Factors influencing rural households' willingness of centralized residence: Comparing pure and nonpure farming areas in China

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ABSTRACT

In recent years, Chinese governments began exploring centralized residence of rural households, with a view to protecting farming land through the incorporation and reduction of rural construction land, building new countryside, and solving the problem of insufficient construction land quotas for urban development. In the centralized residence process, it is important to study the willingness of rural households and factors influencing their willingness. This empirical study used Panshan County and Jiangshan City as representatives of pure and nonpure farming areas, respectively. Three logistic regression models were applied, to explore differences between pure and nonpure farming areas and the factors influencing rural households' willingness to accept centralized residence according to five aspects: households individual characteristics, family economy, policy perception, housing conditions, and social environment. The results showed that, for nonpure farming areas, such as Jiangshan City, when there is more trust in the village collective, less arable area, increased satisfaction with infrastructure and higher non-agricultural income, the more willing rural households are to accept centralized residence. In pure farming areas, such as Panshan County, when there are greater expectations of policy, the safer environments and higher non-agricultural income, the more willing rural households are to accept centralized residence. By comparison, rural households in nonpure farming areas are more concerned with fairness future quality of life, while those in pure farming areas are more concerned with implementation and guaranteed compensation. China's centralized residence policy should focus on the objective conditions of each region, and appropriately differentiate based on different areas and categories.

1. Introduction

With advances in industrialization and urbanization, China's rural population has migrated to urban areas, leading to population decreases in natural villages, known as "hollow villages" (Liu, Long, Chen, & Wang, 2011; Liu, Lu, Chen, 2013, 2014). In rural areas, villages are randomly scattered, and suffers from land-use disorder (Fang & Liu, 2014; Jiang, Fei, Tang, 2016; Long, 2014a, b; Tian, Yang, & Zhang, 2007, 2016a; Wang, Wang, Su, & Tao, 2012a). As a result, Chinese governments began exploring centralized residence of rural households (Peng, 2015; Tian, Kong, Liu, & Wang, 2016b; Wang et al., 2016; Wu, Zhang, Xu, & Li, 2016; Yep & Forrest, 2016) as a means to protect farming land, through the incorporation and reduction of rural construction land, building of new countryside, and solving the insufficient construction land quota problem for urban development (Liu, Liu, Chen, & Long, 2010; Long, Liu, Li, & Chen, 2010; Wang et al., 2012a; Wang, Chen, Shao, Zhang, Cao, 2012b). Centralized residence, an important form of urbanization, places scattered households in new

communities equipped with the relevant facilities that provide holistic changes in production, lifestyle, ways of life, and social welfare (Zheng & Fu, 2007; Zhao, 2009; Long, Li, Liu, Woods, & Zou, 2012; Li, Liu, Long, & Cui, 2014). The practice of "three concentrations in rural areas" (that is, rural people concentrated in communities, industries concentrated in parks, and land concentrated in scale) conducted in Shanghai Municipality and Jiangsu Province in the 1990s was the beginning of centralized residence of rural households in China (Li & Zhang, 2013). The 2004 *Opinions about Strengthening Management of Rural Residential Land* by the Ministry of Land and Resources proposed "to guide rural residence construction towards small towns and central villages in a planned way. Centralized new villages are encouraged, according to requirements of urbanization and intensive land use." This was the first known policy regarding centralized residence of rural households. In April 2006, Shandong Province, Tianjin Municipality, Jiangsu Province, Hubei Province, and Sichuan Province were the first areas piloted for the connection of urban and rural construction land (Huang and Qi, 2011). After the 2008 *Regulations on Management of*

Connection between Urban and Rural Construction Land, different areas in China began conducting new rural construction activities centering on centralized residence (Long, 2014b), using multiple models for restructuring village spaces such as village-to-village, village-to-town, and village-to-city (Long, Li, et al., 2009, 2012).

Academic circles hold different opinions about the practice of centralized residence in China. Assentients believe that having scattered households gathered together in central towns or new communities enhances the efficiency of land resource utilization, improves rural population's living environments, and accelerates the progress of urban-rural integration (Dang, 2010; Wei & Shi, 2015; Zhou & Wang, 2015). It's considered an effective means of land provision for industrialization, while not affecting grain safety (Ruan, 2012). Opponents maintain that flattening villages that have existed for thousands of years is a waste of resources and will break the organizational structure of the rural society and damage their existing social networks. As a result, rural residents face material, spiritual, and cultural crises (Liu, 2011; Wu, 2016; Zhang, Wu, Zhong, Zeng, & Wang, 2017). Meanwhile, problems such as implementing centralized residence compulsorily against farmer's willingness, and the one-sided pursuit of construction land quotas existed in the current practice. (Han, Qin, & Zhang, 2007; Zheng & Fu, 2007).

As the subject of rural centralized residence, residents' willingness determines future moving behavior and further influences the implementation of the policy. Hence, the willingness and factors influencing the willingness of rural households are worth studying. This empirical study selected Panshan County of Liaoning Province and Jiangshan City (a county-level city) of Zhejiang Province as the representatives of pure (agriculture-oriented) and nonpure farming areas (service oriented), respectively. Based on the results of 311 questionnaires from Panshan County and Jiangshan City, three logistic regression models were developed to analyze the factors influencing rural households' willingness of centralized residence. A comparative study was conducted, thus providing references for optimizing rural households' centralized residence in China and formulating differentiated policies for it. The remainder of this paper is organized as follows. Section 2 presents literature review. Section 3 discusses the questionnaire provided, selection and analysis of variables, and the constructed analysis model. Section 4 explored the factors influencing the willingness of rural households in the two empirical regions, and compared differences between influencing factors. Section 5 presents obtained results, conclusions, and proposed policy suggestions.

2. Literature review

As centralized residence becomes an important policy tool of Chinese governments, it draws increased research focus as well as disputes. Current research focuses on modeling centralized residence (Chen, Sun, & Liu, 2010; Qu, Jiang, & Zhang, 2014; Sun, Liu, & Xu, 2011), effective evaluation of implemented centralized residence (Jia, Li, Zhu, Wang, & Li, 2009; Huang, Li, Chen, & Li, 2011; Ma & Sun, 2012; Long, 2014a, b; Jiang, He, Qu, Zhang, Meng, 2016), and the driving and operation mechanisms of centralized residence (Liu et al., 2010; Liu, Yang, Li, 2013; Long, Li, et al., 2009; Long, Zou, Pykett, & Li, 2011; Ruan, 2012; Wu, 2016; Yang, Xu, & Long, 2016). Rural households' willingness has an important impact on the implementation of the centralized residence policy. At present, the research on farmers' willingness mainly focuses on the rural households' willingness in rural residential land quit (Xia et al., 2016), farmland transfer (Wu et al., 2016), farmland acquisition (Guo et al., 2012), urban settling-down (Nie and Wang, 2014), land adjustment (Zhang and Yang, 2010), hollow village renovation (Li and Huang, 2012).

With respect to the rural households' willingness of centralized residence, most studies are in the case studies that analyze the factors influencing rural households' willingness. Existing studies show that rural households' willingness is impacted by multiple factors, such as individual characteristics, family economy, family housing, features of the survival environment, level of economic development, policy features, exchange standards for settlement houses, concerns about quality of life after moving, and disposal of contracted land (Bai & Jiang, 2011; Du, Zhong, & Li, 2013; Erickson, Lovell, & Méndez, 2011; Kong, Zhang, & Jia, 2014; Zhang & Chen, 2009; Zhang, Wu, & Yang, 2013; Zhong, Qing, Hu, 2016). Based on survey data of the new generation migrant workers from 16 cities in Anhui Province, Sun (2016) pointed out that personal characteristics, family characteristics, the condition of migrant workers, cognition and participation of policies would have a significant impact on the rural households' willingness of centralized residence. Regarding the factors influencing rural households' willingness on the developed region, Liu, Wang, and Zhao (2015) found that, compared with the area of lower economic development level, the desire of rural households in the area of higher economic development is stronger according to the survey in Beijing. And farmers with higher-level education, higher proportion of household member that work out of the village, and good living conditions are more likely to accept centralized residence. On the contrary, choosing Sihong Country as a case study in developing region, Zhou et al. (2016) pointed out the desire of rural households is obviously lower than that in developed region. The main factors influencing rural households' willingness are households' individual characteristics and economic factors such as family income, agricultural income. Overall, the factors influencing rural households in different regions vary largely, due to an imbalance in natural conditions, economic development, resource endowments, differences in income, and cognition of the centralized residence policy. Few studies compared the differences between factors influencing rural household willingness.

Regarding research method, many previous studies used binary logistic regression model, structural equation model, Probit model. Most of the studies divided rural households' willingness into two types of willing and unwilling to live in centralized residence, lacking of further division of willingness. If the households' willingness could be classified into five different types, such as "unwilling", "a bit unwilling", "willing", "relatively willing" and "extremely willing", it would be more relevant to the actual thinking of households. In addition, ordered logistic regression model can be used because it has logical order among the options, which can more accurately analyze the factors influencing rural households' willingness.

3. Data sources and methods

3.1. Overview and orientation of the study areas

Jiangshan City is a county-level city of Zhejiang Province governed by Quzhou City. It's located at the junction of Zhejiang, Fujian, and Jiangxi Province, with a total area of 2019.03 square kilometers. Its landforms are mountains and hills, and its terrain is from the southeast to the northwest. In 2015, Jiangshan City governed 12 towns with a registered population of approximately 611,000, including a rural population of 380,000 and urbanization rate of 38%. The total number of rural labor resources was 173,100, including a rural population of 87,100 engaged in agriculture, forestry, animal husbandry, and fishery, with many shifting to the second and tertiary industry. In 2015, the gross regional production was$ 39.2 million, and the per capita disposable income of rural permanent residents was $2773. Overall, the economic and social development of Jiangshan is favorable.

Panshan County is governed by Panjin City of Liaoning Province, located north of the city with an area of 1000.72 square kilometers. It's located on the fluvial plain, downstream of the Liaohe River. The terrain is smooth and low-lying, with many shoals along the coast. The agriculture primarily consists of rice and crabs. In 2015, Panshan County included 13 towns with a registered population of approximately 273,000, including a rural population of 197,000 and urbanization rate of 28%. The gross regional production was $ 23.7 million,