Theoretical and Empirical Research on Influential Factors of Rural Land Transfer: Based on the Perspective of Occupation Differentiation and Pension Security Mode

Xu Hengzhou*

School of Management, Tianjin University, Tianjin, P.R. China, 300072

Abstract:

This paper acquires data through farmer questionnaire survey of Nanjing city, and employ logistic model to empirically analyze the relationship between farmer occupation differentiation, pension security and rural land transfer. The results show that education, occupation category, non-agricultural career skill, business pension security, land transference rights and land tenure security all have remarkable positive effect on rural land transfer, family pension security has remarkable negative effect on rural land transfer, however age, non-agricultural income proportion, population of agricultural labor force, social pension security, land mortgage rights have no significant effect on rural land transfer. Based on above conclusions, this paper made some policy recommendations which include developing non-agricultural industry and providing non-agricultural employment, advancing technology culture and career competency of rural labor force, establishing rural social security system.

Key words: Occupation differentiation of farmers; Pension security; land transfer; Nanjing City

1. Introduction

With the development of industrialization and urbanization, rural labour force of developed area gradually transfer to non-agricultural industry, this made the increase of non-agricultural employment proportion and the weakness of dependence on rural land, at the same time, land moderate scale management induced by the adjustment of agricultural industrial structure, these factors promote the

*Corresponding author: Xu Hengzhou. Tel: +86 22 27403971
E-mail address: xuhengzhou@163.com
Foundation: Supported by Research Program of Humanities and Social Sciences of Ministry of Education of China (No.: 09YJC630164).
transfer of rural land. However, rural land transfer in a great degree closely related to farmer occupation, income and dependence on rural land.

Differentiation of farmers is a new phenomenon recently in rural area that cannot be neglected. LU Xueyi consider the farmers have differentiated eight stratum: agricultural labours, peasant workers, employees, peasant intellectual, individual workers, individual business, private entrepreneurs, township enterprisers and executives of rural affairs. The form of farmer differentiation is occupation differentiation; the essence is economy differentiation. Previous study showed that security function of land is a main factor to baffle the rural land transfer compared with remnant property rights. Actually, farmer differentiation result in the different dependence on land, different decision-making of rural land transfer, and there is significant difference on the cognition of land security function. For the farmer of different occupation, because of the difference of income, living environment, risk from pension security and pension investment, to some extent, this make farmer choose different mode of pension security, and also bring impact on rural land transfer. At present, there are few studies on farmer differentiation and land transfer, representatively, CHEN Chengwen and ZHAN Heping analyzed the recognition and choice of different peasant stratum for land transfer and its impact on peasant stratum.

However, above studies don’t analyze the thinning of land rights structure, and also don’t make a deep analysis of cognition for land security function, only research the relationship between land transfer and peasant household that all be consider as a whole. Based on this, this paper acquires data through farmer questionnaire survey of Nanjing city, combine farmer differentiation with the theory of pension security; empirically study the relationship between farmer occupation differentiation, pension security and rural land transfer, and enrich the study on rural land transfer theoretically.

2. Theoretical analysis and research hypothesis

2.1 Theoretical analysis

Following the hypothesis of economic and rational man, individual also attempt to discern and choose the system arrangement that be favourable for oneself. In traditional rural society, people land ratio become change because of natural change of population, farmers have reached agreement to adjust land termly because they may encounter these circumstances. With the rapid development of industrialization and urbanization, farmers gradually swarm into city and other non-agricultural sectors, and then the main income of farmers have not been come from agriculture, so the preference of farmers for land property rights and land security function are also different.

The characteristics of farmer differentiation are the difference of occupation, this further affect the income of different stratum, so the level and structure of income come forth difference. The household that have more chance of non-agricultural employment, bigger proportion of non-agricultural income interested in the rights of land transfer, however the household that have a few chance of non-agricultural employment expect to posses the long-term and stable rights of land. During the process of industrialization, it is very important to endow rural land with the transferable rights, in this period; it may be recommendable to provide the combination of stable and transferable rights.

With the economic development and social transition, occupation of farmers have been differentiated into various subgroups, there are different pension security need for various farmer stratum, so it is necessary to consider the different demand during the construction of rural pension security. On the one hand, with the differentiation of farmer occupation, there has been a trend of diversification of pension concept. Farmers that mainly depend on agriculture are more likely to choose the mode of family pension, because they are subjected to little influence from outside, and the lack for the risk awareness of future pension. Farmers that mainly depend on non-agricultural employment are likely to rely on their own effort to realize the pension. On the other hand, income have direct influence on pension demand and payment affordability of farmers.
Farmers have the characteristics of heterogeneity. There are great difference of resource endowment for different household, so the same policy of land transfer may has different income effect for farmers of different occupations. However, the selection of land tenure is the trade-off process between risk cost and proceeds. So land tenure with the characteristics of equal allocation has its rationality; especially in the undeveloped areas, the social security function of land tenure is particularly outstanding. In some conditions without land rental and transfer land, routine adjustment disperse the risk of income.

2.2 Research hypothesis

**Hypothesis 1.** Desire for land transfer was affected by different occupational consciousness and stratum character. He Zhenhua thought that the significance of land for farmers is more important than land rent, whether farmers agree with land transfer or not, it is decided by the significance of land for farmers, not by efficiency of land transfer. The factors that influence the significance of land for farmers including income per capita, education, development level of non-agricultural industry, resources endowment, land per capita.

**Hypothesis 2.** there is behaviour choice difference of land transfer for farmers of different occupations. It appears as the mode and approach of land transfer. Farmers that in areas of different economic development and location also have different attitude towards land transfer.

**Hypothesis 3.** because of occupation differentiation and income, there are different cognitions on land security function for farmers, so this further affect the land transfer. Farmers who have low income or mainly engaged in agricultural production may attach importance to land security function, farmers who have high income or mainly engaged in non-agricultural industry may depend on social or commercial pension.

3. Data and methodology

3.1 Sources of data

This paper employed the data from farm-household questionnaire of Nanjing city in Mar. to Apr. of 2007 and Jan. of 2008. the method of multi-stage random sampling and systematic sampling are employed, totally 400 questionnaires were sent out, and 372 valid ones were collected, with the effective rate of 93%. When selecting the sample point, two respects are fully considered, for one thing, the phenomenon of land transfer is frequently, for another, occupations of farmer appear diversified. The content of questionnaire including the basic situations of family of peasant household, mode of pension security, cognition on land tenure and land transfer.

3.2 Selection of model

Analyzing the attitude towards land transfer, this paper reject the viewpoint of neutral and know nothing, and changing dependent variable into dichotomous variable (consent and disagree), so binary logistic regression model can be employed.

With \( y_i \) as dependent variable, \( x_i \) as independent variable, the number of independent variable denoted by \( i \), establishing the regression model of binary logistic.

\[
p = F\left( \alpha + \sum \beta_i x_i \right) = \frac{1}{1 + e^{-(\alpha + \sum \beta_i x_i)}} \tag{1}
\]

Logit commutation usually be used during regression analysis, then we can get the regression linear model between probability function and independent variable:

\[
\ln\left( \frac{p}{1-p} \right) = (\alpha + \sum \beta_i x_i) = b_0 + b_1 x_1 + b_2 x_2 + \ldots + b_n x_n + \varepsilon \tag{2}
\]
In model (2), dependent variable represents whether selection or not. If selection, assigning value 1 to dependent variable, contrarily, the value is 0. Independent variable represents characteristic of peasant stratum, type of land tenure and mode of pension security, such as age, education, income, long-term contraction, transferable rights, family pension, social pension and commercial pension. $\epsilon$ is stochastic error.

3.3 Variable enactment

The detailed explanation of variables as follows:

<table>
<thead>
<tr>
<th>sort</th>
<th>variable</th>
<th>mark</th>
<th>Definition of variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature of farmer individual</td>
<td>Age</td>
<td>$X_1$</td>
<td>Less than 25 years = 1; 25 ~ 45 years = 2; 45 ~ 60 years = 3; over 60 years = 4</td>
</tr>
<tr>
<td></td>
<td>Education</td>
<td>$X_2$</td>
<td>Below primary school = 1; Junior school = 2; Senior school = 3; above senior school = 4</td>
</tr>
<tr>
<td></td>
<td>Sort of employment</td>
<td>$X_3$</td>
<td>Agricultural labours = 1; Peasant workers = 2; Employees = 3; Peasant intellectual = 4; Individual workers and individual business = 5; Private entrepreneurs = 6; Township enterprisers = 7; Executives of rural affairs = 8</td>
</tr>
<tr>
<td>Feature of peasant household</td>
<td>Proportion of non-agricultural income</td>
<td>$X_4$</td>
<td>Proportion of non-agricultural income (%)</td>
</tr>
<tr>
<td></td>
<td>Number of agricultural labor</td>
<td>$X_5$</td>
<td>Number of agricultural labour (person)</td>
</tr>
<tr>
<td></td>
<td>Skill of non-agricultural employment</td>
<td>$X_6$</td>
<td>No = 0; Yes = 1</td>
</tr>
<tr>
<td></td>
<td>Family pension</td>
<td>$X_7$</td>
<td>No = 0; Yes = 1</td>
</tr>
<tr>
<td></td>
<td>Social pension</td>
<td>$X_8$</td>
<td>No = 0; Yes = 1</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
<td>$X_9$</td>
<td>No = 0; Yes = 1</td>
</tr>
<tr>
<td>Land transfer and cognition of land tenure</td>
<td>Transferable rights</td>
<td>$X_{10}$</td>
<td>No = 0; Yes = 1</td>
</tr>
<tr>
<td></td>
<td>Stability of land tenure</td>
<td>$X_{11}$</td>
<td>The years that farmers owned the land</td>
</tr>
<tr>
<td></td>
<td>Mortgage rights</td>
<td>$X_{12}$</td>
<td>No = 0; Yes = 1</td>
</tr>
</tbody>
</table>

4. Results and analysis

4.1 Empirical results

This paper employed the statistical software of Spss13.0 to make an analysis of logistic regression. Simultaneously, variables of model are explained by odds ratio, namely $\text{Exp}(B)$. The estimation results of model as follows:

<table>
<thead>
<tr>
<th>variable</th>
<th>Coefficient</th>
<th>Standard error</th>
<th>Wald test</th>
<th>Significance</th>
<th>EXP(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-1.216</td>
<td>0.527</td>
<td>1.263</td>
<td>0.156</td>
<td>0.879</td>
</tr>
<tr>
<td>Education</td>
<td>0.615**</td>
<td>0.273</td>
<td>5.628</td>
<td>0.034</td>
<td>1.556</td>
</tr>
<tr>
<td>Proportion of non-agricultural income</td>
<td>3.416***</td>
<td>2.324</td>
<td>7.563</td>
<td>0.006</td>
<td>2.248</td>
</tr>
<tr>
<td>Number of agricultural labor</td>
<td>-0.472</td>
<td>0.645</td>
<td>0.876</td>
<td>0.214</td>
<td>0.756</td>
</tr>
<tr>
<td>Skill of non-agricultural employment</td>
<td>0.743*</td>
<td>0.875</td>
<td>3.758</td>
<td>0.062</td>
<td>1.725</td>
</tr>
<tr>
<td>Family pension</td>
<td>-1.634***</td>
<td>2.642</td>
<td>8.262</td>
<td>0.005</td>
<td>0.822</td>
</tr>
<tr>
<td>Social pension</td>
<td>1.673</td>
<td>1.526</td>
<td>2.042</td>
<td>0.173</td>
<td>1.235</td>
</tr>
<tr>
<td>Commercial pension</td>
<td>2.137*</td>
<td>2.348</td>
<td>3.652</td>
<td>0.070</td>
<td>1.425</td>
</tr>
</tbody>
</table>
4.2 Analysis of results

4.2.1 Influence of the features of farmer individual

Education and sort employment have important influence on land transfer, and respectively through the significance level 5%, 1%. Whereas, age do not through the significance test, its coefficient is minus, this showed that under the condition of other variables keep constant, the bigger the age, the more unwilling they transfer land, this because that the aged farmers consider the land as the tool of pension security. The coefficient of education is positive, this showed that under the condition of other variables keep constant, the more advanced the education, the more willing they transfer land, this mainly because that they have the skills of non-agricultural employment, and acquaint themselves with the policies of rural land. The coefficient of occupation is positive, this showed that the further they away agricultural employment, the more important they attach to land transfer.

4.2.2 Influence of the features of peasant household

The variable of proportion of non-agricultural income and number of agricultural labour are not significant statistically, from the regression coefficient, the higher the non-agricultural income, the more willing they transfer land, the more the number of agricultural labour, the more unwilling they transfer land, and more important they attach to rights of land contraction. The variable of skill of non-agricultural employment through the significance level 10%, and the coefficient is positive, this showed that the willingness of land transfer for farmer with non-agricultural skills is higher than the farmers that don’t have non-agricultural skills, and the probability of land transfer is 1.725.

4.2.3 Influence of the variables of household security

From the results of regression, family pension and commercial pension have significant influence on land transfer, and through the significance level 1% and 10% respectively. The coefficient of family pension is minus, this showed that the farmers that depend on family pension are not apt to make land transfer, mainly because of traditional impacts and without perfect pension system. The farmers that mainly depend on commercial pension are apt to make land transfer, because they have the skills of non-agricultural employment and non-agricultural income. The variable of social pension didn’t through the significance test, whereas, from the view of regression coefficient, the farmers that attend social pension are apt to make land transfer.

4.2.4 Influence of the variables of land transfer and cognition of land tenure

The mortgage rights didn’t through the significance test, but from the regression coefficient, we can affirm that the farmers that consider the possession of mortgage rights are inclined to make land transfer. Transferable rights and stability of land tenure all through the significance level 5%, and the coefficients are positive. This showed that the probability of land transfer for farmers that consider possession of mortgage rights is 1.354 times as much as the farmers that didn’t consider. Besides, when boosting one unit of stability of land tenure, the probability of land transfer will increase 53.6%.

5. Conclusions and policy implications
According to above empirical study, we know that education, occupation category, non-agricultural career skill, business pension, family pension, land transference rights and land tenure security all have remarkable effect on land transfer. Education, occupation category, non-agricultural career skill, business pension security, land transference rights and land tenure security all have positive relationship with land transfer, family pension security has negative effect on land transfer.

Based on above conclusions, policy implications can be put forward:

Firstly, it should be to develop non-agricultural industry, provide non-agricultural employment and sources of income, and then to satisfy the income maximum and professional target of different peasant stratum, to provide substantial basis for land transfer.

Secondly, to advance technology culture and career competency of rural labour force, foster the resources endowment advantage for peasant stratum, and provide professional technology for farmers.

Thirdly, to gradually establish rural social security system. To realize the social security integration of urban and rural areas step by step, to weaken the social security function of land, and the unified social security system should be provided by government.

Lastly, to actively propagandize the basic policies about rural land transfer and social security system, to enhance the cognition and understandings of farmers for new policies, and to create favourable social environment for rural land transfer.

References


