:** *family farm, land management right, mortgage intention, influencing factors, Chongzhou City*

## 1. INTRODUCTION

In recent years, many documents, such as the first document of the central government, reflect our country's emphasis on the development of new agricultural operators from different aspects. As an important part of the main body of new agricultural management, the reason why family farm can develop stably and large-scale operation is sufficient operating funds. However, the lack of collateral makes it difficult for them to obtain financing. The development of modern agriculture needs sufficient financial support.[1] The collateral is relatively scarce in the agricultural production and management activities, the imbalance between the supply and demand of production and development funds of the main body of agricultural management needs to be solved. The land is scarce and the function is permanent, so the mortgage of the land management right is easier to be recognized by the financial institutions, which ensures the enthusiasm of the financial institutions. The mortgage loan of land management right is regarded as a kind of rural financial product, it must be able to solve the demand of all kinds of agricultural management subjects for production and operation funds to a certain extent, and it is the general trend to carry out the mortgage loan of agricultural management right. [2]

In this paper, Chongzhou City in Sichuan Province, is selected as the research area. In 2010, Chengdu's first mortgage on land management rights was issued in Chongzhou, which has a long history as a pilot city. Chongzhou City is taken as a breakthrough point to explore the influencing factors of mortgage financing intention of family farm land management rights.

## 2. DATA ANALYSIS

### 2.1. Selection of Influencing Factors

#### 2.1.1. The main characteristics of family farm

In the paper, eleven variables of the main characteristics of family farms were selected on the basis of consultation and summary: gender, age, educational level, operating area, years of life, scale development, income level, risk tolerance, lending experience, fixed assets, The familiarity of the loan officer.

Based on the above, this paper puts forward the assumption I : the main characteristics of family farm have a great impact on the mortgage intention of land management rights.

#### 2.1.2. Planning behavior of family farms owner

The behavioral attitude of the owner of the family farm, the behavioral attitude of the owner of the family farm can be understood by the evaluation of the family farmer on the mortgage of land management right. This paper puts forward the assumption II :

The more positive the evaluation of the mortgage of land management right is, the stronger the intention of mortgage of land management right will be.

The subjective norm of the family farm owner, the subjective norm of the family farm owner is that the family farmer feels the influence of the important individual or group on his decision-making when carrying out the mortgage loan of the land management right. Based on the above analysis, this paper puts forward

assumption III: The more positive the subjective norms of family farm owners, the stronger their intention to deal with the mortgage of land management rights.[3] The perceptual behavior control of the family farm owner, the perceptual behavior control of the family farm owner, (PBC) refers to the perception of the difficulty of the family farm owner to carry out the mortgage of the land management right.[4] This paper puts forward assumption IV. The stronger the perceptual behavior control of the financing method of land management right mortgage, the stronger the intention of family farmers to deal with land management right mortgage loan.

**2.2. Data Source and Descriptive Analysis**

In 2010, the first mortgage in Chengdu on land management rights was issued in Chongzhou, and the data for this study came from questionnaires in Chongzhou in April 2017 and July 2017.[5] In total, 124 questionnaires were sent out and 121 questionnaires were recovered for family farms, 117 of which were valid, and the effective rate was 96.69%. Considering that banks are also important participants in mortgage loans for land management rights, a questionnaire survey was also conducted among banking practitioners engaged in this business. A total of 57 questionnaires were sent out, 52 questionnaires were recovered and 48 valid questionnaires were collected. The effective rate was 92.31%.

**3. THE EMPIRICAL ANALYSIS**

**3.1. Model Construction**

The behavior intention of family farm is affected by three latent variables. The structural equation model is applicable according to the assumptions studied in this paper. Secondly, intention, behavior and other variables can not be directly measured, and there are inevitably errors in the measurement process.

The models of structural equations include measurement model and structural model.

The formula for the measurement model is

$$X = \Lambda_x \xi + \delta \tag{1}$$

$$Y = \Lambda_y \eta + \epsilon \tag{2}$$

- X—Exogenous observable variables。
- Y—Endogenous observable variables。
- ξ—Exogenous latent variables。
- η—Endogenous latent variables。
- Λ<sub>x</sub>—factor loading matrix between x and ξ
- Λ<sub>y</sub>—factor loading matrix between y and η
- δ—Measurement error of X
- ε—Measurement error of Y

The formula of the structural model is

$$\eta = \beta \eta + \Gamma \xi + \theta \tag{3}$$

where η is endogenous latent variables, ξ is exogenous latent variables, η connects endogenous latent variable and exogenous latent variable through β, Γ coefficient matrix and error vector θ.

According to the assumptions and the revised measurement variables of credibility and validity test, AMOS23.0 is applied to establish the intention model of family farm land management right mortgage.

**3.2. Running of the Model**

AMOS23.0 software is used to analyze the structural equation model of the theoretical model. [6]In this paper, the χ<sup>2</sup> / DF value of the model is 1.144, which is an acceptable range. The GGI value is 0.906, which is more than 0.9, and it is acceptable. The absolute fit index RMSEA is also within the acceptable range. The path coefficients obtained by AMOS23.0 software are shown in Table 26 below, and the standardization coefficients of the 16 observed variables are all greater than 0.60, From the path analysis results of the modified model, the influence path coefficients of behavior intention 1~3 and "behavior intention s" are 0.772, 0.721 and 0.772, respectively. All the P values were less than 0.01, reaching a significant level;The influence path coefficients of behavioral attitude 1~3 and "behavioral attitude s" were 0.705, 0.896 and 0.787, respectively, and all the P values were less than 0.01, reaching a significant level; The influence path coefficients of subjective norm 1~5 and "subjective norm s" are 0.848, 0.818, 0.667, 0.791, 0.755, respectively, and all the P values were less than 0.01, reaching a significant level; The influence path coefficients of perceptual behavior control 1~5 and "perceptual behavior control s" were 0.827, 0.732, 0.839, 0.779, 0.826, respectively, and all the P values were less than 0.01.

**3.3. Analysis of Model Results**

(1)Among the many influencing factors of mortgage intention of family farm land management right, behavior attitude has the least influence on intention. And the path coefficient of each observable variable is above 0.60, among which the land management right mortgage loan can solve the problem that the loan does not have the mortgage asset when they want to apply the mortgage, the path coefficient is the largest, which is 0.896. This shows that it not only has a significant effect on latent variables, but also has a greater impact on the mortgage intention of family farm land management rights than other factors.

(2)From the perspective of subjective norms, the influence path coefficient of the subjective norms of family farm owners and the mortgage behavior intention of land management rights is 0.324. Among the observed variables of subjective norms, the highest path coefficient is "subjective norm 1": the banks have a positive attitude towards the mortgage of land management rights, which is 0.848. This shows that the impact of the above factors on

the intention of land management mortgage loans is greater than the support of family and friends for land management mortgage loans, as well as peer evaluation. From the point of view of perceptual behavior control, the influence path coefficient of perceptual behavior control of family farm owners and mortgage behavior intention of land management right is 0.391. The highest path coefficient is "perceptual behavior control 3": the mortgage interest rate of land management right is preferential, which is 0.839. The path coefficients of the other observed variables are above 0.60, which explain the latent variables. Perceptual behavior control has a positive and obvious impact on the mortgage intention of land management rights.

## **4. POLICY SUGGESTION**

### ***4.1. Perfecting the Construction of Farmland Circulation Market***

On the one hand, local governments should play a guiding role, fairly and efficiently deal with relevant affairs related to the transfer of agricultural land, and at the same time, establish a rural property right value evaluation system. [7] On the other hand, the government should establish a transparent, accurate and timely information platform, so as to make it easier for financial institutions to realize the transfer of land management rights mortgaged by various subjects in default.

### ***4.2. Improving the Service Level of Rural Finance***

The comprehensive service platform of rural finance with "database + network" as the core should be established to play the role of "serving the government, assisting banks and benefiting agriculture, countryside and farmers". The creation of new financial products, different combinations of financial products are provided for different situations of family farms. If the production cycle affects the borrowing needs of family farms, these obvious periodicities should also be taken into account in setting repayment periods.

### ***4.3. Establishment of Risk Prevention and Control System***

Risk-sharing mechanisms should be established, risk funds and continuous replenishment mechanisms need to be designed, the risk borne by banks alone should be reduced, and the trinity of "government collection and storage + enterprise collection and storage + new management subject collection and storage" should be explored and established. Enhancing the confidence of banks to carry

out the business has been enhanced through the risk-sharing role of agricultural insurance.[8]

### ***4.4. The Propaganda of Mortgage Loan of Land Management Right Should Be Strengthened***

Family farmers' understanding of financial knowledge and land management mortgages needs to be enhanced in a variety of ways; credit officers should actively visit and convey the latest information to the main body of the business.[9] Financial institutions should help the main body to understand the mortgage of land management rights, enhance the perceptual behavior control of family farmers, and let them have a positive attitude as much as possible.

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