

Article

How Social Networks Affect Farmers' Willingness to Withdraw from Homesteads: Evidence from Jiangsu Province, China

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Abstract: The orderly withdrawal from rural homesteads is an important path for the smooth promotion of rural revitalization and new urbanization. This study aims to explore the influence and mechanism of social networks on the willingness of farm households to withdraw from homesteads. The study is based on a sample of 1971 farmer households in Jiangsu Province and analyzes the data using the logit model and mediation effect model. The results show that the social network has a significant positive effect on farmers' willingness to withdraw from homesteads. As the social network expands, the probability for forming the willingness to withdraw from the homestead is higher for farmers with weaker social networks. In addition, the effect of social networks is different according to the level of regional economic development. The mechanism analysis suggests that social networks can indirectly increase the willingness to withdraw from homesteads by improving farmers' risk resilience. Based on these findings, this study puts forward targeted policy recommendations: focusing on the cultivation and enhancement of farmers' social networks, strengthening farmers' risk resilience, and designing differentiated homestead exit policies.

Keywords: homestead; willingness to withdraw; social network; mediating effect; countermeasure suggestion



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1. Introduction

Since the 18th CPC National Congress, China's economic development has entered a new normal, and the comprehensive promotion of the rural revitalization strategy and the solid implementation of new urbanization construction have profoundly changed the rural landscape, with a large number of rural laborers moving to towns and cities. According to the 2022 Rural Labor Monitoring Survey Report, the number of urban migrant workers living in towns at the end of 2022 reached 132.56 million. Accompanying the rural population outflow is the problem of the inefficient use and idle abandonment of residential land, which is becoming more and more prominent [1]. The Ministry of Agriculture and Rural Affairs' sample survey data indicate that in 2019, the national idle rate for homestead bases was 18.1%, with a higher than 20% idle rate seen in 27.6% of the villages [2]. The contradiction between the supply and demand of urban construction land is prominent [3], while rural construction land is increasing rather than decreasing [4]. Easing the tension of the urban construction land and improving the utilization efficiency of the rural residential land have become urgent problems in today's society. For this reason, the state has issued relevant documents to actively guide farmers to withdraw from homesteads. In 2015, the "opinions on rural land expropriation, collective operation of construction land into the market, and pilot work of homestead system reform" proposed to explore the voluntary and compensated withdrawal of the residential bases of farmers who have settled in the city within the collective economic organization. In 2018, the central No. 1 document, for the first time, was put forward to explore the separation of the three rights to homesteads; the same year, *Rural Revitalization Strategic Planning*

(2018–2022) was put forward to improve the policy of farmers' idle residential bases and idle farm buildings, and the residential base system reform exploration entered a new stage [5]. Since then, every year's central No. 1 document has also focused on the issue of homestead withdrawal. However, the enthusiasm of farm households to withdraw from homesteads is still low [6]. The withdrawal of homestead bases is not only conducive to arable land protection and food security but also improves the intensive use efficiency of rural land resources, optimizes the layout of urban and rural construction, and accelerates the pace of new urbanization. Guiding farmers to voluntarily withdraw from homesteads with compensation is an important part of the current reform of the homestead system and the strategy of "rural revitalization" [7]. Farmers as the main body of homestead withdrawal, exploring the factors affecting the willingness of farmers to withdraw from the homestead and improving the willingness of farmers to withdraw from the homestead for the optimization of the homestead withdrawal policy have greater practical value and practical significance.

Western countries generally practice private land ownership, and there is no such term as "rural homestead". Similar studies on land property rights [8], the usage situation of rural residential land [9], factors affecting the use of rural residential land [10], residential land remediation [11], and the lease and transfer of rural residential land [12,13] are worth studying for reference. Rural homesteading is a concept with Chinese characteristics. Scholars have paid attention to the factors affecting the willingness to withdraw from the homestead. The most common methods used by scholars are the logit model [14], probit model [15], mediation effect model [16], and moderating effect model [17]. The research mainly focuses on individual and household characteristics. Farmers are the main body in the process for withdrawing from homesteads, and the individual objective conditions of farmers, such as their personal characteristics and family characteristics, cannot be ignored. Liang argues that with the increase in the number of years of education received by the head of the household, the higher the level of personal cognition and working ability, the more opportunities to obtain a job or start a business, and the greater the chances for prompting the withdrawal from the rural residential land. At the same time, the higher the annual household income, the stronger the ability to earn money, the more they tend to pursue a high-quality urban life, and the stronger their desire to withdraw from the homestead [18]. In terms of institutions and policies, Zhu found that the reform of the household registration system has a significant impact on the willingness of farmers to withdraw from homesteads [19], and the role of social security cannot be ignored [20]. Increasing the reform of the household registration system and coordinating the household registration system with the social security system can help reduce the negative impact of the urban–rural dual system on the advancement of the urbanization process and the efficiency of the reform of the rural land system. In addition, Wang et al. point out that exit compensation policy is also an important influencing factor [21]. In terms of social characteristics, Zhou et al. and Xu et al. analyze the willingness to withdraw from homesteads from the perspective of farm household differentiation and the perspective of generational differences, respectively [22,23]. The study by Yang et al., on the other hand, included farm household differentiation and generational differences in the same analytical framework and found that generational differences had a moderating effect on the mediating role played by the perception of the value of the homestead base between farm household differentiation and the willingness to withdraw from the homestead base [24]. This highlights the diversity and complexity of the factors influencing the willingness to withdraw from the homestead.

In fact, rural society is a "society of acquaintances" [25], with a wide distribution of various social networks, and the fact that farmers are in a "society of acquaintances" is a realistic basis for the formation of the willingness to withdraw from homesteads or the behavior of homesteads. Some scholars have studied the impact of social networks on farmers' homestead withdrawal behavior, and their studies have shown that social networks have a significant positive impact on farmers' homestead withdrawal behav-

ior [26–28]. However, few studies have focused on the relationship between social networks and farmers' willingness to withdraw from homesteads, and the existing studies have reached very different conclusions, with Yuan et al. finding that social networks have a significant negative effect on farmers' willingness to withdraw from homesteads [29] and Feng et al. finding a positive one [30]. Combined with the current state of the research, this study asks the first question: do social networks affect farmers' willingness to withdraw from homesteads? If so, is the effect positive or negative?

1.1. Theoretical Analysis and Research Hypothesis

1.1.1. The Effect of Social Networks on Farmers' Willingness to Withdraw from Homesteads

Social networks, along with social rules and trust, are considered to belong to the category of social capital [31], which is a social attribute of an individual that can be transformed into economic gain or status enhancement through certain purposive actions [32]. Specifically, a social network refers to the network of relationships, such as relatives, friends, colleagues, or neighbors, that an individual or family possesses [33]. Social networks focus attention to the interactions between individual members of a society and then affect the social behaviors and choices of individual members of the society [34]. In other words, the endogenous interaction of the social network affects the formation of the willingness of farmers to leave residential areas, which is manifested as the "demonstration effect". Neighbors, friends, and relatives are the main constituents of the social network of farmers, and their opinions are of great reference value to farmers [35]. More importantly, their behavior will have some exemplary demonstrative impact on farmers and play a leading role. That is, when all the surrounding groups adopt certain behaviors, individuals are prone to conform to avoid appearing out of place in the group to which they belong and not finding a sense of belonging to the group or to obtain personal satisfaction [36]. The empirical research has found that the approval opinions of family members, as well as friends and relatives, and the approval opinions of those who have succeeded in exiting the homestead significantly influence farmers' withdrawal from the homestead [4]. In addition, social networks can broaden farmers' access to information, reduce the cost for searching for information [37], increase farmers' understanding of homestead-related information, enhance farmers' perceptions of the value of the homestead, and at the same time, help to build a communication mechanism of the benign interaction of members within the social network [38] and improve farmers' understanding of and trust in homestead withdrawal policy; consequently, farmers' inclination to leave the homestead is positively impacted. The analysis presented above leads to the following hypothesis being put forth:

H1. *The social network has a positive influence on farmers' willingness to withdraw from the homestead.*

The above has theoretically answered the first question: do social networks affect farmers' willingness to withdraw from homesteads? Now, the second question is posed: If so, what are the underlying mechanisms?

1.1.2. The Mediating Role of Risk Resilience

Farm households face a variety of risks in production and life, such as natural disasters (hailstorms, windstorms, etc.), health problems (disability, aging, etc.), economic activities (economic downturns, production accidents, etc.), and social risks (crime, violence, etc.) [39]. Farmers' risk resilience refers to their ability to cope with these risks, which significantly influences the desire to leave the homestead [40], and the two are usually positively correlated. Farmers' risk resilience includes two aspects: family economic resources and family social support [41]. Household economic resources are the asset-capital position of the farm household that can be used by the farm family to cope with the risk of homestead exit. There is not yet a unified standard in the academic community on how to measure household economic resources, but household income status is a classic indicator commonly used by scholars [42]. It can be said that farmers' risk resilience increases with their income.

Family social support refers to the social resources that can provide help and risk sharing when farmers face the risk of homestead withdrawal, such as interest-free loans from relatives and friends, loans from banks and other financial institutions, and insurance. Among them, interest-free loans from friends and relatives are often the first choice of farm households to eliminate risks [43]. Therefore, the risk resilience of farm households is mainly reflected in two aspects: household income and interest-free lending from friends and relatives. It has been shown that social networks, as a form of social capital, have a positive impact on farm households' income [44], the availability and amount of interest-free loans that farmers receive from friends and relatives [45]. Social networks help to improve farmers' risk resilience. Based on the above analysis, the following hypothesis is proposed:

H2. *Risk resistance has a mediating role in the impact of social networks on farmers' readiness to leave their homesteads.*

The above theoretically answers the second question: If so, what are the intrinsic mechanisms?

Based on the survey data of 1971 farm households in Jiangsu Province from the China Land Economic Survey (CLES) database, this study further answers two questions: (1) Do social networks affect farmers' willingness to withdraw from homesteads? (2) If so, what are the intrinsic mechanisms? The marginal contributions of this paper are: first, to investigate farmers' desire to leave their homesteads from a social network perspective, which theoretically enhances the research's analysis of the variables that influence farmers' willingness to leave their homesteads; second, to use the data of the China Land Economic Survey in 2020, which has obvious advantages in the aspects of scientific data and rigor and provides strong data support for the study.

2. Research Methods and Data Materials

2.1. Study Area

This study takes Jiangsu Province as the empirical research area (Figure 1). Jiangsu Province, located in the Yangtze River Delta region, is the most dynamic frontier region of China's economic development and is also one of the provinces with the largest number of state-level rural reform pilot zones and the largest number of rural reform pilot tasks, which provide a better research foundation and support conditions. At present, more than 20% of the districts and counties in Jiangsu Province have introduced regulations on compensation for the withdrawal from homesteads and policies on the revitalization and utilization of idle homesteads, and significant results have been achieved. However, according to survey data from the Rural Residential Base Group of the Jiangsu Provincial Department of Agriculture and Rural Affairs, there are a total of 5,015,800 mu of residential base in Jiangsu Province, accounting for more than 40 percent of the area of the rural collective construction land. Among them, about 20% of the farmhouses are in an idle or abandoned state, 10% are perennially empty houses, and the idle rate of a few villages is more than 40% [46]. Problems such as idle homesteads need to be solved urgently, and Jiangsu Province is still maintaining the long-term output of homestead reform policies. Therefore, it is of strong practical significance for this paper to select Jiangsu Province as the study area. In addition, the developmental differences among Jiangsu Province's Southern, Central, and Northern Jiangsu regions are obvious, and to a certain extent, they are similar to the economic differences among China's eastern, central, and western regions, which is of great significance for homestead reform at the national level.

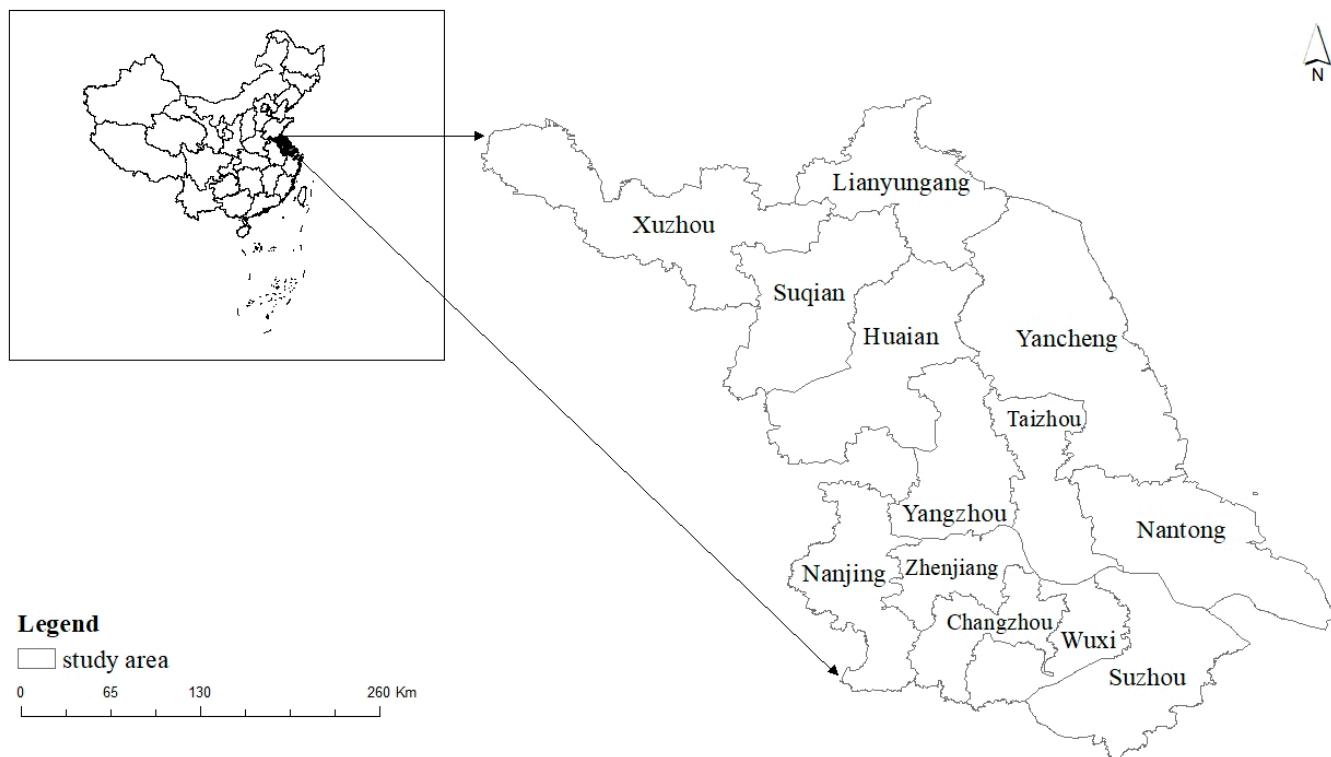


Figure 1. Study Area.

2.2. Data Source

This study evaluates the effect of social networks on farmers' inclination to leave their homesteads based on data from CLES2020. CLES was founded by the Division of Humanities and Social Sciences at Nanjing Agricultural University, with the assistance of the Jinshanbao Institute of Agricultural Modernization and Development to implement the survey, which started in Jiangsu and will gradually expand to the Yangtze River Delta region and even the whole country. The survey covers the land market, agricultural production, rural industry, etc., and the exit situation of the homestead includes relevant information, such as whether the farmers have the will to exit the homestead, which provides data support for this paper. The research team used the PPS survey sampling method to select 26 districts and counties among 13 prefecture-level cities in Jiangsu Province, randomly select 2 townships in each district and county, randomly select 1 administrative village in each township, and randomly select 50 farm households in each administrative village to finally obtain a total of 2628 samples of farm households. Considering that the purpose of this study is to examine how social networks affect farmers' intentions to leave their homesteads, data involving farmers' readiness to leave their farms, social networks, mediator variables, and control variables' features that were missing or abnormal were excluded, and the final sample was determined to be the 1971 farm household families surveyed in CLES2020.

2.3. Variable Declarations

2.3.1. Explained Variable

The explained variable is the willingness of farmers to withdraw from homesteads. The question in the questionnaire "Do you have the willingness to withdraw from the homestead?" was used as an indicator of the explained variable. A value of 1 indicates that farmers have the will to withdraw from the homestead, and 0 indicates that farmers do not have the will to withdraw from the homestead.

2.3.2. Core Explanatory Variable

The social network is the core explanatory variable. The question in the questionnaire “What is the number of people who can lend you 50,000 yuan when you are in trouble?” was used as an indicator of the social network, and a reference was made to existing studies [47] to assign values to this variable.

2.3.3. Mediating Variable

The risk resilience is the mediating variable. The question in the questionnaire “What is your attitude toward income growth in the next 1–2 years?” was used as an indicator of the mediating variable. The reason for this is that the data used in the article were collected in 2020. In 2020, the COVID-19 pandemic swept the world. The vast majority of the households have seen their incomes significantly affected. Against the backdrop of an economy that has not fully recovered, farmers will choose to cut back on expenditures to cope with the pressure of falling incomes. In addition, raising property income through financial investments has become an important supplement to the income of farm households. In general, the higher the expected income from investing, the higher the risk you need to take tends to be. Following the assumption of the rational man, farmers are bound to make relevant investment decisions only after considering their risk resilience. Thus, the more optimistic a farmer’s attitude is toward expected income growth, the more risk resilient the farmer is. The questionnaire set five options for the attitude toward future income growth: very pessimistic, more pessimistic, neutral, more optimistic, and very optimistic. Thus, the five options of the questionnaire correspond to weak, weaker, ordinary, stronger, and strong risk resilience. Weak implies nearly incapacitated, weaker implies relatively incapacitated, stronger implies relatively capable, and strong implies nearly fully capable.

2.3.4. Control Variables

Based on existing related studies, control variables are set in five aspects, namely, household head characteristics, family characteristics, the house property characteristic, property rights cognition, and regional characteristics, to reduce the estimation bias of the econometric model. Among them, the age and gender of the householder are among its characteristics; the characteristics of the household include the Engel’s coefficient of the household and the total income of the household; the characteristic of the house property is the number of homesteads; and the perceptions of property rights include the perception of the ownership of homesteads, the perception of the right to mortgage, and the perception of the right to inherit. At the same time, given the differences in resource endowment between different regions, which will also potentially influence farmers’ inclination to leave their farms, regional dummy variables are introduced. In addition, the total household income variable is logarithmically treated to reduce heteroskedasticity. Tables 1 and 2 display each variable’s definition and the results of the descriptive statistical analysis.

Table 1. Variable definition and descriptive statistical analysis results.

Variable	Definition	N	Mean	Std.
Explained variable:				
Will	Willingness to withdraw from the homestead, with 1 indicating willingness and 0 indicating unwillingness	1971	0.098	0.297
Core explanatory variable:				
Social network	The number of people who can lend you 50,000 yuan when you are in trouble 0 = 0 people; 1 = 1~5 people; 2 = 6~15 persons; 3 = 16 or more persons	1971	0.911	0.808
Mediating variable:				
Risk resilience	1 = weak; 2 = weaker; 3 = ordinary; 4 = stronger; 5 = strong	1971	3.178	0.873

Table 1. Cont.

Variable	Definition	N	Mean	Std.
Control variables:				
Gender	Gender of head of household 1 = male; 0 = female	1971	0.918	0.274
Age	Age of head of household	1971	63.394	10.074
Engel's coefficient	Ratio of food expenditure to total household expenditure	1971	0.400	0.208
Income	Full-year 2019 revenue, taken in logarithms	1971	8.969	1.465
Number of residential plots	Number of homesteads in the family	1971	1.150	0.421
Ownership	What do you think about the ownership of the homestead? 1 = individual or state; 0 = village collective	1971	0.915	0.279
Mortgage	Do you think homesteads can be mortgaged? 1 = yes; 0 = no	1971	0.423	0.494
Inheritance	Do you think homesteads can be inherited? 1 = yes; 0 = no	1971	0.933	0.250
Central Jiangsu	1 = yes; 0 = no	1971	0.223	0.417
Northern Jiangsu	1 = yes; 0 = no	1971	0.387	0.487
Southern Jiangsu	Regional control group, 1 = yes; 0 = no	1971	0.390	0.488

Note: Southern, Central, and Northern Jiangsu are divided according to the *Jiangsu Statistical Yearbook 2020*.

Table 2. Descriptive statistics of social network.

Social Network	0	1	2	3	Total
N	643	955	278	95	1971
Percentage	33%	48%	14%	5%	100%

2.4. Model Setting

To determine whether the social network affects farmers' intentions to leave homesteads, Equation (1) is constructed as follows to verify the relationship between social networks and farmers' willingness to withdraw from homesteads:

$$y_i = \alpha_0 + \alpha_1 sn_i + \alpha X_i + \varepsilon_1 \quad (1)$$

In Equation (1), y is the farm household's willingness to exit the homestead, sn is the farm household's social network, and X represents the control variables.

To test the mediation mechanism of risk resilience between social networks and farmers' willingness to withdraw from homesteads, given that the explained variable and mediating variable are categorical variables, the mediation effect model is set up to calculate the risk resilience's mediating role between the social network and farmers' readiness to leave their homesteads, drawing on the method of Fang et al. [48]. The mediation effect model for the remaining steps is set as follows:

$$ability_i = \beta_0 + \beta_1 sn_i + \beta X_i + \varepsilon_2 \quad (2)$$

$$y_i = \gamma_0 + \gamma_1 sn_i + \gamma_2 ability_i + \gamma X_i + \varepsilon_3 \quad (3)$$

At this point, the $ability$ is the risk resilience of the farmers, and Equations (1)–(3) simultaneously control for the head of the household's characteristic, family characteristic, house property characteristic, property rights perception, and regional characteristic variables. The values of α , β , and γ in Equations (1)–(3) are constant terms, or coefficients to be estimated for the relevant explanatory variables, and ε is a random disturbance term.

The coefficient α_1 in Equation (1) shows how the social network affects farmers' desire to leave their homesteads; the coefficient β_1 in Equation (2) represents the effect of the social network on the mediator variable (farmers' risk resistance); the coefficient γ_2 in Equation (3) is the effect of the mediator variable (farmers' risk resistance) on farmers' willingness to

withdraw from their homesteads when controlling for the social network of the farmers, and the coefficient γ_1 is the impact of the social network on homesteaders' desire to leave after the mediating variable of the risk resilience is added.

Considering that the explained variable is a typical dichotomous variable, Equations (1) and (3) are regressed using a binary logit model. In addition, the mediating variable is a multivariate ordered discrete variable, so Equation (2) adopts an ordered logit model for regression analysis. It should be noted that, unlike OLS, the estimated coefficients of the logit model are not the marginal effects of the explanatory variables on the explained variables, and the interpretation of the coefficients is more complicated, so the regression results in this paper are treated with the average marginal effects.

Because the coefficients derived from Equations (2) and (3) belong to different scales, it is not possible to test for mediation effects through the use of the Bootstrap, coefficient product, or coefficient difference methods. Given this, drawing on MacKinnon et al.'s study [49], the estimation is carried out using the product distribution method and the RMediation package of R 4.3.1 software in the following steps: In the first step, regression is performed on Equation (2) to obtain the estimated value of β_1 and the corresponding standard error ($SE(\beta_1)$), taking $Z_{\beta_1} = \beta_1/SE(\beta_1)$; in the second step, Equation (3) is regressed to obtain the estimate of γ_2 and the corresponding standard error ($SE(\gamma_2)$), taking $Z_{\gamma_2} = \gamma_2/SE(\gamma_2)$; in the third step, RMediation is used to test whether the 95% confidence interval of $Z_{\beta_1} \times Z_{\gamma_2}$ contains 0. If it does not, the mediation effect is established.

3. Empirical Results and Analysis

3.1. Basic Regression Analysis

The logit regression analysis was carried out using Stata 15.0 software. Before conducting the basic regression, the variables need to be tested for multicollinearity, considering that there may be a strict or approximate multicollinearity problem between the core explanatory variable and the control variables. The findings indicate that there was no issue with multicollinearity because the mean value of VIF was 1.11, and the maximum value was 1.35.

The findings of the basic regression analysis and the marginal effects of the social network's influence on farmers' intentions to leave homesteads are presented in Table 3. These findings demonstrate that the social network variable's coefficient is positive and significant at the fifth percentile, and its marginal effect coefficient is 0.019, indicating that the probability that a farm household is willing to quit its homestead increased by 1.9 percent when the social network is raised by one level while keeping other conditions constant. Based on this, Hypothesis 1 is verified.

Among the control variables, the household's Engel's coefficient and cognition of the homestead inheritance right have negative effects on farmers' willingness to withdraw from homesteads. Specifically, (1) farm households' desire to leave their homesteads is strongly and negatively impacted by the household's Engel's coefficient at the 1% statistical level. This is consistent with previous studies [50]. Generally speaking, when the proportion of the food expenditure in the total household consumption expenditure is higher, the economic situation of farm households is more difficult or they have a lower standard of living, and they have a higher degree of dependence on the land and are more inclined to stay in the countryside to engage in agricultural production work rather than choosing to exit the homestead to enter the city [51]. (2) Farmers' misperception of the inheritance right of homestead land has a negative impact at the 10% statistical level. This is in line with previous research [52]. Farmers with misperceptions believe that the withdrawal of rural homesteads is both a destruction of ancestral property and a harm to future generations. For farmers, inheriting ancestral property is a very important thing, and to ensure that the homestead can be passed on as family property for generations, reluctance to leave the farmhouse is common among farmers [53]. In comparison to Southern Jiangsu, farmers in Central and Northern Jiangsu are more inclined to abandon their homesteads on a regional basis. This may be because the cost of living and entry thresholds in towns and cities in

Central and Northern Jiangsu are lower compared to Southern Jiangsu, and it is easier for mobile populations to gain a sense of belonging and a higher sense of identity and well-being.

Table 3. Basic regression results and marginal effects of social network on farmers' willingness to withdraw from homesteads.

Variable	(1) Logit	(2) dy/dx
Social network	0.229 ** (0.094)	0.019 ** (0.008)
Gender	0.517 (0.345)	0.043 (0.029)
Age	-0.007 (0.008)	-0.001 (0.001)
Engel's coefficient	-1.089 *** (0.421)	-0.090 *** (0.035)
Income	0.053 (0.055)	0.004 (0.005)
Number of residential plots	0.065 (0.179)	0.005 (0.015)
Ownership	-0.392 (0.250)	-0.032 (0.021)
Mortgage	0.050 (0.167)	0.004 (0.014)
Inheritance	-0.509 * (0.269)	-0.042 * (0.022)
Central Jiangsu	0.594 ** (0.275)	0.049 ** (0.023)
Northern Jiangsu	1.809 *** (0.230)	0.149 *** (0.019)
_cons	-2.873 *** (0.935)	
Wald chi2	97.69 ***	
N	1971	

Note: In the Logit column, numbers in parentheses are robustness standard errors; in the dy/dx column, numbers outside parentheses are the average marginal effects of the variables, and numbers inside parentheses are standard errors from the delta method. *, **, and *** denote significances at the 10%, 5%, and 1% levels, respectively.

3.2. Robustness Test

To test the consistency of the previous study's findings, this paper uses the replacement of the measurement model, variable substitution, and changing the sample size for robustness testing.

3.2.1. Replacement of Measurement Model

Referring to Xing et al.'s study [54], the OLS regression method is adopted to investigate the effect of social networks on farmers' willingness to withdraw from homesteads. The OLS model, also known as ordinary least squares, is one of the most basic and commonly used methods in regression analysis. It applies to a wide range of situations. The coefficients of the OLS model can be interpreted directly as bias effects, which are relatively simple to interpret and require no further processing. At the same time, the article also applies Probit for the regression. Table 4 shows that the direction and significance of the coefficients of the social network are consistent with the basic regression results in both the OLS model and the Probit model, demonstrating the robustness of the earlier conclusion regarding the influence of the social network on farmers' willingness to leave their homesteads.

Table 4. Replacement of measurement model.

Variable	(1) OLS	(2) Probit	(3) dy/dx
Social network	0.019 ** (0.008)	0.125 ** (0.051)	0.020 ** (0.008)
Control variables	✓ 0.089	✓ −1.573 ***	✓
_cons	(0.080)	(0.474)	
Wald chi2/F	9.07 ***	101.95 ***	
N	1971	1971	

Note: In the OLS column, numbers in parentheses are robust standard errors; in the Probit column, numbers in parentheses are robust standard errors; in the dy/dx column, numbers outside parentheses are the average marginal effects of the variables, and numbers inside parentheses are standard errors of the delta method. **, and *** denote significances at the 5 percent, and 1 percent levels, respectively.

3.2.2. Variable Substitution

When examining how the social network affects farmers' inclination to leave their farms, the question in the questionnaire "Do you have the willingness to withdraw from homesteads if you have not withdrawn?" was used as an indicator of the explained variable. The premise for answering this question is that farmers have not withdrawn from the homestead. According to the Theory of Planned Behavior, willingness and behavior are highly correlated, and homestead withdrawal behavior is influenced by a strong desire to leave the homestead [55]. Given this, this paper considers that the farmers who have withdrawn from the homestead are willing to withdraw and increases this part of the sample of farmers for the regression. In line with Table 3's findings, Table 5 indicates that social networks significantly increase farmers' inclination to leave their homesteads. This further supports the robustness of the fundamental estimation results.

Table 5. Variable substitution.

Variable	(1) Logit	(2) dy/dx
Social network	0.264 *** (0.091)	0.023 *** (0.008)
Control variables	✓ −2.730 *** (0.920)	✓
_cons		
Wald chi2	103.64 ***	
N	1981	

Note: The CLES2020 database contains data on 2628 farm households, and only 42 households withdrew from their homesteads, eliminating outliers and invalid data and resulting in a final sample of 10 farm households so that the sample for the robustness test after adjusting for the explained variable is only 10 more than that of the basic regression. *** denote significances at the 1% level.

3.2.3. Changing Sample Size

A random sample size of 85 percent was selected for the binary logit regression analysis to re-estimate the impact of the social network on farmers' intention to leave their homesteads (see Table 6). In contrast to Table 3, the direction and significance of the coefficients of the social network did not change significantly, and the analysis results are robust.

Table 6. Changing sample size.

Variable	(1) Logit	(2) dy/dx
Social network	0.294 *** (0.102)	0.024 *** (0.009)
Control variables	✓ −3.042 *** (1.008)	✓
_cons		
Wald chi2	88.29 ***	
N	1675	

Note: *** denote significances at the 1% level.

3.3. Heterogeneity Analysis

3.3.1. Regional Heterogeneity

To investigate the variability among regions in the influence of the social network on farmers' inclination to leave their homesteads drawing on the previous research [47], the 13 prefecture-level cities in Jiangsu Province are divided into two parts: developed regions and less-developed regions based on the 2019 City Business Charm Ranking and the *Jiangsu Statistical Yearbook (2020)*, in which the developed regions include Nanjing, Wuxi, Changzhou, Suzhou, Nantong, Yangzhou, and Xuzhou, the seven prefecture-level cities; the less-developed areas include Zhenjiang, Taizhou, Lianyungang, Huai'an, Yancheng, and Suqian, six prefecture-level cities. The logit method was applied for the regression. The basic regression results and the marginal influence of the social network on farmers' willingness to leave their homesteads in various regions are presented in Table 7. The sub-sample regression results show that the developed region group's social network significantly increases farmers' inclination to leave their homesteads, and the less-developed region group's social network has a non-significant positive effect on farmers' willingness to withdraw from homesteads. In terms of the size of the coefficient, the average marginal effect produced by the social network in the developed region group is higher than that in the less-developed region group. The reason may lie in the fact that there is a strong correlation between the social network and regional economic development [56]; the social network of farmers in economically developed regions is richer and more diversified, and the richer and more diversified the social network, the greater the farmers' readiness to give up their homesteads.

Table 7. Regional heterogeneity.

Variable	(1)	(2)	(3)	(4)
	Developed Regions		Less-Developed Regions	
	Logit	dy/dx	Logit	dy/dx
Social network	0.419 *** (0.163)	0.020 ** (0.008)	0.044 (0.106)	0.005 (0.013)
Control variables	✓	✓	✓	✓
_cons	-2.784 (1.718)		-0.125 (1.034)	
Wald chi2	13.41		26.84 ***	
N	1008		963	

Note: This regression removes regional dummy variables. **, and *** denote significances at the 5%, and 1% levels, respectively.

3.3.2. Social Network Heterogeneity

To further explore the heterogeneity of the core explanatory variable (social network), the multivariate ordered explanatory variable is adjusted to a continuous variable, and the sample is divided into two categories of farmers with different social networks for the regression: the first category of farmers had between 0 and 5 people who lent them 50,000 yuan when they were in trouble, which is a weaker social network. In the second category, six or more people lent them 50,000 yuan when they were in difficulty, and this category of farmers has a richer social network. To reduce the differences between the data and avoid the influence of extreme values, the social network variable takes a logarithm. Considering that the data are non-negative but with the presence of zeros, 1 was added to each continuous variable social network and then the social network variable that was added to 1 was logged. The binary logit model was used to estimate the two types of samples, and the estimation results are shown in Table 8. The average marginal effect coefficient for the impact of the social network on the willingness of the first category of farmers to withdraw from homesteads is 0.038 and is significant at the 1 percent level. The positive effect of the social network on the readiness for leaving farms in the second category of farmers passes the significance test of 5 percent, with a mean marginal effect

coefficient of 0.027. This suggests that among farmers with poorer social networks, the social network has a higher favorable effect on their readiness to leave their homesteads. This may be explained by the fact that family members of farm households with low levels of social networks tend to be employed locally, and expanding their social network not only reduces the cost for searching for a job and the cost of living for out-of-home employment but also allows the farm households to obtain more employment information and increases the chances of the farm households to be employed [57], which leads to the realization of out-of-home employment, a reduction in the degree of dependence on homesteads, and an increase in the willingness to withdraw from homesteads of the farm households.

Table 8. Social network heterogeneity.

Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Full Sample		First Category		Second Category	
	Logit	dy/dx	Logit	dy/dx	Logit	dy/dx
Social network	0.221 *** (0.069)	0.018 *** (0.006)	0.467 *** (0.133)	0.038 *** (0.011)	0.327 ** (0.162)	0.027 ** (0.014)
Control variables	✓	✓	✓	✓	✓	✓
_cons	-2.930 *** (0.928)		-3.090 *** (1.078)		-3.485 * (1.888)	
Wald chi2	98.47 ***		84.73 ***		24.61 **	
N	1971		1598		373	

Note: *, **, and *** denote significances at the 10%, 5%, and 1% levels, respectively.

3.4. Intermediation Effect Analysis

Table 9 reports the results for the test of the mediating effect of the risk resilience between the social network and farmers' readiness to leave their homesteads. Model (1) is an ologit model, where the core explanatory variable is the social network, and the explained variable is the risk resilience, and these findings demonstrate that social networks have a considerable positive impact on risk resilience at the 1% statistical level. Model (2) is a logit model in which the explained variable is the farmers' willingness to withdraw from homesteads, the core explanatory variable is the social network, and the mediating variable is the risk resilience; the table shows that both the social network and the risk resilience have notably favorable effects on peasants' intention to leave homesteads, and the coefficient of the social network variable has decreased compared to the results in Table 3 after the addition of the risk resilience variable. According to the method described in the previous section, the 95% confidence interval of $Z_{\beta 1} \times Z_{\gamma 2}$ is calculated at [0.0114, 0.1136] using the RMediation package of R 4.3.1 software, and the interval does not contain 0, which implies that farmers can improve risk resilience through the social network to encourage the development of a desire to leave their homesteads. Based on this, Hypothesis 2 is verified.

Table 9. Results of intermediation analysis.

Variable	(1) Risk Resilience		(2) Will
	Ologit	Logit	
Social network	0.309 *** (0.058)	0.206 ** (0.095)	
Risk resilience		0.192 ** (0.093)	
Control variables	✓	✓	
_cons		-3.405 *** (0.971)	
Wald chi2	66.05 ***	98.64 ***	
N	1971	1971	
95 percent confidence interval for $Z_{\beta 1} \times Z_{\gamma 2}$		[0.0114, 0.1136]	

Note: **, and *** denote significances at the 5%, and 1% levels, respectively.

4. Discussion

Social networks play an important role in rural life [58], and it is crucial to explore how social networks affect farmers' willingness to withdraw from homesteads. This exploration has important theoretical significance and practical value for improving the utilization efficiency of rural homesteads and so on. This paper empirically analyzes the influence of social networks on farmers' willingness to withdraw from homesteads, as well as the mediating effect of the risk resilience. This study proves that social networks have a significant positive effect on farmers' willingness to withdraw from homesteads, a finding that is consistent with the results of Feng et al. [30], who argue that social networks can significantly increase farmers' willingness to withdraw from homesteads and that government regulation plays a positive moderating role in this. However, our findings differ from those of Yuan et al. [29], and we hypothesize that this may be because of differences in culture, policies, etc. between provinces. Our study provides a reference for scholars to further explore the impacts of social networks. For the analysis of the mediation effects, we used a method consistent with Liu et al. [35]. Both studies use the product distribution method proposed by MacKinnon and Cox [49], which is effective in testing the mediating effect. Unlike Zhu et al. [40], who focus on the direct impact of farmers' ability to cope with risk on farmers' willingness to withdraw from homesteads, we include the risk resilience in the analysis of the mediating effects. We further analyze the heterogeneity of the effect of the social network on the willingness of farm households to withdraw from homesteads. We observed that expanding social networks had a more significant effect on the homestead withdrawal intention of farmers whose social networks were at a lower level. In addition, this study found that the effect of social networks is more significant in developed regions. Existing studies have paid less attention to the regional differences in the impact of social networks, and this study fills that research gap.

5. Conclusions and Implications

5.1. Conclusions

This paper explores the influence of social networks on farmers' willingness to withdraw from homesteads through heterogeneity analysis and the mediating effect mechanism with 1971 farmers in Jiangsu Province as the research object. The main findings are as follows:

First, this paper confirms that social networks have a significant positive effect on farmers' willingness to withdraw from homesteads, verifying Hypothesis 1. This finding not only makes up for the shortcomings of the existing literature in terms of the effect of social networks on farmers' willingness to withdraw from homesteads but also highlights the importance of social networks in improving farmers' willingness to withdraw from homesteads and improving the efficiency of land use in the Chinese countryside, which is an "acquaintance society";

Second, we demonstrate that social networks can increase farmers' willingness to withdraw from homesteads by improving the risk resilience and, thus, increasing their willingness to withdraw from homesteads. This supports Hypothesis 2, which shows that social networks not only have direct effects but also have mediating effects. At the same time, it also proves that the risk resilience has a positive effect on increasing farmers' willingness to withdraw from homesteads. Therefore, effectively improving the ability of farmers to cope with risks is one of the important measures;

Finally, this study confirms that the effect of social networks on farmers' willingness to withdraw from homesteads is more significant in developed regions compared to less-developed regions, highlighting regional differences. In addition, we found that expanding social networks has a greater positive effect on the willingness to withdraw from homesteads of farmers with weaker social networks than farmers with richer social networks. This requires that, in the process for promoting the voluntary withdrawal of farmers from homesteads, it is necessary to adhere to a localized and household-specific approach.

This paper has some limitations. First, this study did not construct indicators to measure social networks from multiple dimensions. In future studies, the impacts of different dimensions of social networks on farmers' willingness to withdraw from homesteads and the mechanisms of their action can be analyzed in depth. Second, Jiangsu Province is one of the developed provinces in China, and future research can select provinces with different levels of economic development for further comparative analysis.

5.2. Implications

Based on the above analyses, the following insights have been obtained:

To begin with, focus on the cultivation and enhancement of farmers' social networks. Through the organization of collective activities in rural areas, conditions are provided for strengthening ties between farming households, promoting exchanges among them, and broadening the channels for information exchange. Farmers are encouraged to participate in collective activities, actively establish and maintain their own social networks, and give full play to the positive effects of social networks.

Second, enhance the risk-resistant ability of farm households. On the one hand, continuing education should be vigorously carried out in rural areas, and vocational education and employment training for farmers should be strengthened in a targeted manner to enhance their professional skills and employability, promote their employment, and increase their income. On the other hand, optimize the rural financial environment, strengthen the innovation of formal financial products and services, expand the range of collateral for farmers, regulate and promote the development of informal finance, and enhance the availability of loans for farmers.

Finally, design differentiated policies for the withdrawal of homesteads. Because of the different levels of economic development between regions and the different levels of social networks of farmers, it is necessary to reasonably design differentiated exit policies according to local conditions and classifications and to guide farmers who have the will and conditions to withdraw from homesteads in an orderly manner by region and group to avoid the negative impacts on society caused by one-size-fits-all policies.

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