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How Does the Heterogeneity of Family Structure Affect the Area of Land Transferred Out in the Context of Rural Revitalization?—Experience from CHIP 2013

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Abstract: Using the sample data of rural households in China's income survey (CHIP 2013), this paper divides the family structure into elite and incomplete families and analyzes the impact of family structure's heterogeneity on land transferred out. The Tobit and Ordinary Least Squares (OLS) models are applied to achieve the study's objectives. The results show that the elite family has a significant positive impact on the paid land subcontract area, while the incomplete family is not significant. After further refining the elite families, it is found that the influence of the families with the political status of Party members (non-grassroots cadres) on the land transfer area is more significant, while the influence of the families with the status of grassroots cadres on the land transfer area is less significant. Then, the formation mechanism of the difference between these two is discussed, which may be explained by the heterogeneity of their endowment structure, functions, and livelihood attributes. After a series of robustness tests, the results still show that elite families significantly positively impact the area of land transferred out. Finally, based on the differences in land transfer areas and the consequences of different resource endowments, the corresponding countermeasures and suggestions are put forward from the aspects of strengthening grassroots governance, legal awareness, and establishing and improving the protection mechanism of vulnerable rural groups.

Keywords: family structure; heterogeneity; area of land transfer; Tobit model

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1. Introduction

A significant challenge to mankind in this era is food security [1,2]. A report from FSIN (2018) indicates that 51 countries globally (approximately 124 million people) are encountering the issue of food insecurity as of 2017 [3]. The United Nations Sustainable Development Goals' (SDGs) first and second concerns emphasize eradicating extreme levels of poverty through unrestricted access to sustainable food and nutrition for good health and well-being [4]. However, one needs agricultural land to produce food for sustainable development and ensure food security. Therefore, the relevance of accessing the determinants of land transfer, a booster of proper land use, has been a concern for scholars in agricultural economics and geography in developing nations such as China [5–8].

In the past few years, under the background of the reform of the rural property rights system, land transfer has developed fast in much countryside of China and has become an important factor activating rural lands of China and improving the revenue of peasants. This shows that China's rural land transfer institution has made phased achievements. According to the Ministry of Agriculture, by the end of 2016, the area of rural land transfer in China has achieved 471 million mu. The No.1 document of the Central Committee in 2019 emphasized: "improving the standardized management system of land transfer and developing various forms of moderate-scale agricultural operations". Predictably, with the in-depth promotion of the rural revitalization strategy and the acceleration of the pace of national agricultural modernization, the status of land fragmentation management can

no longer meet the development needs of scalable, modern, and intelligent agriculture. Undoubtedly, the scale of land transfer will expand continually in the future. In the context of the continuous introduction of various favorable policies for benefiting peasants at the central and local levels, more and more peasants have realized the value of the land.

On the one hand, wealthy families can reach scalable management by land transfer and benefit from land appreciation. On the other hand, rural families with relatively low human capital can transfer their free land to obtain some rent. Thus, what impact will the heterogeneity of family structure have on land transfer? Based on the view of supply and demand of land transfer, some scholars found that land transfer may result in widening income disparities within rural areas [9–11]. Some scholars have specifically analyzed the influence of political capital on the willingness of rural land transformation and found that village cadres have more power advantages in the process of rural land transfer [12,13]. Land transferred out is the front-end link of land transfer; the discussion of all related issues, including the "elite capture" of land transfer, inevitably needs to be placed in the land transferred out link; however, the impact of family structure heterogeneity on the area of land transferred out as the front end of land transfer is one of the more core issues. This paper focuses on the following two research questions. First, in the process of rural land transfer, are elite families more likely to transfer out of the land compared to non-elite families? Will it further aggravate the "Matthew effect" between the rich and the poor in rural areas? Second, within the rural elite families, is there heterogeneity between party members and grassroots cadres that then affect the area of land transfer? Undoubtedly, in the context of rural revitalization, with the combination of various types of capital and the land, research on the effect of family structure heterogeneity on land transfer area and the conclusions are conducive to better grasping the front-end of land transfer, maintaining the stability of the order of land transfer, helping local governments to resolve various contradictions and disputes caused by land transfer, maintaining local harmony and stability, and, thus, maintaining the economic and social achievements of building a well-off society in an all-round way.

2. Literature Review

In domestic and foreign scholars' studies on land transfer, the relevant influencing factors are mainly investigated in three sequential dimensions: before-during-after. Regarding the "before land transfer" scenario, the studies mainly focus on the impact of individual endowment differences of farmers or households in different regions on willingness to transfer land or the area of the transfer or transfer out deadline. Regarding the "during land transfer" scenario, the studies mainly focus on the consideration of the transaction method or the form of land transfer. Regarding the "after land transfer" scenario, the studies mainly focus on the impact of land transfers on the changes in the welfare of the transferee.

Many scholars have conducted relevant research on the impact of family, regional, and individual endowment differences on land transfer willingness, decision-making, or transfer area. In terms of family endowment differences, the employment situation of family members is one of the important factors affecting the willingness to transfer land in rural areas. Research shows that if a family member can obtain a stable non-agricultural job in urban areas, it will promote the decision-making of family land transfer, and the member will have the greatest power in decision-making [14–17]. Further, the stronger the willingness of farmers to seek non-agricultural jobs in cities, the more inclined they are to long-term land transfer [18]. At the same time, the family income structure also has an impact on land transfer. The higher the proportion of migrant workers' labor income in the total household income, the more likely farmers are to choose land transfer or abandonment [19]. From the perspective of regional differences, scholars used a panel dataset of 171 Chinese cities that developed high-speed rail infrastructure from 2005 to 2012 and applied the SEM model to find that the expansion of the high-speed rail network had a significant impact on the circulation of agricultural land, and the impact of high-speed rail on the circulation of agricultural land in the western region is five times that in the

eastern region [20]. Specific to the differences in various rural location factors, the study found that rural site resources have a significant impact on the circulation of agricultural land. Communities with good infrastructure, that are close to towns, with sufficient labor force, and with high economic input and output do not rely on agricultural land, but natural conditions and well-connected communities rely more on agriculture [21]. From the perspective of individual endowment differences among farmers, the level of financial knowledge possessed by farmers obviously affects land circulation, and financial literacy has a greater impact on land inflow than outflow [22]. Based on the survey data of 8031 households with 27 identities in China in 2014, scholars found that the experience of famine in the early years impacted land circulation [23]. In addition, the older the household head is, the stronger the attachment to the land, and the less likely the household head is to transfer land [24]. In addition, the conclusions of academic research are relatively consistent where the degree of risk perception and attitude, the land property rights system, and the degree of awareness of land policy also significantly affect farmers' willingness to transfer land [25–27].

Secondly, with consideration of the form of land transformation transaction or land transferred out, some scholars have found that land cooperatives promote farmers' land transfer [28]. Meanwhile, some scholars found that when comparing the land stock cooperation mode with rural cooperatives as the main body, against the land leaseback and re-contract mode with "village collective + planting leading firm" as the primary management body, the improvement of farmers' livelihood capital was more evident [29].

Finally, in terms of the impact on the welfare of land transferees after transferring, one study found that the welfare effect of the transferred-out farmers was higher than that of the transferred-in farmers [30]. In contrast, one research shows that the subjective welfare of farmers who transfer farmland will not increase. Further analysis shows that the subjective welfare of farmers who trade with acquaintances is higher than that of farmers who trade with non-acquaintances [31].

In summary, most previous studies have focused on the factors influencing willingness in each link before-during-after land transfer, the transaction transfer mode, and the subsequent net welfare value; especially, the literature focusing on farmers' willingness to transfer their land based on their endowment characteristics is fruitful and has formed a useful reference for subsequent studies. However, there is limited literature on the effect of heterogeneity of endowments on the area of land transferred out based on different household structures, and this is where this paper is expected to make a marginal contribution.

3. Materials and Methods

3.1. Research Hypothesis

Traditionally, family structures mainly include nuclear, joint, main, single-parent, and broken families, and different family structures have prominent heterogeneity in resource endowment. Different household structures related to different household life cycles and different household life cycles influence the relevant decision of the family, such as entrepreneurship, land transfer, land scale operation, household consumption, and labor supply [32–35]. Further, households are divided into elite households and handicapped households, and ordinary households. Generally, elite households are relatively rich in various resources. They tend to have more advantages in household decision-making. Still, they then may capture some national policy dividends and then become "elite capture," and "elite capture" exists mainly in resource allocation and precise poverty alleviation in rural areas of China [36–38]. For other households, especially broken families, the existence of "elite capture" may lead to a more serious policy deviation. Based on the above principles, this paper focuses on whether the heterogeneity of family structure affects land transfer area from the actual land transfer area. Moreover, this paper divides rural households into elite, broken, ordinary households based on existing studies, and focuses on the different influences of elite family and broken family on land transfer, and then explores whether

there is a "crowding out effect" in China due to the heterogeneity of family structure in the size of the land transferred out. Based on relevant studies, this paper proposes the following hypotheses.

Hypothesis 1. *Elite households have an advantage in land transfer and are more likely to transfer land.*

In this paper, the rural elite households are defined as political elite households, divided into households with party members and households with grassroots cadres. There is little literature on the effect of the two households on the difference in their land transfer area. The existing studies generally generalize the two households as political capital. However, in real life, for party members and grassroots cadres in rural areas, there are indeed some differences between them. Party members (non-grassroots cadres) in rural areas are mostly engaged in non-agricultural work and have a looser attachment to the land, so they are able to grasp the policy dividend of land transfer and are more likely to transfer their family land for rent. For grassroots cadres, their main workplaces are in rural areas, and they are more or less engaged in agriculture-related work and more closely connected with the land. Based on the status, hypotheses 2 and 3 are proposed as follows.

Hypothesis 2. *Party households have an advantage in land transfer and may transfer a larger land area.*

Hypothesis 3. *The advantage of grassroots cadres' families in land transfer is not obvious, and they are more closely connected with the land, which has no significant effect on land transfer area.*

3.2. Data Resource

This paper uses data from the 2014 survey of the China Household Income Project (CHIP). In July and August 2014, the China family income project (CHIP) conducted the fifth survey. As the main information collected in the survey is related to the income and expenditure in 2013, it is named CHIP 2013, which is consistent with the previous four surveys. This survey is supported by the National Natural Science Foundation of China and the National Bureau of Statistics (NBS) and organized by the China Income Distribution Institute of Beijing Normal University. The survey was conducted by the National Bureau of statistics. The CHIP 2013 sample is from the annual integrated household survey conducted by the National Bureau of statistics in 2013, which includes 160,000 households in 31 provinces. These samples were screened in the eastern, central, and western regions by a systematic sampling method, involving 15 provinces, 126 cities, 234 counties, 18,948 households, 64,777 people, 7175 urban households, 11,013 rural households, and 760 peasant households. CHIP is considered as one of the best public data sources on household income and expenditure in China [39].

All in all, CHIP 2013 is a nationally representative rural household registration survey data sample, and the data are the latest data source of the database. In addition, in the past three years, studies have shown that under the background of China's vigorous implementation of targeted Poverty Alleviation Policies, the phenomenon of "political elites being captured" still exists in rural areas [40]. Therefore, it can be reasonably speculated that most of the rural areas in China have the national conditions of "elite capture". Therefore, the data of CHIP 2013 used in this paper are timely and representative, and also conform to the current situation of rural areas in China.

3.3. Variable Description

3.3.1. Dependent Variable

The dependent variable in this paper is the area of land subcontracted to individuals for a fee. Land transfer is divided into transfer-in and transfer-out, and the CHIP2013 data also mention both transfer-out and take-over in the section of management rights

flow. For inward contracting, only the total area of inward contracting and the average price per mu of inward contracting were asked, while for outward contracting, the area, price, and destination of outward contracting were asked in detail. The destination of subcontracted land was asked separately for the area of land subcontracted to individuals with compensation, the area of land subcontracted to individuals without compensation, the area of land subcontracted to enterprises or large agricultural households, and the area subcontracted to village collectives with or without compensation. In conjunction with the research theme, this paper focuses on the effect of household structure on the area of land subcontracted to individuals with compensation. There are two main reasons for this: first, most of the subcontracting without compensation belongs to the subcontracting between neighbors and relatives, and there are fewer interests; secondly, the subcontracting to enterprises or large agricultural households and village collectives is not an individual and family decision, but more of an overall regional planning, and the subcontracting area and price are roughly the same as the situation in the region, so the influence of family structure is not obvious. Based on this, the dependent variable of this paper is the area of land subcontracted to individuals for a fee.

3.3.2. Independent Variable

The independent variable in this paper is family structure. According to different family labor and political capital, this paper classifies family structure into elite and incomplete families. Some scholars define the elite as the household with family members who are local village cadres or the household with relatives who are local village cadres [41]. While elite families mean that they have more abundant social capital in the local area, this definition is not comprehensive. Based on this, this paper defines households with party members or cadres as elite households. Except for ordinary households, elite households correspond to broken households or a disintegration of social structure family. In general, behaviors tend to change family structures and gradually begin to disintegrate into incomplete families, such as having a family member with chronic illness, divorce, incarceration, HIV infection, and disputes with neighbors [33]. Based on this, this paper defines households with an incomplete person, divorced householder, or poor health status of the householder as incomplete households. Thus, elite and incomplete households are dummy variables (elite households = 1; non-elite households = 0; incomplete households = 1; non-incomplete households = 0). In addition, the variables were also replaced by the degree of elite and the degree of disability for the analysis, with the degree of elite and the degree of disability being continuous variables.

3.3.3. Control Variable

In addition to household structure, other variables of individual characteristics and household characteristics also affect land transfer. Variables of individual characteristics include gender, age, education, ethnicity, and health status of the householder, while variables of household characteristics include the logarithm of household income, household land area, labor ratio, and participation in professional cooperatives. Household characteristics also affect land transfer. Variables of individual characteristics include gender, age, education, and ethnicity.

Table 1 shows the mean statistics of the variables used in this paper. Column (1) is the mean statistics of the full sample; column (2) is the mean statistics of the variables related to the elite household; column (3) is the mean statistics of the variables related to non-elite households. In the full sample, the mean of the area of land subcontracted to farmers for compensation is 0.563 mu, while for elite households, the mean of the area of land subcontracted to farmers for compensation is 0.762 mu. Compared with 0.523 mu of non-elite households, it is 0.239 Mu higher. The descriptive results also show that the percentage of elite households in the total sample is 16.6% and the percentage of incomplete households is 8.2%. The mean of other variables can be accessed from Table 1 and is not repeated here.

Table 1. Descriptive statistics of variables.

Variables	Variables Description	Total Sample (1)		Elite Family (2)		Non-Elite Family (3)	
		Obs	Mean	Obs	Mean	Obs	Mean
Land Out	Land area subcontracted to individuals for compensation.	3834	0.563	636	0.762	3198	0.523
FM_str1	Dummy variable, Surrogate indicators for elite families (elite households = 1; non-elite households = 0).	3834	0.166	636	-	3198	-
FM_str0	Dummy variable, Surrogate indicators for incomplete families (incomplete households = 1; non-incomplete households = 0)	3834	0.082	636	0.099	3198	0.079
Party	Does the family have party members (1 = yes, 0 = no)	3828	0.106	636	0.637	3192	0.001
Cadre	Does the family have village cadres (1 = yes, 0 = no)	3817	0.044	636	0.264	3181	0.000
Gender	Gender of the sampled group (1 = Male, 0 = Female)	3834	0.907	636	0.890	3198	0.910
Age	Age of the householder	3834	53.402	636	55.115	3198	53.061
Marriage	Is the householder married (1 = yes, 0 = no)	3834	0.987	636	0.998	3198	0.985
Education	Education years of the householder	3763	7.248	629	8.039	3134	7.090
Ethnicity	Is the householder Han nationality (yes = 1, no = 0)	3834	0.930	636	0.925	3198	0.932
Health_condition	Health status of the householder (1 = excellent, 2 = good, 3 = general, 4 = bad, 5 = Incapacity to work)	3828	3.845	632	3.943	3196	3.826
Ln_income	Logarithm of total household income	3798	10.412	632	10.577	3166	10.379
Ratiolabor	Labor force (Family members aged 16 to 60)/Total number of families	3834	0.580	636	0.581	3198	0.580
Pension_insurance	Whether to participate in pension insurance (1 = yes, 0 = no)	3829	0.874	636	0.912	3193	0.867

3.3.4. Model Building

The subject of this paper is the effect of family structure heterogeneity on land transfer area to investigate whether elite households differ from incomplete households in land transfer. With the help of existing studies, family structure is set as the main explanatory variable, land transfer area as the explained variable, and individual characteristics and household characteristics as control variables. According to the research hypotheses, the following models are set-up in this paper.

$$\text{Land outi} = \alpha + \beta 1\text{FM\_st1} + \gamma i\chi i + \varepsilon i \quad (1)$$

$$\text{Land outi} = \alpha + \beta 1\text{FM\_st0} + \gamma i\chi i + \varepsilon i \quad (2)$$

$$\text{Land outi} = \alpha + \beta 1\ \text{FM\_st1} + \beta 2\text{FM\_st0} + \gamma i\chi i + \varepsilon i \quad (3)$$

The above-explained model variables are all land area subcontracted to individuals for a fee, and the main explanatory variable in model (1) is elite households; the main explanatory variable in model (2) is incomplete households; model (3) is a full-variance model, and, at the same time, the two variables of elite family and whether it is an incomplete family are added. Land out in models (1)–(3) means land area subcontracted to individuals for compensation. FM__strl in the above model is a proxy for elite households, FM_ str0 is a proxy for incomplete households, and χi are control variables. In the empirical analysis

and robustness test sections, the independent variable measures are replaced in order to analyze the influence mechanism and test the robustness of the results.

4. Results and Discussion

4.1. Impact of Elite Households on the Area of Land Transferred Out

The explained variable in models (1)–(3) are all land areas subcontracted to individuals for a fee, and the values are continuous variables. In order to avoid the influence of outliers, the key continuous variables in this paper are all made to shrink the tails (Winsor2), and the dependent variables take most of the values of 0. Therefore, Tobit model regression is mainly used. In order to test the existence of multicollinearity, OLS regression was also attempted and all models had variance inflation factors (VIF) less than 2, so the existence of multicollinearity was excluded.

Table 2 shows the results of the hypothesis for elite households and the area of land transferred out, with the key explanatory variable in model (1) being "whether or not the household is elite", and does not control whether it is a disabled family. The key explanatory variable in model (2) is "whether or not the household is incomplete" and does not control for whether or not the household is elite; Model (3) contains "whether or not the household is elite" and "whether or not the household is incomplete". Model (3) contains two dummy variables, "whether elite" and "whether incomplete".

Table 2. Benchmark regression results.

Variables	(1)	(2)	(3)
FM_str1	0.242 ***		0.240 ***
	(0.064)		(0.064)
FM_str0		0.068	0.052
		(0.090)	(0.090)
Gender	−0.011	−0.027	−0.013
	(0.082)	(0.083)	(0.082)
Age	−0.004	−0.002	−0.004
	(0.002)	(0.002)	(0.002)
Marriage	−0.156	−0.145	−0.155
	(0.215)	(0.216)	(0.215)
Education	−0.002	0.004	−0.002
	(0.010)	(0.010)	(0.010)
Ethnicity	0.050	0.038	0.051
	(0.092)	(0.093)	(0.092)
Health_condition	−0.061 **	−0.052 *	−0.057 **
	(0.027)	(0.028)	(0.028)
Ln_income	0.005	0.018	0.006
	(0.033)	(0.033)	(0.033)
Ratiolabor	−0.108	−0.104	−0.103
	(0.079)	(0.079)	(0.079)
Pension_insurance	0.083	0.094	0.082
	(0.070)	(0.070)	(0.070)
Constant	1.023 **	0.772 *	0.986 **
	(0.425)	(0.427)	(0.430)
Observations	3720	3720	3720
Pseudo R^2	0.00129	0.00129	0.00129

Note: Robust standard errors in parentheses. *** represents $p < 0.01$; ** represents $p < 0.05$; * represents $p < 0.1$.

From model (1) in Table 2, we can see that the coefficient corresponding to whether it is an elite household is 0.242 and is significant at the 1% level, which statistically indicates that elite households significantly increase the area of land subcontracted to individuals for a fee. In contrast to model (2), replacing the variable of elite households with incomplete households changes the coefficient to 0.068 and the coefficient is no longer significant, indicating that incomplete households do not have a significant effect on increasing the area of land subcontracted to individuals for compensation. The sample in model (1) may

be both elite and incomplete households (for example, a household with a party member and an incomplete person), but not controlling for incomplete households leads to some bias in the results obtained. Hence, model (3) further controls for incomplete households based on model (1), and the results are basically consistent with model (1), with a coefficient of 0.240 for elite households and significant at the 1% level. From the results of models (1)–(3) in Table 2, it can be verified that elite households contribute significantly in the area of land subcontracted to individuals for a fee, and research hypothesis 1 is verified. This result indicates that the less privileged households are mostly at a disadvantage in terms of area of land subcontracted to individuals for compensation as these elite households may use your power to influence the land rental market. This gives a clear indication that China's agenda to eradicate poverty through rural revitalization should be strengthened in favor of less privileged households to make them self-sufficient to partake in the land rental market.

4.2. Mechanism Inquiry

Table 2 presents the effect of elite households on the area of land subcontracted for a fee but does not explore the inner influence mechanism. As mentioned earlier, this paper defines elite households as households with party members or village cadres in the household, which are dummy variables in the baseline regression. Exploring the influence mechanism of elite households on land transfer can be further divided into elite households, and groups with party members in the household, village cadres in the household, and households with a college education or above are included in different regression models to observe their influence on the area of land transferred out. Table 3 shows the estimation results after dividing the independent variables; the main explanatory variable of model (1) is whether the household has party members, the main explanatory variable of model (2) is whether the household has village cadres, the main explanatory variable of model (3) is whether the household has members with a college education or above, and the Tobit model is still used for estimation because the dependent variable 0 takes more values. The results are shown in Table 3.

Model (1) shows that households with party members will significantly increase the area of land subcontracted for compensation, while model (2) shows that households with village cadres do not affect the land transfer area significantly. Model (3) controls for the variable "whether the household has village cadres" based on model (1), the results still show that households with party membership significantly increase the area of land transfer, and research hypothesis 2 is verified. Party members and village cadres with political status indicate that their households are in the elite class of rural society, which may lead to the problem of monopoly in the price of "land transfer" compared with incomplete households or even ordinary households. In the context of rural revitalization in China, the willingness of grassroots cadres to transfer land has increased significantly, but will the area of land transferred also increase significantly in reality? The result of this paper is "no", so research hypothesis 3 is verified, which indicates that there are certain differences between party members and village cadres when they are faced with the decision of subcontracting land to individuals for a fee. The mechanism may be like this. Party members are mostly part-time farmers and have more social capital and relationships in certain regions. Their main business is mostly not related to agriculture, so they have a stronger willingness to transfer land because of the relatively strong social capital. It is helpful for them to gain an advantageous position in land transferring negotiation, thus forming a "seller's market" pattern of land transfer, and then further improve their willingness of expanding the land transfer area. For grass cadres, they are rooted in rural areas, forming a close interest linkage mechanism with rural production and management activities and grassroots governance. On the one hand, they are conscientiously engaged in grassroots governance; on the other hand, most of their work is also related to agriculture, and they are more closely connected with land resources and have more emotion with land and form a hard constraint, coupled with the heavy section of rural grassroots affairs embedded layer by layer, resulting in them,

compared to party members (non-grassroots cadres), paying more attention to the social security function and the "livelihood support" function of land, so they are unwilling and dare not easily transfer their land on a large scale. As grassroots cadres, they naturally hope to realize scalable land transfer for better local development, but this may be only their good intention but not their ultimate practical action due to their identity, job responsibilities, and personal characteristics.

Table 3. Mechanism analysis.

Variables	(1)	(2)	(3)
Party	0.251 ***		0.274 ***
	(0.077)		(0.084)
Cadre		0.092	−0.070
		(0.114)	(0.124)
Gender	−0.027	−0.026	−0.026
	(0.082)	(0.083)	(0.082)
Age	−0.004	−0.002	−0.004
	(0.002)	(0.002)	(0.002)
Marriage	−0.155	−0.148	−0.159
	(0.215)	(0.216)	(0.215)
Education	−0.002	0.003	−0.003
	(0.010)	(0.010)	(0.010)
Ethnicity	0.042	0.035	0.042
	(0.092)	(0.093)	(0.092)
Health_condition	−0.061 **	−0.056 **	−0.060 **
	(0.027)	(0.027)	(0.027)
Ln_income	0.011	0.018	0.015
	(0.033)	(0.033)	(0.033)
Ratiolabor	−0.107	−0.107	−0.100
	(0.079)	(0.079)	(0.079)
Pension_insurance	0.083	0.092	0.083
	(0.070)	(0.070)	(0.070)
Constant	0.990 **	0.811 *	0.940 **
	(0.425)	(0.425)	(0.427)
Observations	3717	3707	3705
Pseudo R^2	0.00156	0.00156	0.00156

Note: Robust standard errors in parentheses. *** represents $p < 0.01$; ** represents $p < 0.05$; * represents $p < 0.1$. In this part of the regression, in order to obtain the net effect of party members and village cadres on the dependent variable, models (1) and (2) were repeated. In the repeated model (1), the samples whose family members had village cadres were excluded. Model (2) excludes the regression of samples whose family members have party members, and the results are consistent with the above table. Due to space reasons, it is not reported.

4.3. Robustness Test

Benchmark regression shows that elite households will significantly increase the area of land subcontracted to individuals for a fee. To demonstrate that the results of this paper are robust, a series of robustness tests are conducted below, including replacing the measures, transforming the estimation model, and changing the estimation sample.

4.3.1. Replacement of Measurement Index

In the baseline regression section, the explanatory variables are dummy variables, and households with party members, cadres, or university and higher education in the household are defined as elite households (FM_str1). In the robustness test section, the explanatory variables are replaced with continuous variables, and elite households (FM_str1) are replaced with elite degree (Elite). Similarly, the incomplete family (FM_str0) is replaced by the incomplete degree (Incomplete). The obtained results are shown in Table 4 below. In Table 4, model (3) is the full variables result, model (1) is the result without the variable of degree of incomplete relative to model (3), and model (2) is the result without the variable of degree of elite relative to model (3). Other control variables were added to all models in Table 4, and the control variable results are generally consistent with the

baseline regressions; therefore, the results are not reported. In Table 4 below, the coefficient corresponding to the degree of elite remains significant at the 1% level, indicating that as a household's degree of elite increases, it significantly increases the area of land subcontracted to individuals by that household for compensation, which is consistent with the research hypothesis and the results of baseline regression in this paper, including that the findings are relatively robust.

Table 4. Substitute explanatory variable metrics results.

Variables	(1)	(2)	(3)
Elite	0.103 ***		0.102 ***
	(0.039)		(0.039)
Incomplete		0.039	0.032
		(0.060)	(0.060)
Control var	Y	Y	Y
Constant	0.969 **	0.778 *	0.934 **
Constant	(0.426)	(0.427)	(0.431)
Observations	3720	3720	3720
Pseudo R^2	0.00129	0.00129	0.00129

Note: Robust standard errors in parentheses. *** represents $p < 0.01$; ** represents $p < 0.05$; * represents $p < 0.1$.

4.3.2. Transformation Estimation Method

In the above, Tobit models were used for estimation in all cases due to the presence of broken tails. However, for a continuous variable such as the area of land transferred out, the least squares (OLS) method is also used as a succinct method. In order to investigate whether the estimation results of this paper may change depending on the estimation method, the stability of the results of this paper is analyzed using different estimation methods. Table 5 shows the results of least squares estimation, and the coefficients and significance of the results are completely consistent with Table 2, indicating that the results estimated in this paper do not change, due to the change in estimation methods, and the results are robust and reliable. In addition, to explore whether there is multicollinearity, the posterior multicollinearity inflation factors (VIF) of the estimated results of models (1)–(3) are all between 1.01 and 1.39, so there is no multicollinearity.

Table 5. Transform Estimation Method Results.

Variables	(1)	(2)	(3)
FM_str1	0.242 ***		0.240 ***
	(0.064)		(0.064)
FM_str0		0.068	0.052
		(0.090)	(0.090)
Control var	Y	Y	Y
Constant	1.023 **	0.772 *	0.986 **
	(0.426)	(0.427)	(0.431)
Observations	3720	3720	3720
R^2	0.006	0.003	0.007

Note: In parentheses are the robust standard errors; *** represents $p < 0.01$; ** represents $p < 0.05$; * represents $p < 0.1$.

4.3.3. Changing the Estimation Sample

Although the baseline regression and model (3) in the robustness test section control for the variable "whether or not the household is incomplete", this is not as intuitive as directly using the sample with incomplete households excluded. For this reason, the samples used in the next regressions in this paper are directly excluded from the sample of incomplete households and analyzed using the Tobit model used in the baseline regression. The results in Table 6 show that the coefficient corresponding to elite households is 0.224, which is significant at the 1% level, and its results are basically consistent with the baseline

regression, once again proving that the regression results in this paper are robust and reliable, and will not change due to the sample transformation.

Table 6. Transform Estimation Sample Results.

Variables	(1)	(2)
FM_str1	0.224 ***	
	(0.067)	
FM_str0		0.021
		(0.097)
Control var	Y	Y
Constant	0.939 **	0.919 **
	(0.447)	(0.444)
Observations	3414	3097
Pseudo R^2	0.000978	0.000978

Note: In parentheses are the robust standard errors; *** represents $p < 0.01$; ** represents $p < 0.05$.

Based on different ways of robustness testing, the result of this paper is stable. Elite households significantly increase paid subcontracted land area.

5. Conclusions

5.1. Simple Conclusions

Whiles many are abandoning farmland for non-farm activities, many nations such as China are putting down strategies to ensure sustainable agricultural development, hence projecting a land transfer agenda. To help policymakers in their decision, this paper empirically analyzes the effect of family structure heterogeneity on the area of land transferred out in the current land transfer process in China, using Tobit regression, OLS regression, and a series of robustness tests, based on the conceptual definition and categorization of family structure, with data from the China Household Income Survey (CHIP)2013. Further, this paper discusses the effect of intra-elite household differentiation on land transfer area by subdividing elite rural households into those with party member status (non-grassroots cadres) and those with grassroots cadre status and finds that households with party member status have a significantly more individual land area in paid subcontracting, while households with grassroots cadre status do not have a significant effect on land transfer area. The possible explanation is that many party members (non-grassroots cadres) are part-time farmers who enjoy more social capital and more social relationships in a certain area and are more engaged in non-farm work, so they are more willing to transfer their contracted land. In addition, because of their relatively strong social capital, they have an advantageous position in the negotiation of land transfer prices and form a "seller's market" pattern of land transfer, and then want to expand the area of land transfer strongly. Meanwhile, grassroots cadres are more tied to the land and their reliance on the land is more obvious due to the social security and livelihood, and they are reluctant to easily transfer the extra land compared to the families with party membership.

5.2. Policy Implications

The above findings suggest that in the context of rural revitalization, as the frequency and intensity of land transfer activities increase, it is more important to pay attention to the crowding out effect of elite households on non-elite households, especially on incomplete households.

In particular, it is necessary to pay attention to the possible price monopoly advantage of households with party member status (non-grassroots cadres) in the seller market pattern of land transfer and to prevent the price negotiation advantage that they may form due to the large area of land transfer and their endowment advantages, which may lead to the problem of "elite capture" of land transfer. The existence of excessive rents may disrupt the normal order of land transfer in the region and may also lead to "mistakes" in

the implementation of policies in specific regions, further forming the "Matthew effect" of polarization between elite and non-elite rural households. Therefore, the land rental market may need vivid attention in order to achieve the nation's zero hunger and rural development or revitalization goals through land use intensification.

5.3. Recommendations

In the process of land transfer, the principles of the market economy and legal system should be upheld, and the bargaining power of both supply and demand sides should be fully respected. In accordance with the law of supply and demand in the land transfer market, the unlawful act of coaxing up land rents should be severely cracked down, the blocking behavior of elite families to non-elite families in various disguises of normal land transferred out should be severely cracked down, and the collusion between elite families and land transfer subjects should be prevented from low prices or undercutting of land transfer rents of non-elite families.

The relevant departments should vigorously publicize the newly revised "Rural Land Contract Law" and the newly revised "Measures for the Management of Rural Land Management Rights Transfer" through various flexible ways for the rural grassroots. On the one hand, the relevant departments need to fully respect the principle of "voluntary, paid and legal" land transfer, and let farmers know the basic meaning of the relevant laws through familiar ways and how to defend their legitimate rights and interests by legal means. On the other hand, it is also necessary to establish a fair and reasonable price negotiation mechanism between the transferor party and the transferee party within the legal framework to ensure that both elite and non-elite farm families have the right to enjoy equal opportunities for land transfer and reasonable price transactions.

First, the relevant departments should establish a modern agricultural technology training system for the disadvantaged groups in rural areas so that they can transform into "new professional farmers", who are educated, who know technology, who are good at management, and who realize the organic connection between small farmers and modern agriculture, and learn to use laws and regulations and other means to protect their rights and interests. Secondly, we should improve the educational endowment structure of disadvantaged rural families, and pay attention to the education status of the "second generation of farmers" and "third generation of farmers". In the new era, we will expand the multi-dimensional space of "knowledge changes destiny".

The study has some limitations as well. First, we only focused on family structures and how they impact China's land transfer system. However, other factors may be associated with land transfer conditions. Future studies can consider other factors and their impact on the outcome variable. Secondly, the study is narrowed or focused on China, and its results leave much to be desired; however, we believe that the discussed topic could be examined on the example of several countries. Therefore, we encourage forthcoming studies to carry on a cross-country analysis to see if they may have different or similar conclusions.

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