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Understanding the Role(s) of Social Networks in the Transition from Farmers' Willingness to Behavior Regarding Withdrawal from Rural Homesteads: A Research Study Based on Typical Regions of Sichuan Province

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Abstract: Promoting withdrawal from rural homesteads (WRH) is a significant way of enhancing the efficient use of homesteads, improving the living standards of farmers, and promoting new urbanization. Social networks provide farmers with necessary resources and play an important role in the practices of WRH. Based on a literature review, this paper divides farmers' social networks into the emotional social network, the economic social network, and the political social network and analyzes the impacts of social networks on farmers' willingness and behavior regarding WRH using the binary logistic regression model, based on the data of 299 peasant households in Sichuan Province. The following finds are established: (1) the economic social network significantly and negatively affects farmers' willingness and behavior regarding WRH, while the political social network has a positive impact on farmers' willingness and behavior regarding WRH; (2) the emotional social network significantly and positively affects farmers' willingness regarding WRH, but it does not have a significant effect on farmers' behavior regarding WRH; and (3) the economic social network and political social network exhibit opposite influences on the transition from farmers' willingness to behavior regarding WRH. We conclude that social networks play a vital role in affecting farmers' willingness and behavior regarding WRH. The research suggests that expanding the scope of farmers' interactions and social networks can be helpful in implementing WRH. The employment training system and social security system should also be improved.

Keywords: social networks; withdrawal from rural homesteads (WRH); social capital; farmers' decision; rural revitalization

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Citation: He, Y.; Tang, P. Understanding the Role(s) of Social Networks in the Transition from Farmers' Willingness to Behavior Regarding Withdrawal from Rural Homesteads: A Research Study Based on Typical Regions of Sichuan Province. *Land* **2023**, *12*, 1505. https://doi.org/10.3390/land12081505

Academic Editors: Jianjun Zhang, Feng Xu, Guangqing Chi and Yongheng Rao

Received: 1 July 2023
Revised: 14 July 2023
Accepted: 19 July 2023
Published: 28 July 2023

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1. Introduction

Since the 1980s, China has experienced fast economic development and urbanization, with much of the rural labor force migrating to towns and cities. In 2022, the total number of migrant workers reached 295.62 million, which is an increase of 3.11 million compared to 2021. Among them, there were 123.72 million local workers and 171.9 million migrant workers, i.e., an increase of 0.1% [1]. In the meantime, under the existing system of free and indefinite use of rural homesteads, the per capita housing area of rural residents has increased from 8.1 m^2 in 1978 to 45.8 m^2 in 2022. However, with the continuous outflow of the rural population, this increased per capita housing area has not been effectively utilized, with an increasing number of homesteads remaining unused and being abandoned in rural areas.

For this reason, a set of policies have been promulgated to promote a compensated withdrawal from rural homesteads (WRH), thereby improving land use efficiency. In 2015,

the Chinese central government launched three types of pilot project for reforming the rural land system, including establishing mechanisms for paid use of and withdrawal from homesteads. Based on those pilot projects, the idea of separating rural land rights (ownership rights, contract rights, and management rights) has been innovatively put forward in the No. 1 Central Document. By promoting the separation of these three rights, the farmers' property rights to their land will be guaranteed. In 2020, a new round of pilot projects for reforming the rural homestead system was initiated to explore the ways for separating land rights. Specifically, in the experimental areas, the focus was on the protection of the rights and interests of farmers' homesteads along with the exploration of a mechanism to guarantee usage rights for farmers' homesteads. At the same time, increasing farmers' property income by exploring the circulation, mortgage, voluntarily paid withdrawal, and paid use of homestead rights was tested.

Scholars have paid attention to the issue of withdrawal from homestead. Farmers' willingness and behavior have a fundamental impact on the success of WRH. Therefore, it is important to investigate the factors influencing farmers' willingness and behavior regarding WRH. Early research focused on objective factors, such as personal characteristics [2], family characteristics [3], homestead characteristics [4], and economic status [5]. Recently, the literature has recognized the importance of subjective cognitive factors, including behavioral attitude [6], risk preference [7], value cognition [5], and policy cognition [8]. However, little is known about the interaction between individuals, and it has been long debated in the fields of social science and economic analysis. Chinese society, especially in rural areas, is known as an "acquaintance society", characterized by social networks of consanguinity, kinship, career, and friendship. Moreover, a large number of studies [9–11] show that social networks play an explicit or implicit role in rural life. In this regard, it is important to explore the impacts of farmers' social networks on homestead withdrawal.

Social networks have impacts on actors' socio-economic behavior [12]. A small number of researchers have explored the influence mechanism of land transfer from the perspective of social networks [13,14]. However, they paid little attention to the impacts of social networks on farmers' willingness/behavior regarding WRH.

Therefore, this paper examines the effects of different types of farmers' social networks on farmers' willingness and behavior regarding WRH. This can provide a theoretical basis for promoting WRH. By addressing these issues, this study aims to contribute to existing research in two ways. Firstly, this provides a different theoretical perspective to understand how farmers choose their homestead withdrawal methods from the perspective of social network analysis. Secondly, this study focuses on the emotional, economic, and political dimensions of farmers' social networks, which broadens our understanding of the impacts of social networks on actors' strategies and behavior.

2. Theoretical Framework and Hypothesis

2.1. The Concept of Social Networks

There is much debate on the concept of social networks. Zimmel (1955) [15] argues that individuals constitute a society through their interactions. Wellman (1988) [16] defines a social network as a relatively stable system formed by interactions between social members. Mitchell (1974) argues that a social network is a specific connection among group members, and a network structure results from the social behavior of group members. From this perspective, a social network emphasizes interactions and relationships of group members [17]. Montgomery (1991) claims that individuals serve as nodes in a social network, and the flow of material, culture, and information through these nodes forms networks [18]. Similarly, research on social networks in China began with the study of "guanxi". Fei Xiaotong put forward the concept of the "Differential Mode of Association". The theory of "Differential Mode of Association" holds that China's traditional social network is a network of interpersonal relationships based on blood ties, kinship, and geography, centering on families [19]. Furthermore, from the perspective of social exchange, Huang Guangguo (2010) [20] argues that Chinese people tend to make "relation

judgments" when exchanging resources. He divided interpersonal relationship into three categories: emotional, instrumental, and mixed relationships. In short, a social network is a collection of complex relationships between people and organizations, within which different kinds of resources exist. In Chinese rural areas, farmers' social networks are based on the interactions and relationships of individuals with similar kinship, locations, and interests. In addition, village committees play a significant role in rural society [21]. Therefore, farmers' social networks refer to the relationships and interactions of farmers, village committees, and other collective organizations. Based on a literature review, farmers' social networks consist of the emotional, economic, and political social networks.

2.2. Different Perspectives of Social Network Analysis

According to social embeddedness theory, when an individual makes a decision, it is not only based on the consideration of the "rational man" in economics, but also affected by the embedded social networks. In the context of China's "relational society" and the faster exchange of information and resources among farmers, farmers construct a network of relationships through themselves or their families with the outside world. According to the explanation of social interaction theory, in a certain social relationship context, individuals and groups can interact and influence each other psychologically, behaviorally, and ideologically through certain ways of connection and contact. Therefore, social relationship networks play an important role in certain collective actions and village governance in rural areas. Granovetter (1985) divides network embeddedness into two types: structural elements and relational elements [22]. A large body of research has promoted the rapid development of social network theories, such as the hypothesis of strong and weak ties [23], Structural Holes [24], and Social Resources [25]. Specifically, the theory of Social Resources emphasizes the energy and resources that individuals can obtain from social networks. Furthermore, this theory advocates that individuals can only benefit from social networks by using the money, goods, contacts, information, and other resources in the network, instead of making use of those resources directly [26]. According to Coleman, the closer two members in a social network are, the more frequent their contacts are, and the smoother their information flows will be [27]. Therefore, the influence of a social network on individuals will enhance the ties in the network, which can promote the allocation of resources by generating and transmitting valuable resources, thus creating more economic benefits for individuals [28]. Social networks affect the economic behavior of individuals and organizations from the resource level, or put differently, they affect the decision-making of farmers [29,30]. Different types of social networks can bring different resources to actors, thus having different influences on their decision-making. The specific impact pathways are shown in Figure 1.

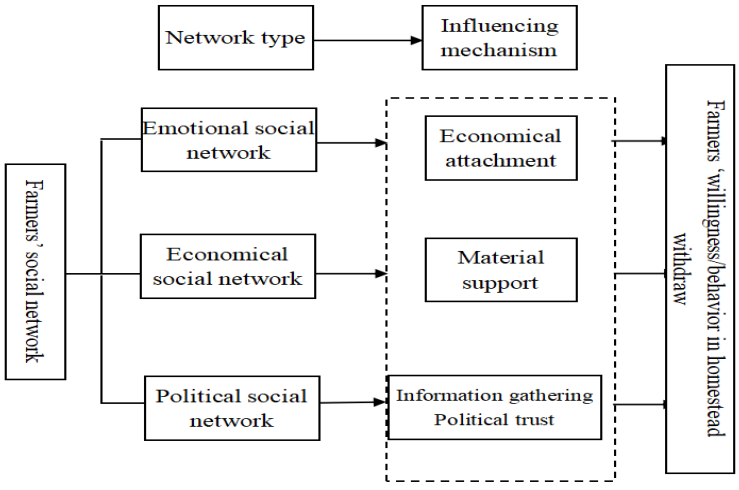

Figure 1. Theoretical analysis framework for influence of farmers' social networks on their willingness/behavior in homestead withdrawal.

2.2.1. The Influence of Emotional Social Network on WRH

Family members, relatives, friends, neighbors, and village committees can provide farmers with a sense of trust, which impacts farmers' willingness and behavior. A blood relationship (endogenous relationship) can allow family members to communicate feelings intrinsically, and it provides more effective cooperation and economic mutual benefit in production and life. When homestead withdrawal is accepted by family members, especially the head of a household, which would reduce the psychological cost of future uncertainty, it is easier to implement WRH programs. In a rural society, farmers emphasize "intimate relationships" because of frequent and extensive contact among villagers. Family and pan-family members who have settled in the same place for a long time tend to be emotionally interdependent and support each other [31]. Therefore, the close relationship between relatives and friends is more conducive to collective actions. In addition, close relationships among farmers and village committees and village cadres can reduce the psychological cost resulting from lack of experience or uncertainty regarding WRH. Thus, those farmers will be more willing to respond to the call from village committees. Based on this, this paper makes the following theoretical hypotheses.

H1a. *The emotional social network has a positive impact on farmers' willingness for WRH.*

H1b. *The emotional social network has a positive impact on farmers' behavior regarding WRH.*

2.2.2. The Influence of Economic Social Network on the WRH

Family members, relatives, and neighbors can provide funds to alleviate the financial risk in WRH, which increases the willingness and behavior of farmers. With the development of the market economy, the construction of social networks in rural areas of China is based on interests. Individuals will fully consider their own resource endowments and the resources from their social networks before making decisions on WRH. In the process of WRH, more funds can be raised to build or buy new houses in cities through borrowing from relatives and friends, thus alleviating economic difficulties due to the lack of compensation funds [32]. At the same time, effective cooperation in production and economic mutual benefit can lead to the emergence of social communication among farmers, such as gift giving, borrowing, and asset sale, which can help farmers mitigate the risks from WRH. Thus, this paper makes the following theoretical hypotheses.

H2a. *The economic social network has a positive impact on farmers' willingness for WRH.*

H2b. *The economic social network has a positive impact on farmers' behavior regarding WRH.*

2.2.3. The Influence of Political Social Network on WRH

Contact with village committees and village cadres can promote farmers' willingness and behavior regarding WRH by developing farmers' trust in village committees and village cadres and enhancing the familiarity with grass-roots public policies, thus facilitating information exchange. The interactions between cadres and farmers can mitigate information asymmetry, reduce transaction costs, and improve farmers' awareness of WRH, which can facilitate farmers' decision-making on WRH. At the same time, farmers with high trust in village committees tend to participate actively in cultural activities and collective actions, such as managing property, implementing plans, and distributing social welfare benefits [33]. Thus, the higher the trust farmers have in village committees, the more willing they will be to respond to the call of village committees on WRH. In this sense, this paper makes the following theoretical hypotheses.

H3a. *The political social network has a positive impact on farmers' willingness for WRH.*

H3b. *The political social network has a positive impact on farmers' behavior regarding WRH.*

2.2.4. The Influence of Social Networks on the Transition from Farmers' Willingness to Behavior Regarding WRH

Social networks can play a facilitating role in transferring farmers' willingness to behavior regarding WRH. Farmers can make use of social networks to gain financial support, thus encouraging farmers to take action on WRH. In addition, farmers can eliminate the asymmetry of information regarding homestead withdrawal through contact with the village committee and village cadres. In this regard, unnecessary transaction costs and institutional costs are reduced, and the support of the collective organization can accelerate farmers participation in WRH. Therefore, this paper makes the following theoretical hypotheses.

H4. *The social network significantly affects the transformation process from farmers' willingness to behavior regarding WRH.*

3. Data and Model

3.1. Data Sources

The study region includes four areas of Sichuan Province in which the pilot schemes of homestead reform took place, including Cuiping District, Luxian County, Ziyang City, and Pengshan District in Meishan City. Specifically, Luxian has experienced the first round (2015–2019) of the national rural land system reform, while the other three areas are included to practice pilot programs of the rural land system reform. In addition, these four regions are in different phases of urban and economic development with various terrains, which are representative for studying farmers' willingness and behavior in WRH.

The data were mainly collected through a questionnaire, which was conducted by the research group in the period of July–September 2022. The method of random sampling is adopted to recruit participants from the research areas. According to the characteristics of the study area, we randomly selected 10–20 households in each village and finally interviewed a total of 304 households. A total of 299 questionnaires were valid, with an effective rate of 98.36%. Trained interviewers conducted face-to-face surveys with participants based on a set of questionnaires to investigate personal characteristics, social networks, and willingness and behavior regarding WRH. Table 1 illustrates the detailed information of the data sample.

Table 1. Survey samples in four regions in Sichuan Province.

Region	Quantity	Proportion (%)
Cuiping district	92	30.77
Luxian county	85	28.40
Ziyang City	36	12.00
Pengshan district	86	28.20
Total	299	100

(Source: investigation and collection by the author).

3.2. Variable Selection

3.2.1. Explained Variables

The explained variables include farmers' willingness and behavior regarding WRH. Farmers' willingness and behavior regarding WRH is the binary variable. If a farmer is willing to move and the WRH does not take place, the explained variable equals 0; otherwise it is 1 (see details in Table 2). According to the survey, 53.85% of farmers were willing to withdraw, and 38.13% have withdrawn from their rural homesteads. In other words, even though farmers have the willingness to withdraw from their homesteads, they may not take action, thus revealing that farmers may be affected by external conditions regarding WRH. SPSS23.0 was used to analyze the consistency between farmers' willingness and their actual behavior regarding WRH. The results are shown in Table 3. The Kappa

value is 0.602, proving the consistency between farmers' willingness and actual behavior regarding WRH.

Table 2. Definition of explained variables.

Code	Definition and Assignment of Variables	Assignment
will	Are farmers willing to withdraw from the homestead?	Yes is assigned a value of 1; No is assigned as 0.
act	Have the farmers withdrawn from the homestead?	Yes is assigned a value of 1; No is assigned as 0.
con	Have the farmers withdrawn from the homestead willingly?	Yes is assigned a value of 1; No is assigned as 0.

Table 3. Test of consistency between farmers' willingness and behavior regarding WRH.

		Kappa Value	Progressive Standard Error	Approximate T	Progressive Significance
Protocol measurement		0.602	0.050	7.312	0.000
Number of valid cases	299				

3.2.2. Explanatory Variables

Based on the literature review, this research divides farmers' social networks into the emotional social network, the economic social network, and the political social network. From the relational perspective, it is important to examine the connecting methods and the strength and stability of those connections in a social network. Therefore, this research measures the strength of farmers' social networks based on the closeness of relationships [23], the degree of economic interactions [34], and the degree of trust [35].

However, using these variables may require specific environmental contexts, and the coefficients of variables with different dimensions cannot be directly compared. According to the existing literature [11], the min–max normalization method was selected to process these data, which did not change the distribution characteristics of the data. The explanatory variables with dimensionless processing are demonstrated in Table 4.

Table 4. Definition of explanatory variables.

Code	Definition and Assignment of Variables		Assignment
EM1	EMSN	Close relationship with family members	"Very alienated" is assigned as 1; "Alienated" as 2; "So-so" as 3; "Close: as 4; "Very close" as 5.
EM2		Close relationship with relatives, friends, and neighbors	"Very alienated" is assigned as 1; "Alienated" as 2; "So-so" as 3; "Close: as 4; "Very close" as 5.
EM3		Close relationship with the village committee	"Very alienated" is assigned as 1; "Alienated" as 2; "So-so" as 3; "Close: as 4; "Very close" as 5.
EO1	EOSN	Working place outside the hometown	"Other provinces" is assigned as 1; "Other cities in the province" as 2; "Local city" as 3; "Local village and town" as 4; "Never work outside the hometown" as 5.
EO2		Help from relatives, friends, and neighbors	"Never help" is assigned as 1; "Occasionally" as 2; "So-so" as 3; "Frequently" as 4; "Always" as 5.
EO3		Money exchange with relatives, friends, and neighbors	"No money exchange" is assigned as 1; "Borrowed" as 2; "Lent" as 3; "Borrowed money from each other" as 4.
PO1	POSN	Participation in conference activities related to homestead	"Never" is assigned as 1; "Occasionally" as 2; "So-so" as 3; "Frequently" as 4; "Participation in every activity" as 5.
PO2		Frequency of contact with village cadres	"A few times a year" is assigned as 1; "1 times per month" as 2; "2-4 times per month" as 3; "2-3 times per week" as 4; "Everyday basically" as 5.
PO3		Trust in the village committee	"No trust at all" is assigned as 1; "Distrust" as 2; "So-so" as 3; "Trust" as 4; "Full trust" as 5.

3.2.3. Control Variables

Based on the literature review, the following variables are included as control variables. (1) First, there are the personal characteristics of farmers, including gender, age, and education level [36]. (2) Second, there are the characteristics of farmers' families, including the total population and the ownership of an apartment in cities and towns [37]. Family size may affect farmers' demand for homesteads. For instance, if the family size decreases, farmers may consider reducing the area of homestead or choose to withdraw. If family members work or live in towns, the demand for and use of the homestead may decline, thus increasing the possibility of withdrawal. (3) Third, the characteristics of farmers' homesteads, including the location and service years, are included. The location of a homestead determines the transportation accessibility and degree of urbanization. If the homestead is located in an area with a higher degree of urbanization, farmers may have more development opportunities, thus increasing their incentive to exit. And, the service years of a homestead has a great impact on property quality, land use efficiency, and other factors. If a homestead has been used for a long period and requires much effort to maintain it, farmers may consider exiting in order to obtain other more profitable land resources. (4) Included here are the variables relating to agricultural land, including the total area and degree of mechanization. The total area of agricultural land closely relates to the economic income and livelihood mode of farmers. If a farm household has a larger area of agricultural land, farmers' willingness for WRH may decrease. In contrast, the degree of mechanization of agricultural land may relate to the labor requirements and economic efficiency of the farm household. If a farmer's agricultural land has been mechanized to a higher degree, it may reduce the demand for homesteads, thus increasing the likelihood of exit. (5) Finally, variables relating to locations are included, mainly referring to the distance to the nearest county town. If a homestead is far away from the county town, it would be inconvenient for farmers to access public services, thus increasing the incentive for WRH. Detailed information on control variables is shown in Table 5.

Table 5. Definition of control variables.

Code	Definition and Assignment of Variables	Assignment
age	Age	Take the logarithm.
gen	Gender	1 for male; 0 for female.
edu	Degree of education	1 for primary school or below; 2 for junior middle school; 3 for senior high school; 4 for vocational school and technical secondary school; 5 for junior college and bachelor's degree or above.
popu	Number of family members	Take the logarithm.
inc	Annual net income of the family	1 for RMB 0–3000; 2 for RMB 3001–6000; 3 for RMB 6001–9000; 4 for RMB 9001–12,000; 5 for RMB 12,000 and above.
hom	Apartment in cities and towns	1 for Yes; 0 for No.
zage	Service life of homestead	Take the logarithm.
zarea	The size of the homestead	Take the logarithm.
loca	Homestead location	1 for homestead near main road; 0 for homestead far from main road.
carea	Total area of contracted land	Take the logarithm.
clz	Agricultural land transfer	−1 for agricultural land transferred in; 0 for no transfer; 1 for agricultural land transferred out.
mec	Degree of mechanization	1 for no farmland cultivated; 2 for no mechanized farm implements used; 3 for mechanized planting; 4 for mechanized harvest; 5 for mechanized planting and harvest
dis	Distance to the nearest county	Take the logarithm.

Descriptive statistics of the variables are shown in Table 6.

Table 6. Descriptive statistics of the variables.

Code	Minimum Value	Maximum Deviation	Mean Value	Standard Deviation
will	0	1	0.54	0.50
act	0	1	0.38	0.49
con	0	1	0.57	0.50
EM1	0	1	0.78	0.18
EM2	0	1	0.59	0.22
EM3	0	1	0.72	0.22
EO1	0	1	0.50	0.37
EO2	0	1	0.79	0.22
EO3	0	1	0.58	0.42
PO1	0	1	0.55	0.43
PO2	0	1	0.32	0.38
PO3	0	1	0.71	0.22
age	3.22	4.45	4.04	0.24
gen	0	1	0.60	0.49
edu	1	5	1.69	1.08
popu	0	3.18	1.77	0.54
inc	1	5	2.37	1.49
hom	0	1	0.41	0.49
zage	0.69	5.30	3.17	0.68
zarea	3	6.91	5.05	0.52
loca	0	1	0.60	0.49
carea	−1.61	5.80	1.08	0.85
clz	−1	1	0.32	0.63
mec	1	5	2.58	1.26
dis	0	2.48	1.35	0.69

3.3. Model Setting

Regarding WRH, farmers have two choices: to withdraw or not. Given that the random disturbance term is assumed to follow the logistic distribution, the binary logit model can be used for analysis.

The equation for farmers' willingness for WRH is as follows:

$$Y_w = ln\left(\frac{p_w}{1-p_w}\right) = \alpha_0 + \alpha_1 net_1 + \alpha_2 net_2 + \alpha_3 net_3 + \rho X_i + \varepsilon$$

where Y_w indicates whether farmers are willing to withdraw or not; if Y_w equals 1, this indicates that a farmer is willing to withdraw from the rural homestead; otherwise, Y_w equals 0. net_1 represents the emotional social network, net_2 represents the economic social network, net_3 represents the political social network, X_i represents a series of control variables, and α_1, α_2, and α_3 represent corresponding influence coefficients, respectively. α_0 refers to a constant term, and ε represents a random disturbance term.

In addition, the behavior equation model for analyzing farmers' behavior regarding WRH is as follows.

$$Y_a = ln\left(\frac{p_a}{1-p_a}\right) = \beta_0 + \beta_1 net_1 + \beta_2 net_2 + \beta_3 net_3 + \gamma X_i + \theta$$

where Y_a indicates whether farmers have withdrawn from rural homesteads. If Y_a equals 1, it indicates that farmers have withdrawn from their rural homesteads; otherwise, Y_a = 0. net_1 represents the emotional social network, net_2 represents the economic social network, net_3 represents the political social network, X_i represents a series of control variables, and β_1 and β_3 represent corresponding coefficients, respectively. β_0 represents a constant term, and θ represents a random disturbance term.

Regarding the transition from farmers' willingness to actual behavior on WRH, the analysis focuses on the influence of social networks on farmers' willingness. Therefore, the logit model is as follows.

$$Y_z = ln\left(\frac{p_z}{1-p_z}\right) = \mu_0 + \mu_1 net_1 + \mu_2 net_2 + \mu_3 net_3 + \pi X_i + \tau$$

where Y_z indicates whether farmers will withdraw if they have willingness. If Y_z = 1, it indicates that farmers have willingness for WRH and have withdrawn; otherwise, Y_a = 0, indicating that farmers with willingness have not withdrawn from their homestead. net_1 represents the emotional social network, net_2 represents the economic social network, net_3 represents the political social network, X_i represents a series of control variables, and μ_1, μ_2, and μ_3 represent the corresponding coefficients, respectively. μ_0 represents a constant term, and τ represents a random disturbance term.

4. Results

To avoid the issue of collinearity, the tolerance and variance inflation factor on social networks was analyzed. The results in Table 7 show that the tolerance (TOL) of the independent variables is greater than 0.8, and the variance inflation factor (VIF) is less than 2. Thus, and there is no multicollinearity.

Table 7. Test results of tolerance and variance inflation factor.

Variables	TOL	VIF	1/VIF
EMSN	0.935	1.069	0.9355
EOSN	0.884	1.131	0.8842
POSN	0.915	1.093	0.9149
Mean VIF		1.098	

4.1. Descriptive Statistics

4.1.1. Social and Economic Factors

Table 8 summarizes the sample characteristics in relation to social and economic factors. Firstly, the proportion of males is 59.87%. Moreover, the majority of surveyed farmers are middle-aged and older, with those over 40 years old accounting for 89.63%, given that young generations normally go out and find work in urban areas. Regarding the education level of the sample farmers, 20 people have bachelor's degrees or above, accounting for 6.69%, while 172 people have primary school education or below, accounting for 57.53%. In terms of family population structure, 89.97% of the sample have 1–10 family members; the proportion of families without elderly people is 59.9%, the proportion of families having one elderly person is 22.74%, and the proportion of families having two or more elderly people is 17.36%. This shows that the age-dependency ratio is relatively low in the sample area, the demand for old-age support of rural homestead is not strong, and most farmers may be willing to withdraw. In terms of buying apartments in cities and towns, 40.8% of the peasant families have purchased apartments, and 59.2% have not. Many farmers have bought apartments in rural towns, and their dependence on homesteads has decreased.

4.1.2. Farmers' Willingness and Behavior Regarding WRH

The willingness of farmers to participate in WRH is a prerequisite for rural homestead reform. On this basis, facilitating the farmers to withdraw from the homestead when they are willing is the key to promoting WRH and improving the rural land utilization. The results of farmers' willingness to participate in WRH include "willing" and "unwilling". Figure 2 shows that 46.15% of the farmers are not willing to withdraw from their rural homesteads. The reasons consist of their own living needs, insufficient compensation, and reluctance to move out due to nostalgia.

Table 8. Basic characteristics of farmers surveyed.

Item	Options	Q'ty	Proportion (%)	Item	Options	Q'ty	Proportion (%)
Gender	Male	179	59.87	Degree of education	Primary school and below	172	57.53
	Female	120	40.13		Junior middle school	92	30.10
Age	≤30	5	1.67		Senior high school	13	4.68
	31–40	26	8.70		Vocational school, technical secondary school	3	1.34
	41–50	37	12.37		Bachelor's degree (junior college) and above	19	6.69
	51–60	116	38.46	Number of family members	1–5	112	37.46
	61–70	59	19.73		6–10	157	52.51
	71–80	53	17.73		11–15	28	9.36
	≥80	3	0.67		16–20	1	0.33
					≥21	1	0.33
Apartments in cities and towns	Yes	122	40.8	Number of elderly people	0	179	59.90
	No	177	59.20		1	68	22.74
					2 and above	50	17.36

(Source: investigation and collection by the authors).

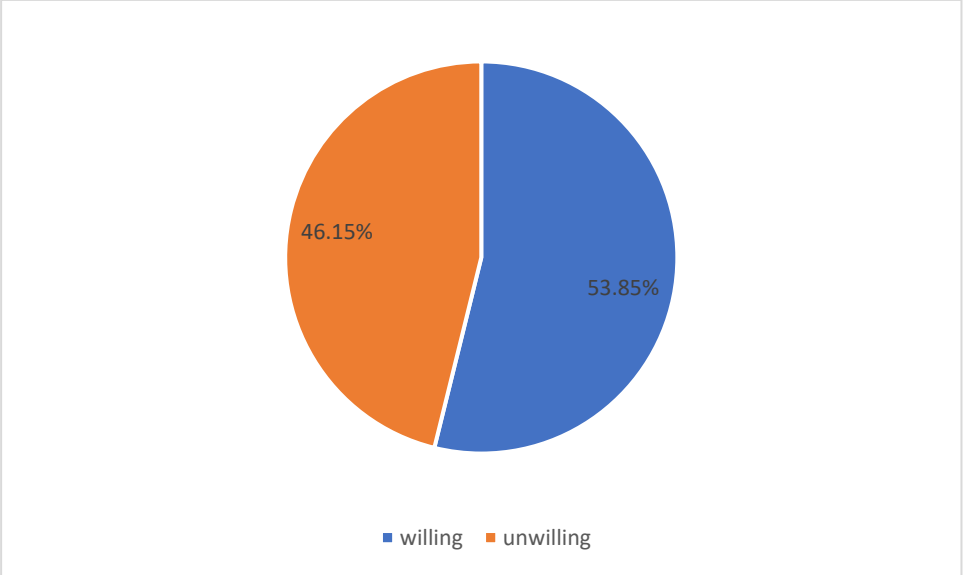

Figure 2. Farmers' willingness for WRH.

Regarding the actual behaviors of farmers, Figure 3 shows that 57.14% of farmers who are willing to withdraw have taken actions regarding WRH. The influence factors include the number of homesteads farmers have, housing conditions, and the strategies of their neighbors. It can be seen that the withdrawal or non-withdrawal of the surrounding people is one of the important influencing factors for the actual occurrence of withdrawal by the farmers.

4.2. Impacts on Farmers' Willingness for WRH

The regression results are shown in Table 9. Economic and social networks have a significant negative impact on farmers' willingness for WRH. Farmers with high scores in the emotional social network (OR = 16.925, $p < 0.01$) and the political social network (OR = 4.835, $p < 0.05$) have more willingness for WRH, whereas individuals with high scores in the economic and social network (OR = 0.092, $p < 0.01$) are less likely to withdraw from their homesteads. Among the three types of social networks, emotional social network has the greatest influence on farmers' willingness to withdraw from homesteads. This may be explained by the fact that there are certain social norms and pressures in farmers'

social networks. If members of farmers' social networks generally believe that homestead withdrawal is a wise and feasible choice, farmers tend to consider withdrawal positively.

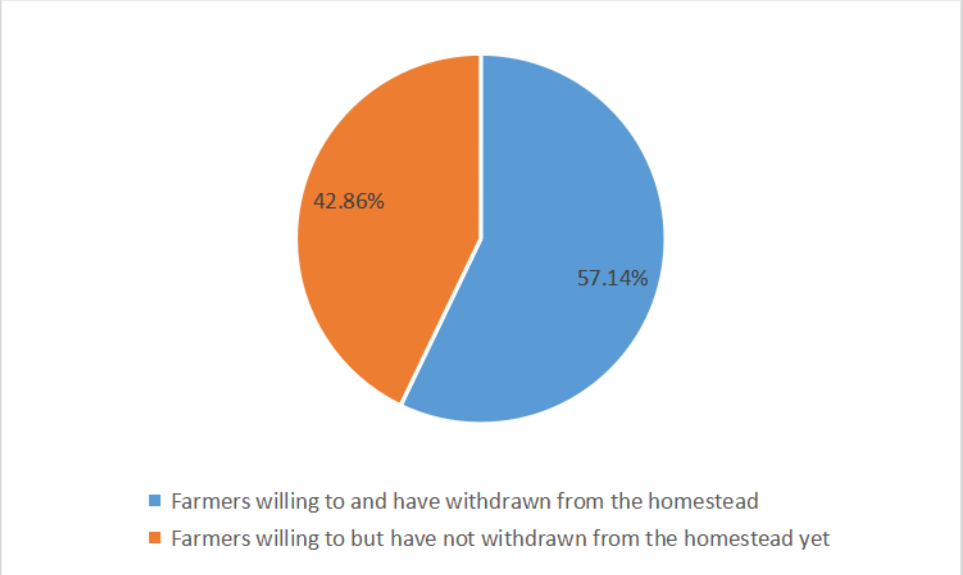

Figure 3. Farmer's willingness and behavior regarding WRH.

Table 9. Regression results on the influence of farmers' social networks on their willingness for WRH.

Variables	B	Standard Error	Wald	*p*	Exp(B)
EMSN	2.829	1.049	7.272	0.007	16.925
EOSN	−2.381	0.684	12.119	0.000	0.092
POSN	1.576	0.641	6.049	0.014	4.835
gen	−0.007	0.281	0.001	0.980	0.993
age	−0.723	0.630	1.316	0.251	0.485
edu	−0.080	0.141	0.321	0.571	0.923
popu	−0.131	0.048	7.554	0.006	0.877
inc	0.020	0.091	0.047	0.829	1.020
hom	−0.052	0.273	0.037	0.847	0.949
zage	0.646	0.215	8.988	0.003	1.908
loca	−0.491	0.286	2.948	0.086	0.612
carea	−0.008	0.010	0.669	0.414	0.992
clz	−0.056	0.234	0.058	0.810	0.945
mec	0.069	0.111	0.384	0.536	1.071
dis	−0.129	0.207	0.388	0.533	0.879
Constant	1.452	3.098	0.220	0.639	4.272

Regarding the impacts of the control variables, the number of family members and the locations of their homesteads are negatively correlated with the farmers' willingness regarding WRH. Instead, the age of homesteads is positively correlated with farmers' willingness. Other control variables have no significant influence on farmers' willingness for WRH.

4.3. Impacts on Farmers' Behavior Regarding WRH

The results in Table 10 show that the economic social network has a significant negative impact on farmers' behavior, while the political and social networks have a significant positive impact on farmers' willingness. Compared to the significant influence of the emotional social network on farmers' willingness for WRH, the influence of the emotional social network on farmers' actual behavior regarding WRH is not significant. This is reasonable given that withdrawal from the homestead is a collective family decision. When

family members discuss WRH, other considerations are influential, such as economic and political interests.

Table 10. Regression results on the influence of farmers' social networks on their behavior in homestead withdrawal.

Variables	B	Standard Error	Wald	*p*	Exp(B)
EMSN	2.103	1.388	2.296	0.130	8.192
EOSN	−3.869	0.978	15.659	0.000	0.021
POSN	3.017	0.883	11.680	0.001	20.429
gen	0.579	0.389	2.213	0.137	1.784
age	−2.147	0.933	5.301	0.021	0.117
edu	−0.473	0.209	5.122	0.024	0.623
popu	−0.135	0.066	4.181	0.041	0.874
inc	−0.029	0.124	0.054	0.816	0.972
hom	−0.421	0.374	1.272	0.259	0.656
zage	1.801	0.403	19.979	0.000	6.055
loca	−2.284	0.388	34.709	0.000	0.102
carea	−0.285	0.089	10.220	0.001	0.752
clz	−0.565	0.343	2.701	0.100	0.569
mec	−0.218	0.152	2.047	0.152	0.804
dis	0.257	0.287	0.804	0.370	1.294
Constant	4.544	4.333	1.099	0.294	94.022

Age has a significant negative correlation with farmers' behavior regarding WRH. Farmers' behavior regarding WRH is negatively affected by farmers' degree of education and the number of family members, the location of homesteads, and the areas of agricultural land. There is a significant positive correlation between the age of a homestead and the behavior regarding homestead withdrawal. Other control variables have no significant influence on farmers' willingness for WRH.

4.4. Impacts on Transition from Farmers' Willingness to Behavior Regarding WRH

The results, as shown in Table 11, show that the effect of the emotional social network on farmers' willingness to leave their homesteads and behavioral transformation was not significant. Individuals with high scores for the economic social network were more likely to be in the group for which exit behavior did not actually occur compared to the actual occurrence of exit behavior. This indicates that economic social networks have a significant negative effect on the transformation of farmers' homestead exit intention and behavior. Individuals with high political social network scores were more likely to be in the group with actual behavior regarding WRH. This indicates that the political social network has a significant positive influence on the transformation of farmers' homestead exit intention and behavior.

Among the control variables, distance from the nearest town was significantly and positively correlated with the transformation of farmers' willingness and behavior to leave their homestead bases; the land area of homestead bases and whether the contracted land was transferred or not were negatively correlated with the transformation of farmers' willingness and behavior to leave their homestead bases. Other control variables did not have significant effects on farmers' willingness to withdraw from their residence bases.

Table 11. Regression analysis on the transition from farmers' willingness to behavior in homestead withdrawal.

	B	Standard Error	Wald	*p*	Exp(B)
EMSN	−1.834	1.536	1.426	0.232	0.160
EOSN	−4.188	0.867	23.320	0.000	0.015
POSN	4.231	0.729	33.711	0.000	68.798
gen	0.452	0.340	1.773	0.183	1.572
age	0.003	0.749	0.000	0.997	1.003
edu	−0.126	0.160	0.622	0.430	0.881
popu	0.052	0.052	1.000	0.317	1.054
inc	0.117	0.108	1.183	0.277	1.125
hom	−0.070	0.322	0.047	0.828	0.932
zarea	−0.582	0.297	3.837	0.050	0.559
zage	−0.144	0.245	0.346	0.556	0.866
loca	0.185	0.358	0.265	0.607	1.203
carea	0.003	0.008	0.118	0.731	1.003
clz	−0.542	0.288	3.553	0.059	0.581
mech	−0.045	0.134	0.115	0.735	0.956
dis	0.534	0.246	4.721	0.030	1.706
Constant	4.408	3.639	1.467	0.226	82.084

5. Discussion

5.1. Main Findings

Farmers' willingness and behavior play an important role in implementing WRH policy. The research analyzes the influence mechanism of farmers' social networks through the binary logit model (BLM). The main findings are summarized as follows.

(1) Farmers' social networks greatly impact on their willingness to withdraw from rural homesteads. Emotional social networks and political social networks positively affect farmers' willingness for WRH, while economic social networks have a negative influence. Chinese society in rural areas is characterized by traditional and local relationships. Emotional social networks not only create a harmonious environment but also provide farmers with protection and a sense of security. In addition, good political relations can help farmers develop a sense of participation and trust in village governance, facilitating farmers' access to information and expression of opinions on WRH. Furthermore, farmers' trust in village committees and village cadres can increase the credibility of WRH policies and increase the willingness to withdraw from their homesteads. Comparatively, since economic social networks can bring economic resources and employment opportunities to farmers, farmers with more economic social networks in villages are more unwilling to withdraw from their homesteads.

(2) Farmers' social networks play a role in affecting their actual behavior regarding WRH. Economic social networks have a negative impact on farmers' behavior regarding WRH, whereas political social networks have a positive impact. Additionally, the impact of emotional social networks is not significant. The findings reveal that farmers tend to make decisions on WRH based on economic situations, and relations with village committees and village cadres.

(3) In the transformation process of farm households' willingness and behavior to leave their homestead bases, the economic social network and political social network are the significant influencing factors. With socio-economic development, many farmers choose to go out to work, diversify their income sources, and increase their family income. Farmers with more money to invest in the houses on their homestead bases are unwilling to leave. At the same time, farmers follow the traditional custom of helping each other, thereby enhancing the relationships between them and enabling them to obtain "funds and other mutual assistance" when they encounter difficulties. The closer and more harmonious the relationship within the village is, the less likely farmers are to withdraw from their homesteads. Generally speaking, local government and village committee propaganda

aimed toward farmers enables them to be more familiar with the rural residential base policy. The more easily they understand the purpose and role of rural residential base withdrawal and compensation, the stronger their willingness to withdraw from rural residential bases with compensation.

(4) There are differences in the effects of the three social networks on farmers' willingness for WRH, behavior regarding WRH, and the transformation of the two. In the stage of generating willingness for WRH, emotional social network, directly affecting farmers' psychology, has a greater impact on farmers' willingness for WRH compared with economic and political social networks. After the willingness for WRH has been generated, the economic and political social networks, which can directly reduce transaction costs and provide practical support, exert greater influence on farmers' actions on WRH. The differentiated impacts of three social networks at different stages of farmers' willingness for WRH have significant implications on effectively implementing targeted policies.

(5) In addition to the core explanatory variables, this paper finds that in the transformation process of farmers' willingness and behavior to leave their homesteads, the size of the homestead, and whether the contracted land is transferred have a negative effect on the transformation from farmers' willingness to withdraw from their homesteads to behavior. Owing to the space requirements for storing farm equipment, farmers prefer to live on their original spacious homesteads compared to their smaller living accommodations in urban or centralized resettlement areas. In addition, there are obvious differences in the value perceptions and functional demands of the homestead in different contexts between farmland transferred out and farmland transferred in. For households transferring out of farmland, most of them are less dependent on agricultural income, have an increasing proportion of non-agricultural income, and have a gradually decreasing connection with the countryside, and they are more willing and financially capable of exiting their homesteads.

5.2. Limitations

It is necessary to study social networks in the context of the Chinese "Differential Mode of Association". However, it is difficult to quantify the variables of social networks, given that the social networks of farmers are complex and multidimensional. Without an agreement on the definition and quantification of social networks, scholars select indicators according to research issues and objects. Even though this paper has measured social networks from a relational perspective, there are still some limitations. Firstly, the concept and measurements of social networks can be further explored. In addition, since the influence mechanism of farmers' social networks on farmers' willingness/behavior regarding WRH is complex, other variables may be included in the future, such as social support, effective participation of farmers, and so on. Moreover, it is necessary to investigate the relationship between farmers' social networks and their strategies of land use at different stages through long-term follow-up investigations.

5.3. Policy Recommendations

Improving the efficiency of land use and promoting rural revitalization are the fundamental goals of homestead reform in China. Based on the findings, farmers' social networks can be used to promote the implementation of WRH.

Firstly, it is vital to expand the scope of communication and cultivate the social networks of farmers. Measures consist of encouraging farmers to participate in village activities and organizing cultural activities. Secondly, it will be helpful to enhance farmers' trust in village committees by expanding channels conveying public opinions. Thirdly, local governments can provide farmers with free training, create employment platforms, and facilitate obtaining small loans for entrepreneurship. Finally, local governments can provide social services for farmers, such as a pension living allowance, basic living security, medical assistance, and educational support.

6. Conclusions

Based on a survey in Cuiping District, Luxian County, Pengshan District of Meishan City and Ziyang, this paper studied the influence of farmers' social networks on their willingness and behavior regarding WRH. A conceptual framework is developed to measure farmers' social networks, which relates to the practices of WRH programs. Although the "acquaintance society" has transitioned into a "semi-acquaintance society" in Chinese rural areas, the impacts of social networks on farmers' life are still profound. The findings indicate that there is a significant causal relationship between farmers' social networks and homestead withdrawal. Farmers' social networks can positively affect their willingness for WRH through enhancing emotional attachment and promoting information dissemination. In the process of farmers' transition from willingness to actual behavior regarding WRH, the impact of subjective emotional social networks decreases, while economic and political social networks exert more influence. The findings reveal that the core mechanism in the transformation from farmers' willingness to action regarding WRH is to reduce the economic constraints and increase incentives.

Author Contributions: Conceptualization, Y.H. and P.T.; methodology, Y.H. and P.T.; software, Y.H.; validation, Y.H. and P.T.; formal analysis, Y.H.; investigation, Y.H. and P.T.; resources, P.T.; data curation, Y.H.; writing—original draft, Y.H. and P.T.; writing—review and editing, Y.H. and P.T.; visualization, Y.H.; supervision, P.T.; project administration, P.T.; funding acquisition, P.T. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the 2021 Project from the Center for Social Development and Social Risk Control of Sichuan University (SR21A12).

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy restrictions.

Acknowledgments: We also thank Shasha Zhang for her contributions, comments, and suggestions.

Conflicts of Interest: The authors declare no conflict of interest.

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