

Impact of Social Capital on Land Arrangement Behavior of Migrant Workers

in China

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ABSTRACT

In China, the land arrangement behavior of over 160 million rural-urban migrant workers is closely related to the optimal allocation of rural land resources and sustainable development of urban and rural areas. Although previous studies show that social capital affects migrant workers' land arrangement behavior, few empirical studies reveal the relationship between them, and the corresponding interventions remain unclear. Using survey data collected in Henan Province, China, and a multinomial logit model, this study empirically analyzes the mechanism behind the impact of social capital on migrant workers' land arrangement behavior from the perspective of social capital. Results illustrate that social capital has a significant impact on the land arrangement behavior of migrant workers. The behavior is significantly correlated with the scale of migrant workers' urban social networks, the degree of urban social trust, and urban belonging. More social capital in urban areas indicates a higher tendency for migrant workers to abandon their land contracting rights and become permanent urban residents. This study reveals the mechanism of social capital affecting migrant workers' land arrangement behavior for other countries facing similar social problems.

KEYWORDS

Social capital; Rural-urban migrant workers; Land management behavior; Land dependence

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1. Introduction

Currently, China is in the mid-to-late stage of urbanization. According to data from the National Bureau of Statistics of China (NBS, 2017), the total number of migrant workers in China (also known as the "floating population") reached 169 million in 2016. Such a large-scale floating population breeds a series of social problems, such as "land abandonment", "vacant villages", and "left-behind children" (Zhao, 1999; Xin et al., 2009; Chen et al., 2014). In fact, although migrant workers have no time and energy to manage their land because of working and living conditions in cities all year round, they are unwilling to completely abandon it. As a result, they find themselves in an incomplete transfer condition under which they can neither completely abandon their land nor integrate into cities. Such a condition brings about three land management methods according to their dependence on land: family farming, land transfer, and abandonment. Accordingly, the optimal allocation of rural land resources and the sustainable development of urban and rural areas in China are directly correlated with migrant workers' land arrangement behavior (Zao, 2003; Li et al., 2014; Yan et al., 2017). Some researchers argue that migrant workers' land arrangement behavior in China is determined by its household registration (Hukou) system and the rural land system (the household responsibility system) (Feng et al., 2010; Kong & Unger, 2013). They suggest that the social system should be improved to provide guidance on the land arrangement for migrant workers. In this context, the Chinese government relaxed control over the hukou system; migrant workers with stable jobs in urban areas were even encouraged to obtain urban hukou and officially become urban residents under the condition of abandoning their land contracting rights (Yan et al., 2014). Additionally, to achieve large-scale agricultural production and management, some relevant policies were issued to improve the land circulation system. For example, the "three rights separation policy" allowed different bodies to obtain the ownership of agricultural land, the land contracting right, and the land operation right. While these policies play a certain positive role, social problems such as land abandonment still universally exist in China. Some scholars have analyzed migrant workers' behavior on the land arrangement from the perspective of their urban integration ability (Keister, 2009; Xie & Jiang, 2016). They suggest that increasing migrant workers' social capital may affect their behavior. However, these studies are based on theoretical discussions, and consequently, the relevant conclusions failed to be empirically supported, making it difficult to validate solutions. As the migration of rural surplus labor to urban areas in China is at a critical stage, it is of great importance and necessity to study the core factors affecting migrant workers' land arrangement behavior and find corresponding effective interventions.

Social capital, which encompasses the institutions, relationships, attitudes, and values that impact migrant workers' behavior, is an important element in the production of migrant workers. The land arrangement behavior of migrant workers is essentially based on their costs and benefits, which is the combination of economic and social behavior influenced by social capital (Granovetter, 1985). This suggests that land arrangement behavior is closely related to social capital. However, few studies have addressed this issue. Previous research results are mostly theoretical deductions without empirical support, and the corresponding effective interventions and solutions remain unclear. Therefore, this study focuses on the following questions: Does social capital have an impact on the land arrangement behavior of migrant workers? If so, what interventions can be used to achieve the complete transfer of migrant workers from rural to urban areas and the large-scale production and management of agricultural land? To answer these questions, this study built a multinomial logit model based on data collected in Henan Province, China, to reveal the mechanism behind the effect of social capital on migrant workers' land arrangement behavior (family farming, land transfer, and abandonment) from three aspects: the scale of urban social networks, the degree of urban social trust, and urban belonging. Meanwhile, this study also proposes corresponding interventions to promote the sustainable development of both rural and urban areas in China.

The structure of the study is arranged as follows: In Part 2, the previous literature is reviewed, and hypotheses about social capital affecting the land arrangement behavior of migrant workers are proposed. In Part 3, data

sources, research processes, definitions of variables, and descriptive statistics are introduced. In Part 4, the empirical results and the analysis of verifying hypotheses are presented. In Part 5, based on the empirical test results, the corresponding interventions are discussed. Finally, conclusions and research prospects are proposed in Part 6.

2. Literature review and research hypothesis

2.1. Social capital and migrant workers' land arrangement behavior

The social capital of migrant workers refers to the networks, norms, and trust acquired through long-term social interactions that can increase the probability of success of targeted actions. Due to the imperfect labor market in China and the "difference sequence pattern" of social networks (Knight & Yueh, 2008), social capital becomes essential for migrant workers to survive and develop in urban areas (Antonio, 2004). Migrant workers who lack urban social capital are mainly engaged in temporary low-income manual labor, which constrains the accumulation of their human capital and strengthens their dependence on rural land (Wang et al., 2010; Meng, 2012). Using path analysis, Giusta & Kambhampati (2006) found that the increased urban social capital of migrant workers helped them better integrate into cities (Giusta & Kambhampati, 2006). With more urban social capital, migrant workers have more opportunities to obtain stable jobs and higher non-agricultural incomes, and they also have easier access to enjoy public services (Diop, 2017), which contributes to reducing their dependence on the land. This indicates that social capital can affect migrant workers' dependence on the land and further intervene in their land management behavior. Accordingly, migrant workers with insufficient urban social capital heavily rely on their land and usually choose family farming. Conversely, with more social capital, they become less dependent on their land and turn to land transfer. Furthermore, they even abandon their land after obtaining enormous and various social capital. In this regard, we propose the following hypothesis:

Hypothesis 1: There is a significant correlation between social capital and migrant workers' land arrangement behavior.

2.2. Scale of urban social networks and migrant workers' land arrangement behavior

Social networks influence people's behavior through connected social resources. Unlike in Western countries, in China, people's economic behaviors are deeply embedded in various social relationships, and acquaintances are trusted and utilized to achieve long-term, stable benefits (Coleman, 1988). Patel et al. (2018) argued for the benefit of the reconstruction of social networks after migrant workers transferred to urban areas to obtain urban resources (Patel et al., 2018). With the expansion of urban social networks, migrant workers obtain more opportunities to secure stable jobs in cities and rely less on their rural land, making them more likely to adopt land transfer and abandonment. Conversely, migrant workers with small social networks in urban areas still rely heavily on their social relations built in rural areas and are usually employed as temporary manual laborers with low and unstable income. Consequently, they tend to choose family farming. Therefore, the following hypothesis is proposed:

Hypothesis 2: The scale of migrant workers' urban social networks has a significant impact on their land arrangement behavior.

2.3. Urban social trust and migrant workers' land arrangement behavior

Urban social trust refers to the social trust formed by new social networks built between migrant workers and original urban residents (Diop et al., 2017). Generally, the interaction frequency between migrant workers and their urban friends reflects the degree of urban social trust. Due to China's long-term implementation of the hukou system,

urban residents often have a sense of superiority and believe that the city is a city belonging to urban residents. Even if they are not as good as migrant workers in some aspects, they still show discrimination against migrant workers subconsciously and are unwilling to build a trusted friendship with them (Wang & Wu, 2011). Consequently, most migrant workers build urban social networks mainly with other migrant workers and this kind of "homogeneous" interaction among them gives them a sense of protection in terms of their farmer ideology, so they tend to retain land contracting rights (Liu et al., 2013). Through empirical study, Tong (2012) constructed a logit model based on survey data of 1446 migrant workers in Shanghai, China. They found that migrant workers experienced a significant increase in income and treatment after they established friendships with urban residents who showed strong heterogeneity with them (Tong, et al., 2012). A higher frequency of migrant workers' contact with their urban friends indicates more opportunities they gain for development in urban areas, which is conducive to their integration into cities and social status improvement (Knight & Yueh, 2008). Obviously, when migrant workers build more heterogeneous and trusted relationships in urban areas, they become less dependent on rural land and prefer to transfer or abandon it. The following hypothesis is proposed:

Hypothesis 3: The degree of migrant workers' urban social trust affects their land arrangement behavior.

2.4. Urban belonging of migrant workers and their land arrangement behavior

Urban belonging refers to the psychological performance of migrant workers' demarcation, identification, and maintenance of the city they migrate to. It is usually reflected by the frequency of participation in urban community activities (Davids & Houte, 2008). Migrant workers who are often involved in urban community activities have built urban social belonging and believe that security and comfort in urban areas have surpassed those in rural areas. An increasing number of families migrate to urban areas with all their family members because of the downsized family caused by the family planning policy and descendants of migrant workers born and growing up without agricultural experience (Yan et al., 2014). This kind of migration with all family members is quite conducive to building new social networks and building urban belonging for migrant workers. It also contributes to enhancing the social capital of their descendants through the inheritance and ascription of social capital, which can eliminate their dependence on rural land and the probability of family farming. Wei and Gao (2016) found a significant difference between migrant workers and their descendants with respect to their attitude toward rural land. These descendants are reluctant to return to rural areas and work in agricultural activities. Instead, they are more willing to settle in urban areas and give up their land contracting rights (Wei & Gao, 2016). Since they are born and raised in urban areas, these descendants feel unfamiliar with the countryside, and they have identified themselves as urban residents. As a result, migrant workers who have built urban belonging are unwilling to move back to rural areas, nor do they accept the high costs of the movement (Davids & Houte, 2008). Therefore, they usually decide to adopt land transfer or abandonment to arrange their land. Accordingly, we propose the following hypothesis:

Hypothesis 4: Whether migrant workers have built urban belonging or not affects their land arrangement behavior.

Based on the relevant literature review and theoretical analysis above, this study built a model reflecting the relevant factors affecting migrant workers' land arrangement behavior as shown in Fig. 1.

3. Data, variables and methodology

3.1. Methodology

Based on previous hypotheses and related research, we constructed equations for an empirical test to validate the above hypotheses. First, Equations (1), (2), and (3) were constructed to reflect the relationship between benefits



Figure 1. The theoretical framework model reflecting the mechanism of factors affecting migrant workers' land arrangement behavior.

and costs created by different land arrangement methods. Generally, by analyzing the net income from agricultural activities and the degree of dependence on rural land based on self-social and other capital, migrant workers usually choose the land arrangement method which creates the largest net income:

$$NP_{ij} = TR_{ij} - TC_{ij} \tag{1}$$

$$TR_{ij} = AOR_{ij} + SIR_{ij} + SOR_{ij}$$
⁽²⁾

$$TC_{ij} = AOC_{ij} + SIC_{ij} + OSC_{ij}$$
(3)

In Equation (1), *i* represents individual migrant workers who migrate to cities, and j = 1,2, and 3 refer to family farming, land transfer and abandonment, respectively; TR_{ij} , TC_{ij} and NP_{ij} represent total revenues, total costs, and net incomes created by different land arrangement methods, respectively. In Equation (2), TR_{ij} (total revenues of rural land) consists of three parts: AOR_{ij} (economic benefits from agricultural production), SIR_{ij} (social security benefits) and OSR_{ij} (other subsidiary benefits). In Equation (3), TC_{ij} (total costs of rural land) comprises of three aspects: AOC_{ij} (costs required for agricultural production activities), SIC_{ij} (costs for social security benefits), and OSC_{ij} (costs associated with the other subsidiary benefits).

Results were analyzed by the multinomial logit model using SPSS22.0. The above three land arrangement behaviors do not cross each other and there is no priority order, which is suitable for using the multinomial logit model to study factors affecting migrant workers' land arrangement behavior. The model is defined as follows:

$$NP_{ij} = X_{ij}\beta + \varepsilon_{ij} \tag{4}$$

where X_{ij} is a group of variables correlated with migrant workers' land arrangement behavior; β represents the estimated coefficient; and ε_{ij} is the error term. If migrant worker *i* chooses *j* among the above three land arrangement methods, then *j* has the maximum NP_{ij} . Hence, the statistical model probability of choosing *j* is:

$$Prob(NP_{ij} > NP_{ik} \forall k \neq j, k = 1, 2, 3) = \frac{e^{X_{ij}\beta}}{\sum_{j=1}^{3} e^{X_{ij}\beta}} X_{ij}\beta + \varepsilon_{ij}$$
(5)

For the maximum likelihood estimation of Equation (5), we obtained an estimated coefficient β . In this study, family farming was chosen as the control group. The estimated coefficient β of the explanatory variables reflects the tendency of migrant workers to choose land transfer or abandonment compared with family farming (Hausman & McFadden, 1981).

3.2. Variable selection and measure

Five scales were involved in our questionnaire: the scale of migrant workers' land arrangement behavior, social capital scale, human capital scale, employment characteristics scale, and family characteristics scale. As shown in Table 1, the scales used in the final survey were based on existing findings and revised according to the results from the preliminary research.

3.2.1. Dependent variables: migrant workers' land arrangement behavior

Currently, under the household responsibility system in China, land ownership belongs to the Chinese government and collective, while farmers only have three options for land arrangement. The first is family farming, which means that family members left behind in rural homes are responsible for land farming based on the division of family responsibilities. The second is land transfer, which means that migrant workers transfer their land to others with or without asking for rental while retaining the contracting rights. Finally, there is abandonment, which means that the land is left idle and uncultivated. Based on the current situation of land arrangement and previous studies (Feng et al., 2010; Xie & Jiang, 2016), the above three land arrangement behaviors were regarded as dependent variables.

3.2.2. Independent variables: social capital

At present, the social capital scale proposed by the World Bank is recognized by most scholars due to its relatively normative conceptual framework. The measurement of social capital mainly looks for alternative indicators from the three basic components of networks, trust, and regulation (Burt, 2000; Abdul-Hakim et al., 2010; Engbers et al., 2017; Patel et al., 2018). Based on the World Bank's measurement scale of social capital and previous literature, social capital was divided into three dimensions in this study: the scale of urban social networks, urban social trust, and urban belonging, which were used as variables in Equation (4). These three dimensions were measured by asking questions such as "the number of relatives and friends who have moved to live in cities and keep frequent interactions with you", "the average times you interact with new friends after migrating to cities on a monthly basis", and "whether you regularly participate in urban community activities during your stay in urban areas or not".

3.2.3. Control variables

Based on the results of Xie and Jiang (2016), family characteristics, employment characteristics, and human capital were considered as control variables (Xie & Jiang, 2016). Family characteristic variables consist of family size and land per capita, while employment characteristic variables comprise the wage level and job stability of migrant workers in urban areas. The natural logarithm of the wage variable (ln-Wage) was adopted to achieve normalization. Human capital characteristic is defined as the migrant workers' gender, age, education level, and vocational skill level.

Variable Types	Variable Names	Variable Definitions
Dependent	Land management	Family farming
	methods	Land transfer
variables		Abandonment
Independent variables		The size of urban social networks: the number of relatives and friends who have moved to live in the city and keep frequent interactions with them
	Social capital	Urban social trust: the average number of times you interact with new friends after migrating to cities on a monthly basis
		Urban belonging: whether you regularly participate in urban community activities during your stay in urban areas or not
	Family	Family size
	characteristics	Land per capita
Control variables	Employment	Wage level in cities
	characteristics	Job stability
		Gender
	Human capital characteristics	Age
		Education level
		Vocational skill level

|--|

3.3. Data sources

Henan Province, the most typical agricultural province in China, has the largest population of over 100 million with a significant number of migrant workers. The data for this study were collected from February to March 2017 in five cities in Henan Province, including Zhengzhou, Anyang, Zhoukou, Xinyang, and Sanmenxia. A total of 500 questionnaires were distributed by trained investigators using the quota sampling method, with 100 questionnaires for each city. Three economically developed areas (industrial, commercial, and residential areas) where migrant workers were concentrated were selected for the survey. After withdrawing 38 invalid questionnaires that showed no rural land or had over two blank answers, 477 valid questionnaires were collected, representing a validity rate of 90%.

3.4. Summary statistics

Per capita land	Percentage (%)	Land arrangement	Percentage (%)
0.5 mu or less	18.60% family farming		59.65%
0.5-1 mu	53.21%	land transfer	31.68%
1-2 mu	23.57%	abandonment	8.67%
2 mu or more			
Future life expectation		Percentage (%)	
completely go out of rural a	zen	18.73%	
retain the rights and interes	48.69%		
worked in the city to earn money and went back to rural life eventually			32.58%

Table 2. The statistical characteristics of the surveyed samples.

The results of the survey are shown in Table 2. According to the results, the average family size was 4.31 people, and the land per capita for migrant workers was 1.01 mu (a unit commonly used in China, where 15 mu is equal to one hectare). Those with less than 1 mu represented 78.81% of the sample, indicating that migrant workers own a relatively small amount of land. Currently, the net income from cultivating agricultural crops (such as wheat,

soybeans, and corn) is less than USD 1000 per mu, which is significantly lower than that from non-agricultural income. In terms of land arrangement methods, 59.65% of migrant workers preferred family farming, followed by land transfer, which accounted for 31.68%, while only 8.67% of them chose abandonment. This shows that most migrant workers prefer to retain the rights and interests of their land, which is consistent with the incomplete transfer of migrant workers in China (Jin & Deininger, 2009). Table 3 presents the definitions and descriptive statistics for the independent variables.

Variable	Definition	Mean	S.D.	Min	Max
Scale of urban social networks	The number of relatives and friends in the urban	13	0.851	0	25
Urban social trust	The monthly number of times interacting with urban friends	5	0.413	0	30
Urban belonging	Yes = 1, no = 0	0.56	0.372	0	1
Family size	Family population	4.876	1.303	2	9
Land per capita	Land quantity/family population	1.011	0.767	0.031	7.5
Non-agricultural wage level	Non-agricultural wage (log)	2.983	0.691	0.54	5.84
Non-agricultural job stability	Yes = 1, no = 0	0.641	0.482	0	1
Gender	Female = 1, male = 0	0.621	0.486	0	1
Age					
20 and below	Yes = 1, no = 0	0.172	0.385	0	1
21-30	Yes = 1, no = 0	0.425	0.489	0	1
31-40	Yes = 1, no = 0	0.251	0.433	0	1
40 and above	Yes = 1, no = 0	0.156	0.357	0	1
Education level					
Elementary school and below	Yes = 1, no = 0	0.181	0.411	0	1
Middle school	Yes = 1, no = 0	0.467	0.501	0	1
High school	Yes = 1, no = 0	0.265	0.453	0	1
Associated degree and above	Yes = 1, no = 0	0.095	0.293	0	
Vocational skill level					1
No skill	Yes = 1, no = 0	0.305	0.431	0	1
Basic skill	Yes = 1, no =0	0.285	0.456	0	1
Mid & high-level skill	Yes = 1, no = 0	0.511	0.571	0	1

 Table 3. Definitions and descriptive statistics of independent variables.

4. Results and Analysis

4.1. Analysis of the reliability and validity of variables

Cronbach's α coefficient was adopted to examine the internal consistency reliability of measurement scales. As shown in Table 4, the Cronbach's α coefficients of the land arrangement behavior scale and social capital scale were 0.936 and 0.941, respectively. The Cronbach's α coefficients of the corresponding dimensions varied from 0.879 to 0.957. All Cronbach's α coefficients were higher than the lowest acceptable level of 0.7, indicating the high internal consistency reliability of the measurement scales used in this study.

Confirmatory factor analysis was applied to analyze the validity of the questionnaire data. According to the analysis results shown in Table 5, the X2/DF of each latent variable was close to 2; AGFI, CFI, and TLI were all above or close to 0.9; RMSEA and RMR were less than 0.08 and 1, respectively. All compatibility indices reached an acceptable or even ideal standard, indicating good construct validity between the two potential variables of land arrangement behavior and social capital.

Variables	Dimensions	Cronbach α coefficients	
	Family farming	0.913	
Migrant workers' land	Land transfer	0.957	0.936
allangement benavior	abandonment	0.932	
	The size of urban social capital	0.921	
Social capital	The degree of urban social trust	0.938	0.941
	Urban belonging	0.879	

Table 4. The reliability coefficients of the measurement scale.

Table 5. The confirmatory factor analysis on latent variables.

	X ² /DF	AGFI	CFI	TLI	RMSEA	RMR
Migrant workers' land arrangement behavior	2.65	0.916	0.923	0.919	0.058	0.062
Social capital	1.781	0.837	0.961	0.906	0.053	0.059

4.2. Hypothesis Test

In this study, family farming was considered the control group in Equation (5). To avoid multicollinearity, the three dimensions of social capital were introduced into the model one by one. The results estimated by the model are shown in Tables 6, 7, and 8, respectively. The log-likelihood, chi-square, and R2 values of the model all showed a good regression effect. Therefore, the model is considered significant overall.

In terms of the scale of urban social networks: Compared with family farming, the number of urban relatives and friends of migrant workers shows a significantly positive correlation with both land transfer and abandonment. With other variables controlled, land transfer probability and abandonment probability are likely to experience a significant increase by 76% and 55%, respectively, at the significance levels of 1% and 5%, if the relatives or friends of migrant workers in urban areas increase by one. This indicates that migrant workers with more relatives and friends in urban areas, that is, the larger the scale of the urban social networks, the more they tend to transfer or abandon their land, which supports both Hypothesis 1 and Hypothesis 2.

Urban social trust: Compared to family farming, the monthly number of interactions with urban friends shows a significantly positive correlation with land transfer and abandonment. With other variables controlled, the probability of land transfer and abandonment is likely to increase significantly by 83% and 91% at the significance levels of 1% and 5%, respectively, with an increase of one in the interaction frequency. This suggests that the more monthly interactions migrant workers have with urban friends, the higher the degree of trust towards urban society, and the more likely they are to choose land transfer or abandonment, which supports Hypothesis 1 and Hypothesis 3.

Urban belonging: Compared with family farming, there is a significant negative correlation between the frequency of participation in urban community activities and both land transfer and abandonment. With other variables controlled, migrant workers who did not participate frequently in urban community activities had a significantly lower probability of choosing land transfer or abandonment by 78.9% and 89.7% at the significance level of 1%, respectively, compared to those who frequently participated in urban community activities. In other words, migrant workers who seldom participate in urban community activities have a higher tendency to choose family farming. Obviously, migrant workers who often participate in urban community activities and form urban belonging are inclined to abandon and transfer land, which supports Hypothesis 1 and Hypothesis 4.

5. Discussion

Based on the above empirical test results, all four hypotheses proposed in our study have been validated, and the results show that social capital plays a crucial role in migrant workers' land arrangement behavior. This

behavior is significantly correlated with the scale of migrant workers' urban social networks, the degree of urban social trust, and urban belonging. Thus, migrant workers' land arrangement behavior can be effectively influenced by social capital.

Table 6. The multinomial logit analysis on the impact of urban social trust on migrant workers' land arrangement
behavior.

The impact of social capital on migrant workers' land arrangement behavior		Land transfer: family farming		Abandonment: family farming		
		Coefficient	Odds ratio	Coefficient	Odds ratio	
Urban social trust	The monthly number of times interacting with urban friends	0.926**	1.83	0.807***	1.91	
Family	Family size	-0.189*	0.86	-0.357***	0.733	
characteristics	Land per capita	-0.563***	0.591	-1.062***	0.363	
Employment	non-agricultural wage	0.357**	1.395	0.363*	1.437	
characteristics	Stable non-agricultural employment (Yes)					
	No	-0.256*	0.781	-0.115*	0.952	
Human capital	Gender(male)					
The impact of socia behavior Urban social trust Family characteristics Employment characteristics Human capital characteristics Model test	Female	0.351	1.428	0.139	1.141	
	Age (40 and above)					
	20 and below	1.382	0.257	-0.288	0.752	
	21-30	-0.660	0.521	0.197	1.216	
	31-40	-0.835*	0.453	0.089	1.092	
	Education (associates degree or above)					
	Elementary school and below	-1.061	0.352	-0.137	1.156	
	Middle school	-0.767*	0.483	-0.321	0.813	
	High school	-0.158	0.820	0.133	1.163	
	Vocational skill level (mid $\&$ high-level skills)					
	No skills	1.112**	2.951	1.129**	3.131	
	Basic skills	0.237	1.275	0.327	1.361	
Model test	Constant	0.657		0.012		
	Log likelihood	346.855		346.855		
	Chi-square value	126.697		126.697		
	Prob>chi2	0.00	0.0000		0.0000	
	Pseudo R2	0.372		0.372		

Notes: Control group variables are listed in parentheses. Statistical significance at the 1%, 5% and 10% levels is denoted by ***, ** and *, respectively.

Firstly, there is a significant correlation between the scale of urban social networks of rural migrant workers and their land arrangement behavior (Table 6). The larger the urban social networks of migrant workers, the more likely they are to adopt land transfer and abandonment, while those with smaller social networks tend to prefer retaining land contracting rights and family farming. This result verifies the conclusion of Jin & Deininger (2009), and suggests that the government should pay close attention to the scale of migrant workers' urban social networks and create favorable conditions for them to expand their social networks in urban areas, such as establishing platforms for migrant workers to make friends, play sports, and communicate with others.

Secondly, there is a significant correlation between the degree of migrant workers' urban social trust and their land arrangement behavior (Table 7). The stronger the urban social trust migrant workers have, the more likely they are to adopt transfer or abandon the land, while those with weaker trust tend to choose family farming. This result expands on the conclusions of Chen et al. (2014) and suggests that the government should establish urban social trust for migrant workers and provide them with equal social welfare and development opportunities.

The impact of social capital on migrant workers' land arrangement behavior		Land transfer: family farming		Abandonment: family farming		
		Coefficient	Odds ratio	Coefficient	Odds ratio	
Urban belonging	Frequent participation in urban community activities (Yes)					
	No	-0.567***	0.211	-0.584***	0.103	
Family	Family size	-0.186*	0.83	-0.343***	0.71	
characteristics	Land per capita	-0.540***	0.583	-1.047***	0.351	
Employment	non-agricultural wage	0.335**	1.398	0.363*	1.437	
characteristics	Stable non-agricultural employment (Yes)					
	No	-0.256*	0.774	-0.07*	0.932	
Human capital	Gender (male)					
characteristics	Female	0.346	1.413	0.128	1.137	
	Age (40 and above)					
	20 and below	1.376	0.253	-0.294	0.745	
	21-30	-0.653	0.521	0.198	1.219	
	31-40	-0.823*	0.439	0.08	1.084	
	Education (associates degree or above)					
	Elementary school and below	-1.059	0.347	-0.145	1.157	
	Middle school	-0.753*	0.471	-0.235	0.791	
	High school	-0.149	0.862	0.11	1.116	
	Vocational skill level (mid & high-level skills)					
	No skills	1.091**	2.978	1.138**	3.121	
	Basic skills	0.216	1.241	0.307	1.36	
Model test	Constant	0.62	14	0.009		
	Log likelihood	369.796		369.796		
	Chi-square value	110.748		110.748		
	Prob>chi2	0.00	00	0.00	0000	
	Pseudo R2	0.366		0.366		

Table 7. The multinomial logit analysis on the impact of urban belonging on migrant workers' land arrangemer	nt
behavior.	

Notes: Control group variables are listed in parentheses. Statistical significance at the 1%, 5% and 10% levels is denoted by ***, ** and *, respectively.

Thirdly, there is a significant correlation between the urban belonging of migrant workers and their land arrangement behavior (Table 8). Migrant workers who feel a sense of belonging in cities are more likely to choose land transfer and abandonment, while those who do not identify as members of cities tend to adopt family farming. This result is consistent with the conclusion of Wei & Gao (2016) and suggests that favorable conditions should be created for migrant workers who have formed urban belonging to promote their complete transfer.

In summary, the urban social capital of migrant workers has a decisive impact on their land arrangement behavior. The implementation of intervention policies in social capital is conducive to expanding migrant workers' urban social networks, establishing their urban social trust, and forming urban belonging. Additionally, it also contributes to the complete transfer of China's rural surplus labor to urban areas and the optimal allocation of rural resources, which is an effective way to promote the sustainable development of urban and rural areas in China and achieve win-win objectives for all stakeholders.

6. Conclusion

This study discussed the correlation between social capital and migrant workers' land arrangement behavior by building a multinomial logit model based on theoretical hypotheses and analyzing the questionnaire data collected from February to March 2017 in Henan Province, China. The study empirically analyzed the mechanism of the impact of social capital on migrant workers' land arrangement behavior. The conclusions are presented as follows:

(1) There is a significant correlation between urban social capital and migrant workers' land arrangement behavior; both the behavior and their dependence on land are determined by urban social capital.

(2) There are correlations between migrant workers' land arrangement behavior and the scale of their urban social networks, urban social trust, and urban belonging. Larger urban social networks, stronger urban social trust, and the formation of urban belonging are beneficial to migrant workers in obtaining development opportunities, integrating into urban areas, and reducing their dependence on land.

(3) The process of migrant workers becoming urban residents is the reconstruction of urban social capital. The first step is to transfer their initial social networks to urban areas, followed by developing new social networks and establishing urban trust, after which they can finally integrate themselves into the city and form a sense of belonging. In this process, migrant workers gradually reduce their dependence on the land, and their decisions on land arrangement change from family farming to land transfer, and eventually to abandonment when land becomes their living expense. Ultimately, they give up land contracting rights to become urban residents. For this reason, this study considers increasing migrant workers' urban social capital as an effective intervention in promoting their complete transfer to urban areas and the optimal allocation of rural resources in China.

This study analyzed the mechanism behind the impact of social capital on migrant workers' land arrangement behavior from the perspective of social capital. The conclusions have important theoretical significance and practical value with respect to carrying out effective interventions in migrant workers' land arrangement behavior, promoting their complete transfer to urban areas, and optimizing rural land resources. However, this study also inevitably has limitations. Future studies could be conducted in the following two aspects. First, cultural factors should be taken into consideration to further analyze the mechanism behind the impact of social capital on migrant workers' land arrangement behavior. Second, similar surveys should be conducted in other provinces and cities in future studies to enhance the universality of the conclusions.

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Declaration of Competing Interest

All the authors claim that the manuscript is completely original. The authors also declare no conflict of interest.

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