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Influences of the Transaction Intention of Farmland Transfer under Information Asymmetry: An Empirical Study of 1100 Questionnaires from China

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Abstract: The original intention of the tripartite rural land entitlement system was to activate farmland management rights and improve the efficiency of land element allocation. However, information asymmetry is prevalent in a market with imperfect competition. We analyzed the key factors affecting farmland transfer transactions with the structural equation model using survey data from farmers in five major grain-producing counties in Henan province, China. The purpose of our study was to investigate how these factors contribute to the avoidance of a "lemon market" emerging in farmland transfer and can promote the market regulation of farmland transfer operations. This study was conducted under the framework of asymmetric theory analysis with the purpose of discussing the fundamental forces driving farmland transfer transactions. The results show that (1) the economic characteristics of farmers play an important role in the formation of farmland transfer transactions, and their impacts on the willingness to transfer farmland in and out were 0.69 and 0.97, respectively; and (2) among the observable variables, the satisfaction degree of agricultural technology training and the proportion of non-agricultural income had a strong ability to explain the choice of farmland transfer behavior, and the factors that strongly impacted farmland transfer out behavior were physical condition and farmland quality. Thus, we recommend establishing a detailed land transfer pricing system based on the background quality of farmland and increasing the agricultural science and technology education, focusing on dredging information transmission channels to fulfill the new requirements of the three-right separation system on the government's supervision of farmland transfer to promote effective links between small-scale peasant economies and modern agriculture.

Keywords: farmland transfer; structural equation model; asymmetric information; influencing factors; Henan

1. Introduction

Since the founding of the People's Republic of China, China's land system has undergone three stages of development: The first stage was from 1949 to 1956. On 1st of October 1949, the Communist Party of China (CPC) declared the inauguration of the People's Republic of China (PRC), and all private enterprises were nationalized within the state sector of the economy. With the implementation of land reform, the state transferred the ownership of land from individual farmers to collectives [1]. The second stage occurred from 1956 to 1978, when the state practiced farmland commune ownership. No major changes in this policy occurred until 1978—which was when the nation adopted its third constitution, and in turn led to the legalization of small businesses. Small business developed in rural areas, as well as cities. Chinese capitalism was born in rural areas, when Deng Xiaoping permitted the dismantling

of collective agriculture [1]. The third stage begins in 1978 and take us to the present. After the Third Plenary Session of the Eleventh Party Central Committee, the household contract responsibility system was gradually promoted throughout the country. Since 1978, farmers were allowed to cultivate private plots and sell surplus produce. The second rural reform was mainly in the form of the family contracting responsibility system, with remuneration linked to output. China's family contracting responsibility system has improved agricultural productivity and created a large number of surplus agricultural workers in rural areas. Officially recognized as "specialized households", families were granted permission to keep sideline income from other industries [1]. One of the most significant achievements in China's economic reform is the emergence and development of rural township and village enterprises (TVEs). TVEs are independent business entities that are accustomed to the rule of the market [2]. In addition, the rural surplus labor force has been continuously flowing into cities and towns, providing a strong impetus for urbanization. From 1949 to 2018, more than 600 million people in China's agricultural labor force moved to cities and towns. At present, China is experiencing a period of rising urbanization development, which is encouraging the rural population to flow to cities and towns. Many farmers arrange certain family members to move to cities to engage in non-agricultural labor. The wage of farmers increases every year, and the absolute amount exceeds the family operating income, which has resulted in a decline in the number of smallholder farmers. The smallholder farmers in China account for over 90% of the agricultural practitioners and are the most important subjects of agricultural production. However, in the process of urbanization, small- and medium-sized farmers are facing many difficulties and uncertainties, which call for transformation and upgrades. In many parts of the country, especially the less developed rural areas in the central and western regions, a steady stream of agricultural labor population has left the villages for cities, leading to the aging of agricultural labor and agricultural operation.

The malpractices of small-scale decentralized management are becoming increasingly obvious. China has issued a series of policies and regulations to promote the participation of contracted agricultural land transfer. China innovatively proposed the "separation of three-right" in rural land, which provides a legal basis for the circulation of agricultural land. The rural land division system refers to the separation of the ownership, use right and management right of rural land. The ownership of rural farmland is owned by collectives—except for those that are owned by the state, as stipulated by law. The right to the use of rural land belongs to farmer collectives or individuals. The right to manage rural land refers to the right to manage contracted land acquired by the contractor and is a kind of usufructuary right. The farmland transfer in this study refers to the leasing of management rights by contracted farmers to other operating entities, and the leasing period can be either short-term or long-term. The transfer of contracted agricultural land will gradually become a common practice. According to official data released by the Ministry of Agriculture, as of June 2017, the circulation area of contracted land in rural areas in China was 497 million acres (accounting for 24.54% of the total area of cultivated land contracted by households). Statistics of Henan Provincial Department of Agriculture showed that by the end of 2017, the circulation area of rural contracted land in Henan accounted for 38.5% of the area of household-contracted cultivated land.

Henan is a major agricultural province in China, with many advantages in the development of modern agriculture. The effective integration of agricultural land and the improvement of farmers' management scale are requirements for the development of modern agriculture in China in the new era. However, the link between Chinese cultural values—mainly Confucian values—and entrepreneurial attributes, was found to be very tenuous. Moreover, it is still a huge challenge to interpret it within a Western framework [2]. Just as in the spirit of Chinese capitalism, Confucianism established a moral code for the Chinese; ethics are related to behavior and are mainly applicable to interpersonal relationships or acquaintances [3]. At present, the transfer of farmland management right is mostly spontaneous and mainly carried out among acquaintances. The interaction of quality differences and uncertainty may explain important institutions of the market. In some cases, governmental intervention may increase the welfare of all parties [4]. Therefore, China's current farmland transfer

system is in urgent need of further improvement. Most of the farmland transfer is spontaneous, and village collectives lead some of it. There is no database of land quality maps that are freely available, and there are no farmland transaction price appraisers and no intermediaries. For example, the transferees cannot accurately obtain quality information about the farmland, and the transferor cannot know the actual use of the farmland transferred by the transferees. Some transferees even use the farmland as construction land. The information on both sides of the farmland transfer transaction lacks transparency, so an intermediary is needed to provide information services and regulate the behavior of both parties. The farmland transfer transaction information was generally roughly recorded by the township government, and standardized intermediary organizations to provide transaction information to both parties are lacking.

Information asymmetry is ubiquitous in market economic activities. Incomplete farmland transfer information may prevent the smooth progress of farmland transfer, that is, the subject of farmland transfer will selectively retain the information acquired by itself under the drive of interests, leading to the reverse behavior choice of the subject of farmland transfer or moral hazard of the subject of farmland transfer [5,6]. That is, the owners whose cultivated land quality is higher than the average level of the market do not want to leave the market at a low price, leading to the dilemma of a "lemon" in the farmland transfer market. Information asymmetry in an incomplete competitive market may become an important limiting condition affecting farmers' farmland transfer, but a perfect system can avoid this risk. In this context, when using information economics principles to identify the key factors that affect the willingness of the relevant subjects of agricultural land transfer and the targeted guidance to achieve agricultural land management, healthy circulation has important practical significance. The information in the transfer of agricultural land is asymmetric and insufficient, and the smooth flow of an information channel is an important condition to ensure the smooth transfer of agricultural land.

The research on farmland transfer in other countries has mainly focused on the rules of farmland transaction and the transmission of transaction information, for example, Feder and Feeny showed that the main reason hindering market transactions is that the farmland information of farmers cannot be transmitted to the market in time [7]. Levin et al. showed that a large amount of asymmetric information may not reduce the volume of market transactions, and that market prices have an important impact on farmland transactions [8]. Bellemare studies of the Malagasy agricultural land market and found that land leases and tenure contracts were the main factors affecting farmers' land transactions [9]. Deininger et al. and Jin et al. reported that farmers with low agricultural production capacity are more likely to move off of agricultural land [10,11]. Thus, what factors affect the transaction of farmland transfer in China? Domestic scholars mostly considered farmers' willingness to transfer farmland from the perspective of farmers' cognition [12,13], the property right system [14], and farmers' differentiation [15,16]. The observable variables selected mainly included the age of the head of household, education level, family population, rent, agricultural income, and others. The literature lacks relevant research that analyzes the factors influencing farmland transfer willingness from the information transmission channels. Most of the research on farmland transfer transaction intention adopted multiple linear regression model, logistic regression model [17,18], Tobit model [19,20], and ordered probit model [21].

The structural equation model is a statistical method based on a variable covariance matrix and used to analyze the relationship between variables; by introducing latent variables, it can be used to analyze the effect of a single index on the population and the relationship between single index. The reliability of its research results can be increased by adjusting the influence path optimization model [22]. From the perspective of the transferor (supply) and the transferee (demand), we used the structural equation model to select the key factors affecting the transaction intention of farmland transfer to provide a reference for the better service work of farmland transfer agencies and for better land management. We also analyzed the mechanism of the influence of information asymmetry on the willingness to transfer farmland.

The relationship between the transferor (principal) and the transferee (agent) is a typical principal–agent relationship [23]. In the activities of a market economy, the difference in information obtained by the main body of the transaction places them in unequal positions in the transaction. Usually, the transferor (principal) of agricultural land cannot directly observe the behavior of the transferee (agent). The behavior of the transferor determine some variables, but other exogenous variables, such as land output rate and land use rate, can only be observed. Meaning the farmland transferor can only obtain incomplete information on the farmland transferee. In theory, this phenomenon is called adverse selection, and moral hazard exists in that one party with more information will usually damage the interests of the other party to obtain greater benefits. Restricted by regional space, agricultural policy, agricultural science and technology, transaction costs, and other factors, the supply of agricultural land transfer is uncertain, and the information regarding agricultural land transfer is insufficient and asymmetric, for example, the asymmetry of agricultural technology training information, and the asymmetry of individual cognitive ability formed by the difference in cultural level. The information asymmetry in the process of farmland transfer mainly occurs between the main body of supply and demand or among the main body of supply and demand and the agency. According to different patterns of farmland transfer, three main means are available to hide information regarding the supply and demand situations. (1) The transferor needs to transfer out of farmland due to individual characteristics (e.g., physical condition), or economic factors (e.g., family economy). The transferor is eager to transfer out of the land and hides part of the information, such as poor quality of agricultural land.(2) To obtain lower agricultural operating costs, the transferor chooses to hide the use of agricultural land or not sign transfer contracts, etc., which are actions beneficial to itself. Additionally, the quantity and quality of scientific and technological information mastered by the transferring party (the main body of new agricultural management) may be different from those of traditional farmers. (3) The third party, that is, intermediary organizations or collective economic organizations in the process of agricultural land transfer, to obtain their interests, may choose to retain information. The hiding of information by all parties of the transfer subject leads to the emergence of the "lemon market" of the farmland transfer and then reduces the efficiency of the farmland transfer [4]. Therefore, a deep understanding of the process of farmland transfer and of the role of information asymmetry on farmers' willingness to transfer farmland could help open the channels of farmland transfer information transmission and improve the efficiency of farmland transfer.

2. Construction of the Model of Factors Influencing Farmland Transfer Intention

2.1. Fundamentals

The structural equation model (SEM) proposed by Joreskog is an important statistical method used to study the concept of behavior and quantitative analysis in the social field. The SEM combines factor analysis with linear model regression analysis, provides a new statistical method for analyzing the relationship between potential variables, and manages latent variables and their characterization indexes simultaneously. The SEM model is divided into two parts: the measurement equation and the structural equation. The measurement equation represents the causal relationship between the internal latent variables and the observed variables, and its matrix equation is recorded as follows:

$$X = \Lambda_X \xi + \delta$$

$$Y = \Lambda_Y \eta + \varepsilon$$

where X is the observation variable vector, ξ is the interpretation latent variable vector, Λ_X is the factor load matrix of the observation variable on the interpretation latent variable, δ is the residual term vector of the observation variable, Y is the result of the observation variable vector, η is the result of the latent variable vector, Λ_Y is the result of the observation variable factor load matrix on result latent variable, and ε is the result of the observation variable residual term vector.

The structural equation mainly describes the causal relationship between the internal latent variables. The matrix equation is recorded as follows:

$$\eta = B\eta + \Gamma\xi + \zeta$$

where B and Γ are path coefficients, B denotes the relationship between the latent variables of the result, Γ denotes the influence of the latent variable on the latent variable of the result, and ζ denotes the error term of the structural equation.

The behavior decision of the main body related to farmland transfer is affected by many external latent variables, such as individual basic characteristics, economic factors, agricultural land use, and social environment. Under the guidance of information asymmetry theory, the explicit indexes that can represent the latent variables are selected. The SEM is used to measure the key factors that affect the willingness to transfer farmland.

2.2. Variables and Definition of the Model of Farmland Transfer Willingness

The original intention of the establishment of the tripartite rural land entitlement system was to activate the management rights [24,25]. Establishing a perfect operation mechanism was the premise to ensure healthy management rights circulation. According to the theory of market factors, under an asymmetric information situation, the choice of farmers' farmland transfer behavior is influenced by several disordered dependent variables. In the process of circulation, each behavior subject may choose to conceal unfavorable factors out of its own interests and then adverse selection and immoral behavior pose risks [26,27].

According to the means of information transmission regarding farmland transfer, the conclusion of a farmland transfer transaction is affected by the external environment and internal factors. Its external environment includes farmland use conditions, social security, loan policies, and grassroots services. Internal factors mainly refer to farmers' physical condition, concurrent employment, and farmland quality. Drawing lessons from domestic and foreign scholars' theoretical and practical research results in the field of farmland transfer, the variables affecting farmers' willingness to transfer farmland are selected and defined in Table 1. These variables are:

Table 1. Definition of independent variables affecting farmer willingness to transfer agricultural land.

Category	Variable Name	Definition	Expected Coefficient Symbol	
			Transfer in	Transfer out
Individual characteristic (IF)	Age	[30,40) = 1; [40,50) = 2; [50,60) = 3; [60,70) = 4; [70,∞) = 5	Positive	Negative
	Physical condition	Extreme bad = 1; Bad = 2; Medium = 3; Good = 4; Very good = 5	Positive	Negative
	Sex	Female = 1; Male = 2	Positive	
	Educational level	Below primary school = 1; Junior middle school = 2; High school = 3; College = 4; Postgraduate and above = 5	Positive	Negative
	Occupation	Labor = 1; Manager = 2; Individual management = 3; Farmer + Labor = 4; Farmer = 5	Positive	Negative
	Per capita cultivated land area (mu)	[0,2.85) = 1; [2.85,5.25) = 2; [5.25,7.65) = 3; [7.65,10.05) = 4; [10.05,12.45) = 5	Positive	Negative
	Non-agricultural labor force	More than 3 = 1; Less than 3 (including 3) = 2	Positive	Negative
Economic factor (EF)	Proportion of non-agricultural income (%)	[80,100) = 1; [60,80) = 2; [40,60) = 3; [20,40) = 4; [0,20) = 5	Positive	Negative
	Rent (¥)	[1 280,1 600) = 1; [960,1280) = 2; [640,960) = 3; [320,640) = 4; [0,320) = 5	Positive	Negative

Table 1. *Cont.*

Category	Variable Name	Definition	Expected Coefficient Symbol	
			Transfer in	Transfer out
Farmland use (AU)	Farmland quality	Worse = 1; Bad = 2; Medium = 3; Good = 4; Better = 5	Positive	Negative
	Traffic convenience	Extremely inconvenient = 1; Inconvenient = 2; Medium = 3; Convenient = 4; Very convenient = 5	Positive	Negative
	Irrigation facilities condition	Very bad = 1; Bad = 2; Medium = 3; Good = 4; Very good = 5	Positive	Negative
Social environment (SE)	Social security satisfaction	Very dissatisfied = 1; Not satisfied = 2; Medium = 3 Satisfied = 4; More satisfactory = 5	Positive	Negative
	Loan policy satisfaction	Very dissatisfied = 1; Not satisfied = 2; Medium = 3 Satisfied = 4; More satisfactory = 5	Positive	Negative
	Subsidy policy satisfaction	Very dissatisfied = 1; Not satisfied = 2; Medium = 3 Satisfied = 4; More satisfactory = 5	Positive	Negative
Grassroots service (GS)	Presence of intermediary organizations	Yes = 1; No = 2	Positive	Positive
	Degree of intermediary development	Very dissatisfied = 1; Not satisfied = 2; Medium = 3; Satisfied = 4; More satisfactory = 5	Positive	Positive
	A contract is signed	No = 1; Yes = 2	Positive	Positive
	Agricultural technical training satisfaction	Very dissatisfied = 1; Not satisfied = 2; Medium = 3; Satisfied = 4; More satisfactory = 5	Positive	Negative

(1) Individual characteristics: The information transmission differs according to differences in farmers' acceptance ability and mainly includes age, physical condition, sex, educational level, occupation, per capita cultivated land area, and the number of workers in the non-agricultural labor force. (a) Age: The younger the farmers, the more opportunities they have to work in cities or engage in non-agricultural labor, and the greater their willingness to transfer out of agricultural land; the older the age, the greater the commitment to the land complex, the stronger the dependence on agricultural land, and the relatively lower willingness to transfer out of agricultural land. (b) Physical condition: The better the physical condition of farmers, the more able they are to engage with agricultural production. The higher the willingness to transfer to agricultural land, the lower the willingness to transfer out. (c) Sex: Men are more represented in agricultural work than women and may be more willing to transfer into land for agricultural production. (d) Cultural level: For transfer households, the higher the cultural level, the stronger their ability to manage land, and the higher the demand for transfer; for transfer households, the higher the cultural level, the greater the possibility of engaging in non-agricultural production, and the stronger the willingness to transfer agricultural land. (e) Occupation: The higher the proportion of farmers engaged in agricultural production, the more skilled the agricultural production skills, and the more willingness to transfer to agricultural land; the larger the proportion of migrant workers in rural households, the weaker the demand for agricultural land. They may be more willing to transfer out of agricultural land. (f) Per capita cultivated land area: For the circulation farmers, the larger the per capita cultivated land area, the richer the experience of cultivated land management, and the stronger the willingness to transfer to agricultural land. (g) The number of workers in the non-agricultural labor force: The higher the number of workers in the non-agricultural labor force of farmers, the lower the possibility of participating in agricultural production, and the more likely agricultural land transfer.

(2) The state of the economy: If farmers are eager to transfer due to family economic reasons, farmers may hide their circulation eagerness in the process of information transmission. The economic situation mainly includes the proportion of non-agricultural income, rental expectations, etc. (a) The proportion of non-agricultural income: The higher the proportion of farmers' non-agricultural income, the lower the demand for agricultural land. If family members are engaged in non-agricultural production in the field, the willingness to transfer out of agricultural land is higher. (b) Rent expectation: Usually, the lower the rent, the lower the production cost of the transferee, so the higher the willingness of the transferee to transfer to farmland.

(3) Conditions for the use of agricultural land: This factor mainly includes the quality of farmland, the convenience of farmland use, and the perfection of farmland irrigation facilities. In the process of a market transaction, if the quality of the farmer's farmland is lower than that of the surrounding farmland, the transferee may hide some of the information to obtain a higher rent. (a) The quality of farmland: The better the quality of agricultural land, the greater the agricultural output and the stronger the demand for transfer. (b) The convenience of farmland use and transportation: The more convenient the agricultural transportation, the more favorable it is for large-scale agricultural production, and the more conducive it is for the demand side to transfer to agricultural land. (c) The perfection of farmland irrigation facilities: The more perfect the farmland irrigation facilities, the better the agricultural production conditions, and the higher the demand for transferred farmland.

(4) Social environment: This factor mainly includes social security satisfaction, loan policy satisfaction, subsidy policy satisfaction, etc. In the process of information transmission, the more fully the demand side understands the policy, the higher the satisfaction with the policy, and the higher the possibility of transferring to agricultural land. (a) Satisfaction with social security: The higher the social security satisfaction, the lower the social security function of agricultural land, and farmers may transfer out of agricultural land. (b) Satisfaction with loan policy: The better the loan policy, the higher the satisfaction of farmers with the loan policy, the better the conditions for farmers to expand the scale of operation, and the more likely farmers will transfer to agricultural land. (c) Satisfaction with subsidy policy: The more superior the subsidy policy, the more economic benefits farmers obtain from farming, and the higher the possibility of transferring to agricultural land.

(5) Grassroots services: Grassroots services play important roles in the process of information transmission. This level of indicators mainly indicates whether there are intermediary organizations, the degree of intermediary development, whether to sign circulation contracts, and agricultural technology training satisfaction. (a) Intermediary organizations: The existence of intermediary organizations can provide convenient services for the transfer of agricultural land and increase the favorableness of the transaction. (b) The degree of intermediate development: The better the degree of intermediary development, the better the services provided for farmers, and the stronger the willingness of farmers to transfer. (c) Signing the circulation contract: The signing of the contract is conducive to the maintenance of the legitimate interests of both sides of the circulation, and the existence of a circulation contract will enhance the willingness of farmers to transfer. (d) Satisfaction with agricultural technology training: The more satisfied farmers are with agricultural technology training, the more agricultural production skills farmers acquire, and the stronger the willingness to transfer to agricultural land.

2.3. Questionnaire Design and Survey Methods

In this survey, five major grain production counties in Henan province (Hua County, Mengjin County, Dancheng County, Dengzhou City, and Wen County) were selected as the research areas. The questionnaire design was examined and revised by agricultural and economic experts.

The research group visited farmers and the main body of new agricultural management, and the investigation was conducted by combining a structured interview with a short discussion. This ensured that the investigation process was standardized and rigorous, and that the survey data were true and reliable. A total of 1100 questionnaires were sent out, and 1041 valid questionnaires were obtained, with an effective rate of 94.64% (Table 2). As a limited rational person, the premise of the behavior

of the subject of farmland transfer is to maximize their interests. The general situation involves the insufficient circulation of information and asymmetric information between the two sides of the transaction in the farmland transfer market.

Table 2. Sample distribution survey.

Survey Area	Distribution of Questionnaires		Recovery Questionnaire	
	Number (Copies)	Percentage (%)	Number (Copies)	Percentage (%)
Hua County	154	14.00	147	14.12
Mengjin County	197	17.91	189	18.16
Dancheng County	264	24.00	247	23.73
Dengzhou City	283	25.73	261	25.07
Wen County	202	18.36	197	18.92
Total	1100	100	1041	100

3. Results and Analysis of the Factors Influencing Farmland Transfer Intention

3.1. Fitting Test

Through the test of the main fitting indexes of the SEM, the fitting degree of the farmland transfer and transfer model was found to be very good, fulfilling the requirements of model construction (Tables 3 and 4).

Table 3. Calculation results of fitting exponents commonly used in the transfer in the model.

Fitting Exponents	Degree of Freedom	GFI (Goodness of Fit Index)	RMR (Root Mean Square Residual)	TLI (Tucker-Lewis Index)	CFI (Comparative Fit Index)	IFI (Incremental Fit Index)
Result	161.838 (ρ = 0.105)	0.912	0.038	0.968	0.924	0.982

Table 4. Calculation results of commonly used fitting exponents in the transfer out model.

Fitting Exponents	Degree of Freedom	GFI	RMR	TLI	CFI	IFI
Result	132.962 (ρ = 0.296)	0.906	0.047	0.928	0.913	0.920

3.2. Analysis of the Farmland Transfer Willingness Model Results

The SEM in Table 5 reflects the relationship among the latent variables in the willingness to transfer agricultural land model. The five primary factors have a good explanation of the willingness to transfer agricultural land and have a significantly positive impact. The path load coefficient shows that the economic factors have the strongest influence on farmers' willingness to transfer under asymmetric information, that is, for every unit increase in economic factors, farmers' willingness to transfer increases by 0.69 units. For every unit of increase in the basic characteristics of the transferee, the characteristics of agricultural land use, and the status of grassroots services, the transfer tendency of farmers increases by 0.18, 0.17, and 0.06 units, respectively.

Table 5. Estimation of path coefficient of the farmer land transfer in willingness model.

	Path	Influence Direction	Standardized Path Coefficient	Test Results
Structural Model	Basic characteristics → Farmers' willingness to transfer	+	0.18 **	Support
	Economic factors → Farmers' willingness to transfer	+	0.69 **	Support
	Farmland use → Farmers' willingness to transfer	+	0.17 **	Support
	Social environment → Farmers' willingness to transfer	+	0.13 *	Support
	Grassroots service→Farmers' willingness to transfer	+	0.06 **	

	Subordination of Variables	Unstandardized Path	Composition Reliability	Standardized Path	*p*	Significant or Not
Measurement Model	Age → Basic characteristics	1.00	-	0.12	-	Significant
	Physical condition → Basic characteristics	1.93	2.01	0.38 ***	0.01	Significant
	Sex → Basic characteristics	–0.01	–3.01	–0.00	0.20	Not significant
	Educational level → Basic characteristics	0.78	2.18	0.17 **	0.04	Significant
	Occupation → Basic characteristics	–0.26	–3.40	–0.05	0.34	Not significant
	Per capita cultivated land area → Basic characteristics	2.06	9.94	0.44 *	0.06	Significant
	Non-agricultural labor force → Basic characteristics	2.13	9.79	0.52 *	0.08	Significant
	Proportion of non-agricultural income → Economic factors	1.00	-	0.64	-	Significant
	Rent → Economic factors	0.17	9.12	0.12 **	0.02	Significant
	Farmland quality → Farmland use	1.00	-	0.23	-	Significant
	Traffic convenience → Farmland use	2.77	8.11	0.45	0.08	Significant
	Irrigation facilities condition → Farmland use	2.75	9.46	0.44 **	0.14	Not significant
	Social security satisfaction → Social environment	1.00	-	0.12	-	Significant
	Loan policy → Social environment	3.78	8.86	0.41 *	0.06	Significant
	Subsidy policy satisfaction → Social environment	0.03	3.14	0.11 *	0.08	Significant
	Presence or absence of intermediary organizations → Grassroots service	1.00	-	0.21	-	Significant
	Degree of intermediary development → Grassroots service	4.55	2.43	0.33 **	0.04	Significant
	Whether to sign a contract → Grassroots service	1.20	8.21	0.16 **	0.02	Significant
	Agricultural technical training satisfaction → Grassroots service	1.63	3.24	0.77 *	0.06	Significant

Note: *, **, and *** indicate significance at the 10%, 5%, and l% levels, respectively; five paths with "-" indicate that they were used as benchmarks for SEM parameter estimation to estimate whether other paths were significant.

The absolute value of the critical ratio of each observable variable in the measurement model is provided in Table 5. The values are all greater than two, indicating that the estimation of load

coefficient between the external latent variables and observable variables is statistically significant. From Table 5, we conclude the following:

(1) Among the seven measurement indexes reflecting the basic characteristics of individual farmers, the number of workers in the non-agricultural labor force and the per capita cultivated land area of families had a relatively strong influence on farmer willingness to transfer agricultural land, at 0.52 and 0.44, respectively. The results showed that under the situation of asymmetric information, families with a larger number of workers in the non-agricultural labor force and more agricultural land tended to obtain the benefits of farmland scale management by transferring to agricultural land. However, sex and occupation did not pass the significance test. The results showed that these two indicators had little effect on farmers' willingness to transfer.

(2) The proportion of non-agricultural income and rent, which reflects the economic characteristics of farmers, had a significant impact on farmers' willingness to transfer. Affected by asymmetric information, the price of agricultural land transfer is easily affected by the surrounding areas. To reduce the cost of agricultural operation, the agricultural land transfer side is more willing to obtain agricultural land at a lower price. Under asymmetric information, rent has become the main concern for both sides of agricultural land transfer transactions.

(3) Among the three measurement indexes reflecting the characteristics of farmland use, the quality of farmland and the degree of traffic convenience had a positive and significant influence on the willingness to transfer farmland, and the influence rates were 0.23 and 0.45, respectively. The transferor, as a limited rational economic individual, after transferring to agricultural land, to maximize economic interests, mostly turned to planting melon, fruit, flowers, vegetables, and other cash crops. However, most cash crops (peanuts, soybeans) planted after the transfer to agricultural land in this study have low requirements for the quality of agricultural land and irrigation facilities.

(4) Among the three measurement indexes reflecting the characteristics of the social environment, agricultural loan policy had a positive and significant influence on the willingness of farmland transfer, and its influence was 0.41.

(5) Among the four measurement indexes reflecting the level of service, the satisfaction degree of agricultural technical training had the highest ability to explain the level of service, at 0.77. The results showed that the farmers who master the advanced agricultural production and planting technology are in a dominant position under the situation of asymmetric information and tended to transfer to agricultural land for large-scale management. In the new period, agricultural production has placed stricter requirements for new agricultural management subjects. Mastering the status of agricultural production skills has become an important index to measure whether agricultural production is competitive. The perfection of intermediary service organizations, intermediary service organizations, and the signing of transfer contracts had a positive impact on the transfer of agricultural land.

3.3. Analysis of the Results of the Model of Agricultural Land Transfer Willingness

Table 6 shows that the economic characteristics and grassroots services in the SEM had a positive and significant impact on the willingness of farmland to transfer at the 10% level, with effects of 0.97 and 0.15, respectively. The characteristics of farmland use, the basic characteristics of farmers, and the social environment had positive and significant impacts on the transfer of farmland at the 5% level, at 0.15, 0.03, and 0.01, respectively. Based on the significance test, the relationship between the observed variables and their corresponding exogenous latent variables was as follows:

Table 6. Estimation of path coefficients in the willingness model of agricultural land transfer out.

	Path	Influence Direction	Standardized Path Coefficient	Test Results
Structural Model	Basic characteristics →Farmers' willingness to transfer	+	0.03 **	Support
	Economic factors → Farmers' willingness to transfer	+	0.97 *	Support
	Farmland use → Farmers' willingness to transfer	+	0.15 **	Support
	Social environment → Farmers' willingness to transfer	+	0.01 **	Support
	Grassroots service → Farmers' willingness to transfer	+	0.15 **	Support

	Subordination of Variables	Unstandardized Path	Composition Reliability	Standardized Path	*p*	Significant or Not
Measurement Model	Age → Basic characteristics	1.00	-	0.18	-	Significant
	Physical condition → Basic characteristics	0.69	5.51	0.57 *	0.06	Significant
	Educational level → Basic characteristics	0.30	2.13	0.05 **	0.03	Significant
	Occupation → Basic characteristics	0.26	4.78	0.19 *	0.08	Significant
	Per capita cultivated land area → Basic characteristics	0.24	2.95	0.06 **	0.04	Significant
	Non-agricultural labor force → Basic characteristics	0.76	2.85	0.11 *	0.08	Significant
	Proportion of non-agricultural income → Economic factors	1.00	-	0.23	-	Significant
	Per capita annual income → Economic factors	0.01	2.05	0.01	0.13	Not significant
	Rent → Economic factors	0.04	2.14	0.02 **	0.02	Significant
	Farmland quality → Farmland use	1.00	-	0.48	-	Significant
	Traffic convenience → Farmland use	0.02	4.83	0.03	0.15	Not significant
	Irrigation facilities condition → Farmland use	0.07	2.71	0.07 **	0.04	Significant
	Social security satisfaction → Social environment	1.00	-	0.05	-	Significant
	Subsidy policy satisfaction → Social environment	0.52	7.76	0.03 **	0.05	Significant
	Presence or absence of intermediary organizations → Grassroots service	1.00	-	0.14	-	Significant
	Degree of intermediary development → Grassroots service	0.04	2.32	0.05*	0.06	Significant
	Whether to sign a contract → Grassroots service	0.02	2.09	0.05 **	0.04	Significant
	Satisfaction with agricultural technical training → Grassroots service	0.03	7.68	0.03 *	0.06	Significant

Note: * and ** indicate significance at the 10% and 5% levels, respectively; five paths with "-" indicate that they served as benchmarks for SEM parameter estimation to estimate whether other paths were significant.

(1) Among the six measurement indexes reflecting the basic characteristics of farmers, the physical condition had the strongest ability to explain the basic characteristics of farmers, at 0.57. This shows

that under asymmetric information, farmers' transfer of agricultural land is more based on their own physical conditions, and the farmers with relatively poor health tend to transfer out of agricultural land.

(2) Among the three measurement indexes reflecting the economic characteristics of farmers, the proportion of non-agricultural income had a significant positive impact on farmers' willingness to transfer agricultural land, at 0.23. The higher the proportion of non-agricultural household income, the more inclined a farmer is to transfer out of agricultural land.

(3) Among the three measurement indexes reflecting the characteristics of farmland use, the quality of farmland had the strongest ability to explain the characteristics of farmland use, and its explanatory power was 0.48, that is, the worse the quality of farmland, the more farmers are willing to transfer out of their agricultural land. The worse the irrigation facilities and the more farmers are reluctant to spend energy on the relatively poor irrigation facilities using agricultural land investment, the more farmers are willing to transfer out of land, rather than abandon it. As a result of the implementation of the village-to-village project, the rural roads have been greatly improved, the convenience of rural farmland traffic is generally high, but the index has not passed the significance test.

(4) The indicators reflecting the characteristics of the social environment showed that under asymmetric information between the two sides of a transaction, the higher the satisfaction of farmers with social security and the lower the satisfaction with subsidy policy, the more farmers are willing to transfer out of land.

(5) Among the four variables reflecting the characteristics of grassroots service, the presence or absence of intermediary organizations had a positive and significant impact on the willingness of farmers to transfer out, and its influence was 0.14, under the condition of asymmetric information. To promote an increase in the incidence of farmland transfer transactions, intermediary organizations should be improved.

4. Discussion and Conclusions

4.1. Discussion

Information participates in market activities as a factor of production, and information asymmetry generally exists in the social economy. Under the background of the three-right separation system, to enable the right to operate farmland and improve the incidence of farmland transfer, the willingness to transfer farmland must be studied according to the classification of different business subjects and open the transmission channels for farmland transfer information. To explore how to improve the level of agricultural information management, to solve the contradiction between the fragmentation and dispersion of cultivated land, the large-scale modernization of agriculture is required in order to avoid the problem of adverse behavior selection in the transfer of agricultural land as much as possible. Additionally, future research could explore the construction of a multi-level and multi-channel agricultural technology training system to solve the problem of technical services for farmers to provide basic technical support for the development of modern agriculture, and to support Henan province transform from a large agricultural province to a strong agricultural province.

4.2. Conclusions

Based on information asymmetry, we constructed an SEM to analyze the main key factors that affect the willingness of farmland transfer in the process of information transmission. The main conclusions are as follows:

(1) In the SEM of farmland transfer, the satisfaction with agricultural technical training, the proportion of non-agricultural income, and the number of workers in the non-agricultural labor force have significant effects on the willingness to transfer farmland.

Information asymmetry generally exists in the process of agricultural production and management and agricultural land transfer. Among all the observation variables, the satisfaction with agricultural technical training had the greatest influence on the willingness to transfer agricultural land. Its influence

was 0.77, indicating that the more advanced the agricultural technology mastered, and the more agricultural information is understood in the incomplete competitive market, the easier it is to be in a leading position in the market.

Transportation convenience, per capita cultivated land area, and agricultural loan policy also had a significant impact on farmers' willingness to transfer farmland.

(2) In the SEM of farmland transfer, the physical condition of farmers and the quality of farmland had the most significant influence on the willingness of farmland transfer. According to the law of market supply and demand, under the asymmetry of information, the rent that the transferor is willing to pay is usually based on the average quality level of agricultural land in the transfer area. However, when the transferor with higher quality farmland cannot obtain a price that matches the quality of their agricultural land, they choose to withdraw from the agricultural land transfer transaction market. This is only if the farmers' physical condition allows them to engage in agricultural production activities. However, farmers who have land that is lower than the average quality of agricultural land in the market tend to transfer out of agricultural land. That is, low quality agricultural land has a positive impact on the willingness to transfer agricultural land, and the result of this adverse selection causes high quality agricultural land to be withdrawn from the agricultural land transfer transaction market and low quality agricultural land to occupy a large share of the market.

(3) The latent variables selected in this study had a positive impact on the model. The external latent variables in the transfer model and the external latent variables in the transfer model had a positive impact on the agricultural land transfer model, in which the economic factors had a particularly significant impact on the model.

(4) According to the analysis of the SEM of farmland transfer, a fair and reasonable market environment must be created for the transfer of agricultural land under the condition of asymmetric information to activate the right to operate agricultural land. Our suggestions are as follows: First, unblock the farmland transfer information channel as much as possible to increase agricultural science and technology extension services, to carry out special technical training for farmers that have a strong acceptance capacity, to enable new agricultural varieties and new technologies to be applied to agriculture in a timely manner, and to apply in modern agricultural farming models and concepts. Other suggestions are as follows: Farmers should grow their businesses reasonably and manage scientifically; various forms of the rural agricultural industry should be developed; the rural labor force must be attracted to the idea of returning to their hometowns to start a business; the rural economy and farmers' income should be promoted; and the operating costs of farmland transfer should be reduced. Under the realistic background of the fragmentation and dispersion of land plots in China, we suggest that in the area of farmland circulation, fine farmland should be further integrated. A convenient transportation system and irrigation and drainage systems should be formed through the comprehensive treatment of fields, water, roads, and forests. This suggestion involves the centralized management of agricultural land and the creation of a satisfactory farming environment for large-scale agricultural management. Finally, to avoid the lemon dilemma in the agricultural land transfer market, a basic information database of agricultural land transfer should be established. Linking the quality of farmland with farmland transfer information would enable users at all levels to quickly find qualified farmland through positioning and logical condition queries, and simultaneously construct a price system of farmland transfer based on the background quality of farmland to service agricultural land transfer transactions.

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