Study on the Application of Migrants Evaluation System in the Rural Sustainable Development of Heilongjiang Province

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Abstract. As economy speeds up in China, the gap between the city and rural areas is huge and the rural hollowing is increasingly serious, which challenges the sustainable development of the villages. In this paper, Heilongjiang Province will serve as the research object. Firstly the quantitative analysis will reveal the spatial trend, age structure of migrants and industry absorption ability of the whole province. Then nine administrative villages will be selected to construct the migrant evaluation system to explore the behavioral rules and patterns, which integrate the idling land, migrants’ attributes, demands and occupational planning, etc. Finally, the strategies will be put forward from thoughts changing, green development of industry, urban-rural integration and ecological agriculture to realize the healthy, ecological and sustainable development of the villages.

1. Introduction

Urbanization is a process by which farmers leave the villages and go to the city. Rural hollowing is the phenomenon during the urbanization, featured as the decline of rural population and the idling of rural homesteads, etc. It’s also an inevitable stage during the process of urbanization[1-2]. In a broad sense, rural hollowing includes the hollowing in land, population, industries and infrastructures, which essentially indicate the overall degradation of the economic and social functions of rural areas. From a narrow sense, it’s the population decrease in rural areas[3-5].

In recent years, the issues of rural hollowing also have drawn great attention in academic fields, Changbing Han believes that rural hollowing reflects the degradation in land, population, agriculture and infrastructures[6]; Yansui Liu has explored the forming mechanism of rural hollowing from the inner and outer core of rural development[7]; Kunqiu Chen et al. points out that the degree of rural hollowing in China generally is higher in central region than the eastern region and eastern region than western region[8]; Liangjian Wang et al. and Dianyuan Zheng et al. thinks the degree of rural hollowing presents a spatial pattern that intensifies from west to east and from south to north[9-10]; Chenghong Fan and Sisi Yao discuss the reasons of rural hollowing and find out that the reasons include the income gaps between the cities and villages,land legal system, the absent of rural land approval system and the wrong perception of land ownership, et al. [11-12]. Xuxi Wang et al. And Yang Wang et al. Construct an evaluation index system for rural hollowing and evaluation index of land remediation to further reveal its distribution rules[13-14]; Xuefeng He believes that the existing land system has become a guarantee for farmers to withdraw from the city and ensure a stable income[15].

Heilongjiang Province is a large-scale agricultural province and plays a vital role in ensuring national food security. However, during recent years, as new urbanization develops steady with slow
growth rate, rural hollowing has led to serious population migration, idle of land resources, unbalance of age structure and other problems, which severely restricts the sustainable development of rural areas and agriculture. In particular, the improvement of agricultural mechanization has accelerated the transfer of rural labor force and part of rural areas has witnessed the serious rural hollowing, which challenges the role as one of the most important commodity grain bases in China. Therefore to fully understand and cope with the issue of rural hollowing, it’s necessary and urgent to find out the rules and characteristics of migrations to make the suitable strategies of urban-rural development in sight of behavior rules and laws, which therefore promote the rural revitalization work and healthy and orderly development for both cities and rural areas in our province.

2. Case Study-the characteristics of rural hollowing in Heilongjiang Province

In this paper, 9 administrative villages in Qiang’an County will be selected to explore the migration and behavioral characteristics of rural population through questionnaires. This part intends to be as the practical base for the subsequent strategies.

2.1. Research area

Qiang’an County, as the research area, is located at the intersection of Xiaoxing’an Mountain and Songnen Plain, which is a national ecological demonstration area, a national modern agricultural demonstration area, the first batch of recognized national modern agricultural industrial parks and enjoys the reputation of hometown of green food in China and famous green county in China.

2.2. Survey introduction

The survey objects include the official workers and farmers in 9 villages through the on-site visits and online surveys. A total of 239 questionnaires were sent out and a total of 239 were returned, of which 237 were validly filled out, with an effective rate of 99.6%. 71 were distributed on-site and 168 were retrieved online. The objects of the questionnaire survey basically cover various groups of villagers in the surveyed area. The content of the questionnaire mainly focuses on the migration of rural population from three most cared aspects: housing, employment and education.

2.3. Characteristics extraction of rural hollowing

2.3.1. The rate of population hollowing and house hollowing are both extremely high. As indicated from the survey, the migration of rural population is seriously severe. The hollowing rate of the overall population is high, with an average of more than 50%, and the highest rate is 77% (see Table1). The hollowing rate is obviously affected by location, and it’s relatively lower for the suburban villages. The hollowing rate of houses is as high as 63.58% (see Table 2), and the seasonal hollowing rate is generally higher than the annual hollowing rate, indicating that the separation of people and land is prominent, the waste of land resources is serious, and the utilization of rural homesteads is difficult.

![Table 1. Hollowing rate of the surveying villages in 2019](attachment:image)

| Village | Registered population | Permanent population | Hollowing rate (%) |
|---------|-----------------------|----------------------|--------------------|
| YJ      | 3790                  | 477                  | 63.48              |
| YP      | 3082                  | 713                  | 76.87              |
| BA      | 3024                  | 2210                 | 26.92              |
| XM      | 3959                  | 916                  | 76.86              |
| JW      | 4338                  | 1148                 | 73.54              |
| ML      | 4101                  | 1716                 | 58.16              |
| QF      | 3010                  | 753                  | 74.98              |
| TF      | 2126                  | 1255                 | 40.97              |
| XF      | 4401                  | 1219                 | 72.3               |
Table 2. Seasonal and annual vacancy rate of the surveying villages in 2019

| Village | Total Residential (Household) | Seasonal Vacancy | Seasonal Vacancy Rate (%) | Annual Vacancy | Annual Vacancy Rate (%) |
|---------|-------------------------------|-------------------|---------------------------|----------------|------------------------|
| YJ      | 477                           | 56                | 11.74                     | 37             | 7.76                   |
| YP      | 265                           | 40                | 15.09                     | 60             | 22.64                  |
| BA      | 930                           | 150               | 16.13                     | 50             | 5.38                   |
| XM      | 929                           | 470               | 50.59                     | 180            | 19.38                  |
| JW      | 1123                          | 200               | 17.81                     | 150            | 13.36                  |
| ML      | 679                           | 50                | 7.36                      | 30             | 4.42                   |
| QF      | 758                           | 156               | 20.58                     | 484            | 63.85                  |
| TF      | 830                           | 30                | 3.61                      | 85             | 10.24                  |
| XF      | 800                           | 100               | 12.50                     | 300            | 37.50                  |

2.3.2. Not all of the family members leave the village together. As shown from the survey, The average number of villagers is 4.6, which is between two and three generations. The average number of mitigation villagers is 2.2 persons per household, and most of them are men. The main purposes include work and education (mainly high school and university), etc., which are 67.5% and 9.5% respectively.

2.3.3. Migrants’ demands are diversified and children’s education is the main motivation for buying houses in the cities. According to survey statistics, the reasons for rural migration is diversified, including work, children’s education, improving the quality of life, elderly care needs and personal pursuits. Economic needs and children's education needs accounted for the top two, 57.56% and 55.88% respectively. And with the improvement of the educational level of the new generation of farmers, who was generally born in the 1980s, the emphasis on education has also become the main factor for farmers to buy houses in cities and towns. The percentage for farmers with house-buying willing is 55.46%, for life quality improvement and pension security are 29.41% and 23.11% respectively. However, due to urban-rural income gap, the household registration system and the land system, most villagers are still migratory birds, traveling between villages and cities, and can neither completely take root in cities nor staying in the villages.

2.3.4. Migrants always choose other cities or other provinces as workplace. From the survey statistics, the rate of migrants outside provinces accounts for 35.71%, the rate in the cities within the province accounts for 25.21%, but the rate in surrounding counties and towns is the lowest, only accounting for 24.79%. The surrounding counties (towns) only witnesses a small proportion of migrant workers, which are less attractive to villagers and the phenomenon of labor outflow is serious. At the same time, the villagers have a strong willingness to find jobs nearby, and 45.8% of the villagers are willing to return to their hometowns for employment. This also reflects that county’s economy within the province is weak, which is unable to provide enough jobs.

2.3.5. It’s hard for villagers to integrate into the cities as a citizen and the intellectuals with high-level education are the groups to really leave the rural areas and become the citizens. It’s shown that the popular work fields for migrants are the architectural and service industry, accounting for 76.01% and 46.18% respectively. However, only 18.07% can enjoy basic social security and nearly 63% are faced with huge uncertainty without any security. Also the thoroughly urbanized groups are mainly intellectuals with high-level education. On one hand, the farmers, who always are engaged in labor-intensive jobs, have difficulties in housing, settlement, children’s education and medical security. On the other hand, the rules and regulations related to farmland and homesteads in the villages are not
clear. Therefore it’s hard to integrated into the cities as a real citizen and have to drift between the cities and rural areas or return to the village when they become old.

2.3.6. There are still many restrictive factors on the way to become a citizen and the rural areas are still the first choice for migrants when they become old. As indicated from the survey statistics, even though a huge amount of villagers leave and go to work, 50% of the migrant still choose to live rural areas for their old life, which indicate that part of the current idle homestead will continue to be used in the future. 31.93% choose to enjoy the old life in surrounding counties or towns, the main limiting factors are diverse, including high housing prices, social security, and unsound living security, etc.

3. Strategies to cope with rural hollowing in Heilongjiang Province

3.1. Change the thoughts of rural hollowing and conform to the laws of rural development.
The problem of rural hollowing, as an inevitable phenomenon in the urbanization development, will weaken and disappear as urbanization advances. The population, capital, industry and other factors between urban and rural areas will realize free movement; the formation of rural areas is a long historical process, and its demise will also needs a long time. Villages withdrawal and combination must conform to the objective laws of rural development with respect to the wishes of farmers. The administrative means are strictly prohibited; most of the rural migrant workers in our province are in a semi-urbanized state, and vacant homesteads in rural areas are still their first choice for elderly care in the future. Therefore the homesteads withdrawal and land rehabilitation must respect the wishes of farmers so as to avoid the social problems.

3.2. Promote high-quality development of the county economy and its urbanization.
According to the above analysis, the farmers in our province have shown strong willingness to work in nearby counties or cities, so we should comply with the objective laws of urbanization development and respect farmers’ wishes to further accelerate the high-quality development of county economies and its urbanization; county is considered as the center to integrate the towns and cities within to promote the economic development. And the attractiveness of the county should be enhanced so as to improve its ability for labor forces from the rural areas, especially to the people who is hardly integrated into the cities; seen from the transferring trends of population in the future, the prefecture cities are the main concentrated sites, therefore the infrastructure construction for towns and central villages should be avoid too high to avoid waste.

3.3. Break the dual structure and promote the free flow between urban and rural elements.
The barriers, which restrict the flow between the cities and rural elements, should be broken down, opening up the two-way channels of flowing between the cities and rural areas. The people, who love the countryside and are willing to enjoy life and establish the company, should be encouraged. The basic support in household registration and homesteads should be ensured. Meanwhile, the household registration procedure and policy should be simplified. So that the migrants, who are able to afford the lives in the city, can integrate into the city and settle down; actively promote the implementation of land management system and the marketing utilization of land. The separation of rights among collective ownership, contracting right and land management right should be accelerated to active the utilization of idle homesteads; promote the balanced allocation and equal use of public service resources between the cities and rural areas.

3.4. Stimulate the village’s development potentiality and attract the migrants with rural economy.
Strengthen the rural collective economy, stimulate endogenous development potentiality in rural areas, increase policy support in finance and taxation, and encourage village collectives to develop economy based on their own characteristics; explore the development of characteristic agriculture based on the characteristics of the village. Attract migrant workers to return for employment and entrepreneurship.
Increase the employment opportunities and income of farmers; vigorously develop modern agriculture and promote agricultural industrialization. To extend the agricultural industry chain and increase the added value of agriculture to form a new pattern of agricultural industrialization development layout with a complete industrial chain, diversified functions, and various types of business. Promote the integrated development of primary, secondary and tertiary industries to continuously improve the innovation and competitiveness of agriculture.

4. Conclusion
The phenomenon of rural hollowing is an inevitable process during the urbanization of city development. Instead of considering it as an blockade, we should change our awareness and strive to explore its advantages in the future, such as the agricultural scale of farmland, the supplement and improvement of village infrastructures and facilities and the reconstruction of the village layout. Therefore it’s crucial to explore the behavioral rules and essential demands of villagers to truly realize people orientation, improve happiness index and achieve the goal of rural revitalization.

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