



The Research of the Willingness and Factors of Households Transfer Land in Exurban Area

Jiang Kuo¹ and Li Yue²

¹School of Business, Hubei University, Wuhan City, Hubei Province 430062

²School of Business, Hubei University, Wuhan City, Hubei Province 430062

ABSTRACT

Due to the natural factors such as location, the farmer in exurban area can't get the added value of land, so they attach less and less importance to land. Land transfer is one of the effective methods to realize the increasing value of farmers their own land. According to the survey data of 268 households from Jinhu sub-district office, Daye city for two exurban villages, this article used the Binary logistic model and make regression analysis from 5 aspects such as individual characteristics of rural households, family characteristic, characteristics of land transfer, cognition of land and social factors, to explore the main factors for affecting the willingness of rural households in exurban area to transfer land, and put forward the the corresponding policy recommendations.

Keywords: Exurban; Land transfer; Factors; Logistic model

*Correspondence to Author:

Jiang Kuo

School of Business, Hubei University, Wuhan City, Hubei Province 430062

How to cite this article:

Jiang Kuo and Li Yue. The Research of the Willingness and Factors of Households Transfer Land in Exurban Area. American Journal of Geographical Research and Reviews, 2018; 1:10.



eSciPub LLC, Houston, TX USA.

Website: <http://escipub.com/>

1. bair conditionerskground

Land transfer means the rural households who have the land contracted management right transfer the land management right (the right to use) to other rural households or economic organizations, that is, retain the contract right and transfer the use right. In this way, the property income of farmers their own can be increased greatly, the existing land resources problems in China, such as deserted farmland can also be improved to some extent¹.

Under the background of new urbanization, different scholars have made a lot of research about land transfer in suburbs of city². The results showed that the farmers in suburbs can get added value of land in various ways because of the objective factors such as good location and their own characteristics. But actually, the farmers in exurban area relatively far away from central urban area are less likely to get the added value of land. Land transferring could improve the property income of farmers in exurban area, then to promote the development in exurban area and shorten the gap between urban and rural places, so as to promote balance urban and rural development finally. On an individual farmer basis, in order to realize the asset value of their own land, the farmers in exurban area have relatively strong willingness to transfer land. In this article, two relatively remote administrative villages in Daye city have been selected for investigation and analysis, to provide a reference for exploring the willingness of the rural households in exurban area to transfer land and its factors⁴.

2. model choice and variable selection

2.1 model setup and variable selection

$$P=f(H, J, L, R, S) \quad (2.1)$$

This article intends to start from the micro perspective of rural households, to set up the

regression model for affecting choice of households to transfer land and analyze the decisive factor of affecting rural households in exurban area to transfer land⁵. The main factors for affecting willingness of rural households in exurban area to transfer land are as follow: basic characteristics of the householder, family characteristics of rural households, characteristics of land transfer, land cognition of rural households and social factors. So the model has been set up as follow:

$$P=f(H, J, L, R, S) \quad (2.1)$$

In the model, P refers to the probability of rural households" willing" and "unwilling" both land transfer behaviors; H refers to basic characteristics of rural households, including the householder age, educational level and so on; J refers to family characteristics of rural households, including household labor force, share of agricultural income, etc; L refers to the characteristics of land transfer, including the timeline of land transfer, the share of agricultural production for transferring land, the price of land transfer, etc; R refers to the land cognition of rural households; including the attitude of rural household towards land, the knowledge of rural household towards land property right, the degree of protection by law for land transfer, etc; S refers to the social factors of affecting land transfer, including the involvement degree of local government, rural households joining cooperative organizations, etc. Model (1) can be expressed by the following mathematics model of multiple linear regression analysis:

$$y = \varepsilon + \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \beta_{11}x_{11} + \beta_{12}x_{12} \quad (2.2)$$

In the model, Y refers to whether the rural household is willing to transfer land. ε refers to random error, β_0 refers to multiple regression constant, β_{1-12} refers to partial regression coefficient; x_{1-12} respectively represents the

factors represented by H, J, L, R and S in Model(1).

2.2 quantitative methods selection

The occurring probability of rural households to transfer land has been taken as explaining variable in this article, the Binary Logistic Model has been used for analysis, the probability that rural household are willing to transfer land has

been analyzed by the observed value from a series of explaining variable⁶. The maximum likelihood method has been used to analyze the significance of Logistic regression, and the regression coefficient of each variable has been tested by Wald statistics of each variable.

The regression equation of the multiple linear regression model is:

$$E (y_i) = \varepsilon + \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \dots + \beta_{11}X_{11} + \beta_{12}X_{12} \tag{2.3}$$

Then y_i probability distribution function is:

$$P (y_i) = f (p_i) y_i [1 + f (1 + p_i)]^{1 - y_i} \quad (y=0, i=1, 2, 3, 4 \dots 11, 12) \tag{2.4}$$

The regression function of Logistic is :

$$f (p_i) = \frac{e^{p_i}}{1 + e^{p_i}} = \frac{e^{\beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_{12}x_{12}}}{1 + e^{\beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_{12}x_{12}}} \tag{2.5}$$

Its likelihood function is :

$$L = \prod_{i=1}^{13} p(y_i) = \prod_{i=1}^n f (p_i)^{y_i} [1 + f (1 + p_i)]^{1 - y_i} \quad (i=1, 2, 3 \dots 12) \tag{2.6}$$

Taking the natural logarithm for likelihood function, it's concluded:

$$\ln L = \sum_{i=1}^{13} [y_i(\beta_0 + \beta_1x_1 + \dots + \beta_{12}x_{12}) - \ln(1 + \beta_0 + \beta_1x_1 + \dots + \beta_{12}x_{12})] \tag{2.7}$$

The maximum likelihood method has been used to do the valuation, the parametric estimated value has been obtained. The variable explanation, the key statistic and the expected direction in Model are shown as Table 2-1.

For the explaining and handling of the variable, we've assigned values to dependent variable y (willingness of land transfer), willing to be 1, unwilling to be 0. And similar independent variables x_{1-12} have been assigned to values which are ranging from 1 to 4 or 5 according to their respective relevant answer options.

3. data resource and sample characteristics

3.1 research area

Daye city is in the southeast of Hubei Province, with an area of 1,566 square kilometers and total population of 930,00⁷. In 2017, the whole city had realized the regional GDP 50.13 billion,

increased 10.1%; The per capita disposable income of urban residents had reached 99,243 Yuan, increased 9.8%; the per capita net income of farmer was estimated to reach 11,792 Yuan, increase 11.5%. (data resource: Daye government website <http://www.hbdaye.gov.cn/>)

The total area of Daye city is 1566.3 square kilometers. At the end of 2017, the least cultivated areas of whole city were 50,479.84 hectares, compared with 2016, the net reduction was 555.24 hectares. Trough implementing the projects such as land development, reclamation and consolidation, the actual supplementary cultivated land was 227.61 hectares. The added rural transferring land area of the whole city is 66,000 mu. (data resource: Daye land and resource website <http://www.dygt.gov.cn/>)

Table 2-1 model variable definition assignment and expected direction

Variable		Definition and Assignment	Expected Direction
The willingness of rural households to transfer land(y)		0= unwilling, 1= willing	
Individual characteristics	Age of households (x ₁)	1=25 years old and under, 2=26—35 years old, 3=36—45years old, 4=46—55 years old, 5=56years old and above	Negative direction
	Education level of householder(x ₂)	1=semi-literate, 2=primary school, 3=junior middle school, 4=high school and above	Positive direction
Family characteristics	Household labor force(x ₃)	1=1person, 2=2persons, 3=3 persons, 4=4persons and above	Negative direction
	Share of agricultural income(x ₄)	1=20% and under , 2=21%—50%, 3=51%—80%, 4=81% and above	Negative direction
	Timeline of transferring(x ₅)	1=3 years and under, 2=4—8 years, 3=9—15 years, 4=16 years and above	Negative direction
Transferring characteristic	The share of agricultural production for transferring land(x ₆)	1=10% and under, 2=11%—40%, 3=41%—70%, 4=71% and above	Positive direction
	The price of transferring (per mu)(x ₇)	1=600 Yuan and under, 2=601—800 Yuan, 3=801—1000 Yuan, 4=1001 Yuan and above	Positive direction
Cognition	Attitude towards land(x ₈)	1=attach no importance, 2=attach little importance, 3=general, 4=attach importance, 5=attach high importance	Negative direction
	Knowledge towards land property right(x ₉)	1=owned by state, 2=owned by collective, 3=owned by individual	Negative direction
	Degree of protection by law(x ₁₀)	1=completely unprotected, 2=unprotected, 3=general, 4=protected, 5=completely protected	Positive direction
Social factors	Involvement degree of local government(x ₁₁)	1=completely not involved, 2=not involved, 3=general, 4=involved, 5= completely involved	Positive direction
	joining cooperative organizations(x ₁₂)	0= not joining, 1=joining	Positive direction

3.2 data resource

The relevant data in this article was obtained by the field investigation of rural households and network questionnaire. The field investigation was finished in June,2018, but for the young farmers who are not farming in rural areas, the

data was obtained by network questionnaire⁸.

This article mainly selected two exurban villages of Jinhu sub-district office, Daye city for investigation, they respectively are Dexian Village and Kewan Village. It should be noted that the works related to land transfer has been

started in the surrounding villages of Dexian Village, so they have a higher recognition towards land transfer. The combination of random sampling and typical investigation has been used for investigation, it involved wide range of ages, the samples are representative in general. The total of 304 questionnaires were issued this time, and 268 valid questionnaires were returned, the response rate is 88.15%⁹.

3.3 description for basic characteristics of samples

In this research, the 5 aspects have been included in the questionnaire, such as individual characteristics of rural households, family characteristic, characteristics of land transfer, cognition of land and social factors. Whether they are willing to transfer land, in the 268 rural households investigated, the rural households who are willing to transfer land account for 82.09%, and who unwilling to transfer land account for 17.91%.¹⁰ It indicated that in exurban area, the most of rural households are willing to transfer land and they have strong willingness to transfer land. Through a simple analysis of the questionnaire investigation results, it can be found that the samples have the characteristics as following.

The farmer householders are slightly older and lower education level.

In the aspect of house holders' characteristics, the most of age range for householders are from 45 to 55 years old, it accounts for 40.3%, the most of education level for householders are junior high school education, it accounts for 44.78%.¹¹ It shows that the investigated subjects are mainly for farmer householders with slightly older and lower education level.

(1)The number of household labor force and the share of agricultural income are small

In the aspect of rural household family

characteristics, the number of household labor force is mainly for 2 or 3 persons, it accounts for 71.56%. the proportion of agricultural income in household income is main for 20% and under, it accounts for 80.60%.¹² It shows that the investigated subjects are mainly for having the characteristics of small number of household labor force and share of agricultural income.

(2)It's requested that the timeline of land transfer is short, the use of land is fixed with suitable price.

In the aspect of land transfer characteristics, the most of the rural households hope the timeline of land transfer within 3 years, and 4 to 8 years, they accounts for 85.08% totally; over 71% rural households hope that the transferred land could be used for farming; The prices of land transfer are mainly concentrated in the above 1000 Yuan and under 600 Yuan¹². It shows that the investigated subjects are mainly for having the characteristics of hoping the land transfer with short timeline, fixed land use and high or suitable price.

(3)The land is regarded as private, and the degree of protection by law is general.

In the aspect of cognition, the most of rural households attach the importance to land, it accounts for 41.79%; the most of rural households regard land as private, it accounts for 62.69%; the most of rural households think that the degree of protection by law towards land is general, it accounts for 40.30%. It shows that the investigated subjects' cognition towards land are mainly for having the characteristics of attaching importance to land and regarding land as private with the general degree of legal protection towards their own land¹³.

(4)The attention from government is insufficient and it's willing to join cooperative organizations.

In the aspect of social factors, the most of

investigated rural households think that the involvement degree of government is general, it accounts 55.22%; the most of investigated rural households are willing to join the cooperative organizations, it accounts for 56.72%¹⁴. It shows that the social factors of land transfer have characteristics of insufficient attention from the government, and a tendency to join cooperative organizations.

4. the quantitative results and analysis

SPSS19.0 statistical software was used to make Binary Logistic regression analysis of data results. Seen from the estimated results in various models, the whole model is significance, the quantitative results of different models are similar and relatively stable. Due to the limited space, only the analysis results of model including all variables and the significant analysis results of all variables have been listed, respectively model one and model two.

Model one

	B	S.E,	Wals	df	Sig.	Exp (B)
Age of householder	-2.793	0.822	11.544	1	0.001	0.061
Education level of householder	-5.141	1.44	12.754	1	0	0.006
The number of household labor force	1.052	0.572	3.379	1	0.066	2.862
Share of agricultural income	-4.265	1.282	11.075	1	0.001	0.014
Timeline of land transfer	3.642	1.16	9.862	1	0.002	38.169
Share of agricultural production for transferring land	-0.71	0.461	2.368	1	0.124	0.492
Price of land transfer	-0.467	0.501	0.871	1	0.351	0.627
Attitude towards land	-2.037	0.638	10.179	1	0.001	0.13
Cognition for land property rights	-2.316	1.019	5.165	1	0.023	0.099
Degree of protection by law	-2.172	0.693	9.808	1	0.002	0.114
Involvement degree of local government	2.418	0.846	8.171	1	0.004	11.219
Joining cooperative organization	5.266	1.518	12.026	1	0.001	193.562
Constant	42.866	11.301	14.388	1	0	4.14E+18

Model two

	B	S.E,	Wals	df	Sig.	Exp (B)
Age of householder	-2.052	0.7	8.604	1	0.003	0.128
Education level of householder	-4.094	1.028	15.856	1	0	0.017
The number of household labor force	—	—	—	—	—	—
Share of agricultural income	-3.354	0.906	13.706	1	0	0.035
Timeline of land transfer	2.729	0.796	11.746	1	0.001	15.314
Share of agricultural production for transferring land	—	—	—	—	—	—
Price of land transfer	—	—	—	—	—	—
Attitude towards land	-2.268	0.584	13.361	1	0	0.118
Cognition for land property rights	-1.831	0.722	6.435	1	0.011	0.16
Degree of protection by law	-1.567	0.514	9.293	1	0.002	0.209
Involvement degree of local government	2.193	0.579	14.345	1	0	8.962
Joining cooperative organization	4.529	1.285	12.422	1	0	92.684
Constant	33.83	8.871	14.543	1	0	4.92E+14

With analyzing the models, it's concluded as following:

(1)The influence of householder characteristics on the willingness of land transfer

The significance level of householder's age has passed 1% in both Model one and Model two, and its coefficient signs are negative. The reason is that the farmers in exurban area with older age attach more importance to the safeguard function of land, they are naturally not willing to transfer land. The significance of

householders education level in Model one and Model two are very strong, and its coefficient signs are negative. This is contrary to our expectation. The reason may be that in exurban area, the income brought by land accounts for a smaller and smaller proportion of rural households' family income, due to considering the family income, the farmers with low education level are willing to go out as migrant workers instead of stay at hometown as farmers, in addition, the land transfer in surrounding area

has brought a certain economic effects, therefore, even the farmers with low education level are also willing to transfer land.

(2)The influence of rural household family characteristics on the willingness of land transfer

Household labor force is not non-significant in both model one and model two. this is different from our expected direction. In exurban area, the farmers are not easy to get the added value of land, so their first choice is going out as migrant workers, the number of household labor force has little influences on transferring land. The significance level for proportion of agricultural income has passed 1% in Model one and Model two, and its coefficient signs are negative. The higher the agricultural income in rural household, the more importance to land for family income, the farmers are naturally not willing to transfer land.

(3)The influence of land transfer characteristics on the willingness of land transfer

The significance of timeline of land transfer has passed 1% in model one and model two, and its coefficient signs are positive. This is different from our expected direction. The reason may be that there are little possibility to realize added value of land or land expropriation in exurban area, so the rural households don't consider too much about the timeline of land transfer. Besides, in the investigation, it was found that some farmers think it's bad for agricultural production if the timeline of land transfer is too short, this also could prove our conclusion. The share of agricultural production of transferring land and the price of land transfer didn't pass the significance test. It shows that both of them have no influence on the willingness of land transfer, this is not in accordance with our expected result. The reason may be that the

rural households are not clear about the price of current land transfer, this also indicates that proportion of land income in farmer income has reduced from sides.

(4)The influence of rural households' cognition towards land on the willingness of land transfer

The attitude towards land has passed the 1% significance test in both Model one and Model two, and its coefficient signs are negative. The farmers attach importance to their own land, naturally they are to not willing to transfer land to others or other organizations. The cognition towards land property right has passed 5% significance test in both Model one and Model two, and its coefficient signs are negative. In exurban area, the more the rural households think their own land should be privatized, the higher importance they attach to land, naturally they are not willing to transfer land. The degree of legal protection towards land has passed the 1% significance test in both Model one and Model two, and its coefficient signs are negative. This is contrary to our expectation. The reason may be that the higher degree of legal protection towards land, the more legality the land has, due to affected by the thought of privatization, the farmers in exurban area think that the more legality the land has, the more property attribute it has, therefore, the less willingness to transfer land. This may be a typical situation of land transfer in exurban area.

(5)The influence of social factors on the willingness of land transfer

The involvement degree of local government has passed the 1% significance level in both Model one and Model two, and its coefficient signs are positive. This may be a reflection for the trust of exurban farmers in government, as long as the government provides policy support for land transfer, the farmers in exurban area

are willing to transfer land due to factors such as government credibility. The significance level of joining cooperatives has passed the level of 1% in both Model one and Model two, and its coefficient signs are positive. Through Joining cooperative organizations, especially the cooperative organizations with the nature of the share based on land, naturally the farmers are willing to transfer their own land to cooperative organizations, besides, in practice, some land transfer activities are made through joining agricultural cooperatives.

In conclusion, because of the deficiencies in various aspect such as location, thinking mode, information acquisition ability, etc, the factors of affecting rural households in exurban area to transfer land is different from our expected direction. This difference has been reflected in aspects such as the education level of householder, the number of household labor force, the timeline and price of land transfer, the degree of legal protection towards land, etc. Therefore, it's the one of keys for promoting the reasonable development of land transfer in exurban area to pay attention to these existing differences and its internal factors

5. conclusion and policy recommendations

The results showed that in exurban area, the head of households with older age, more educated, the higher the proportion of agricultural income, put a higher value upon the land, and think more that land is privately owned and agricultural land is protected by law , with less willing to transfer land; some factors have a positive effect on the willingness of households to transfer land, such as the timeline of land transfer, the involvement of local government and joining a cooperative organization, etc; some factors have no significant effect on the willingness of households to transfer land, such

as the number of household labor force, the share of agricultural production of transferring land and the price of land transferring.

So, based on the analysis results, the several recommendations have been made in this article as following.

Firstly, Increase publicity efforts for rural land transfer in exurban area

The households in exurban area are still not clear about the price and form of land transferring. It's bad for developing the transfer of rural land in exurban area. It's needed to increase publicity efforts for rural land transfer in exurban area, so as to make sure that the households in exurban area could transfer the lands efficiently¹⁵.

Secondly, attach importance to the role of government in the land transferring of rural households in exurban area.

Firstly, it's sure that we should attach importance to the main role of households in land transferring, but due to the limitation of the rural households their own in exurban area, it's true that there are a series of problems to rely on the rural households their own completely to transfer land. This is consistent with the fact that quite a part of rural households are not satisfied with the current situation of land transferring in the process of investigation. So, it's quiet important to clarify the role of government as policy maker, supervisors ,guides and service providers in land transfer¹⁶.

Thirdly, actively take advantage of the market to accelerate the transfer of rural land in exurban area

It's found in the investigation that the current situation of land transferring in exurban area can't meet the needs of rural households, the policy formulation is not perfect no matter in the number of land transferring, or the business

entities,

So, we need take advantage of the resource allocation function in market to meet the needs of land transferring in exurban area. The top priority is that government should strengthen support, use market to introduce diversified rural business entities and clarify the property ownership of rural land.

References

1. Wang zhaohua, Wu Xiangyang, The great significance to accelerate the rural collective land transfer in the process of new urbanization [J]. *Agricultural Economics*,2014,(03): 27-29.
2. Yue Yiding, Liu Lijun, Based on Analytic Network Process to evaluate Economic performance of rural land transfer [J]. *Chinese Rural Economy*, 2010, (8): 36-47.
3. Xiao Dawei, The research about subsidy policy for implementing land transfer [J]. *China Land Science*,2010,(12):10-14.
4. Luo Guanglian, Guan Lily, Luo Dongqi, Wei chaofu, Empirical Analysis of rural household behavior choice in the market of land transfer-- based on the survey data of large samples from 34 districts and counties in Chongqing.[J]. *Research On Development*,2009,(02):66-69.
5. Zhong Xiaolan, Li Jiangtao, Feng Yangfen, Research about the willingness and behavior of rural land transfer in Guangdong province from the perspective of rural households' cognition.[J]. *Resources Science*,2013,(10):2082-2093.
6. Zhou Nidi, Li mingxian, the willingness of rural households in urban suburbs to transfer land and its factors-- based on the survey data about rural households from 8 villages and towns in Changsha City. [J]. *Journal of Hunan Agricultural University(Social Science)*,2013,(06):20-26.
7. Peng Weibing, Zhang Xiaomin. Re-look at rural land transfer- from the perspective of the basic contradiction about big population and little land in rural area.[J]. *China Land Science*,2010,(01):22-26.
8. Lin Shanlang, Wang Jian, Zhang Feng. Empirical research about the influence of labor transfer behavior on the willingness of land transfer [J]. *China Land Science*,2010,(02):19-23.
9. Zheng Xiongfei, Research for improving land transfer policy: research review for Land-for-security in China [J]. *China Land Science*,2010,(02):76-81.
10. Liu Yan. Discussion about the legalization of property rights system in rural land transfer [J]. *China Land Science*,2014,(11):45-50.
11. Chen Bofeng. The theoretical basis of land development rights and the prospect of system [J]. *Chinese Journal of Law*,2012(04):99-114.
12. Xi Zenglei, Wang Yuding, Hu Yanling. Logistic model regression analysis of the cognition and expectation towards rural land transfer -- based on the investigation samples about 2280 rural households in Hebei province [J]. *Guangdong Agricultural Sciences*,2014(23):206-209.
13. Liang Jining, Wang Yuanwen, Duan Kun, Deng Chunyang. Discussion about the factors of affecting the rural households' willingness to transfer farmland-- based on field investigation and Logistic regression analysis of principal component improvement [J]. *Value Engineering*,2012,(02):304-306.
14. Liu Chen, Shao Zhanlin, Yang Junxiao. Logistic model analysis of the rural households' willingness to transfer land and its factors-- taking Manas county in Sinkiang as the case [J]. *Hunan Agricultural Sciences*,2013,(09):121-124.
15. Qing gu, Xin Chaoqun. Analysis on the various factors of affecting rural households' willingness to transfer land and the countermeasures and proposals-- based on the investigation of rural households in Dalian City [J]. *Journal of Sichuan*

Economic

Management

in rural area,China [J]. Journal of Xinjiang Normal

Institute,2015,(02):32-38.

University(Chinese Edition of Philosophy and

Social Sciences),2015,(04):114-119.

16. Lu Zeyu, Chen Xiaoping. The current situation, problems and countermeasures of land transfer

