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The Changes in the Chinese Rural Residents' Residential Structure: Can People's Livelihood be Really Improved?

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Abstract People's livelihood improvement is the prerequisite of social harmony. Food, clothing shelter and transportation are the direct manifestation of the people's livelihood. In China's vast rural areas, the most significant manifestation of people's livelihood improvement is the improvement of living conditions. Based on the data on two censuses, this paper analyzes the degree of improvement of rural residents' living conditions from the changes in the rural residents' residential structure. Finally this paper puts forth the following recommendations for improving the rural residents' residential structure: continuing to put farmers in the first place; taking truly improving the residential structure as a starting point, and prohibiting the "vanity project"; taking preferential policies for the improvement of living conditions.

Key words Livelihood, Rural residents, Residential structure

With the economic and social development, the new rural policy continues to be deepened, and the living standards of rural residents are constantly improved. There is a growing demand for improving the living environment and living facilities, and the rural areas in China is undergoing tremendous changes. Food, clothing shelter and transportation are the direct manifestation of the people's livelihood, and the most significant manifestation of people's livelihood improvement is the improvement of living conditions, because building new houses is a top priority in the majority of rural residents' life, and also what they want to do first after the income is increased. Based on the data on two censuses, this paper analyzes the degree of improvement of rural residents' living conditions from the changes in the rural residents' residential structure, as well as the related trends, variations and problems.

1 Definition of the residential structure

There is little literature on the residential structure research, and the domestic scholars' researches of the problem of the residents' living conditions are mostly carried out from the residential patterns, living environment, living conditions and other perspectives. So far, the meaning of residential structure has not yet been clearly defined by the theorists, and the research angle of relevant papers is very casual. For the residential structure, I believe that it is necessary to understand it broadly and narrowly. The residential structure in a broad sense includes the mode of living, the living environment, living conditions, and living space, and it can be interpreted as regional structure, environmental structure, and housing structure itself. The residential structure in a narrow sense refers only to housing structure, the way of construction of building, internal composition, facility features and construction area. The fifth census has no statistics on the housing construction meth-

ods, so this article carries out comparative analysis on rural residents' residential structure from the living space and residential facilities.

2 The trend of changes in the rural residents' residential structure

According to the fifth and sixth censuses data, we compare the data between the two censuses, and find the trend of changes in rural residents' residential structure in China over a decade.

2.1 Analysis of structural changes in living space For the analysis of the structure of living space, we should pay attention to changes in the room number and residential area. The following data are obtained based on the housing data of the two censuses.

2.1.1 Room number. The data in the table show that over a decade, the number of room of the Chinese rural residents has been significantly increased (2.9 per person during the fifth census, and increased to 3.67 during the sixth census). From the specific proportion, the change from 0.01% of population without shelter during the fifth census to complete disappearance of population without shelter during the sixth census, indicates that the transformation of every household having room is realized. Data show that rural residents' residential structure was significantly improved during the sixth census, the proportion of households with rooms less than three was conspicuously decreased, and the proportion of households with rooms more than three was markedly increased; especially the proportion of households with six rooms or more was greatly compounded, and the proportion of households with ten rooms or more increased from 0.8% to 1.97%, an increase of 1.5 times. With shrinking scale of rural families, the children and parents can basically achieve the desire to have an independent room.

2.1.2 Changes in living area. The table data show that the per capita living space of China's rural residents is increased significantly, but the per capita living space of many households is below 30 square meters, and the proportion of households with the per

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capita living area less than 30 square meters during the fifth census accounts for 69.13%. However, taking 30 square meters as the watershed, there are significant differences between the two censuses. The proportion of households with the per capita living area more than 30 square meters during the fifth census accounts for 30.89%, and the proportion of households with the per capita living area more than 30 square meters during the sixth census accounts for 53.8%. The per capita living space of more than half of rural households reaches 30 square meters, and the per capita liv-

ing space of 24% of households reaches more than 50 square meters. The proportion of households with the per capita living area less than 30 square meters during the sixth census shows a trend of significant decline, and the proportion of households with the per capita living area more than 30 square meters during the sixth census shows a trend of significant rise. During this decade, the rural residents' living space was significantly expanded and the structure of living space was significantly improved.

Table 1 The proportion of households in terms of the room number %

	0	1	2	3	4	5	6	7	8	9	10 and above	The average number of rooms of households
The fifth census	0.01	16.1	32.2	24.7	13.38	6.56	3.47	1.2	1.16	0.4	0.8	2.9
The sixth census	0	9.74	20.9	26.3	18.94	9.43	7.1	2.16	2.63	0.9	1.97	3.76

Note: The data in the table are obtained according to the fifth and sixth censuses data; the average number of rooms of households during the sixth census is calculated using the weighted arithmetic mean.

Table 2 The proportion of households in terms of the per capita living area %

	Smaller than 8 m ²	9 – 12 m ²	13 – 1 m ²	17 – 1 m ²	20 – 29 m ²	30 – 39 m ²	40 – 49 m ²	Bigger than 50 m ²
The fifth census	7.51	12.4	15.4	6.74	27.08	13.9	7.21	9.78
The sixth census	3.47	4.79	8.68	5.2	24.22	17.9	11.9	24

Note: The data in the table are obtained according to the fifth and sixth censuses data.

2.2 Analysis of changes in the structure of residential facilities

(i) Cooking fuels. The proportion of household using gas rose from 6.26% during the fifth census to 16.54% during the sixth census, an increase of 10 percentage points, with the growth rate of 164%; the proportion of household using electricity rose from 0.3% during the fifth census to 6.61% during the sixth census, with the growth rate of 2100%; the proportion of household using coal and firewood declined significantly, indicating that the degree of cleanness and convenience in cooking and heating is greatly improved for China's rural residents. (ii) Use of tap water in rural households. The proportion of rural households with no tap water for drinking fell from 75.84% during the fifth census to 58.64% during the sixth census, a decrease of nearly 20 percentage points; the proportion of rural households with tap water for drinking increased from 24.16% during the fifth census to 41.75% during the sixth census. The drinking safety, drinking water quality and convenience of drinking water have been significantly improved for rural residents in China. (iii) The installation of bathing facilities. The proportion of rural households with no bathing facilities fell from 86.14% during the fifth census to 63.62% during the sixth census; the proportion of rural households supplied with heating water rose from 0.14% during the fifth census to 0.53% during the sixth census, and although the proportion was low, the growth rate was high; the proportion of rural households with water heater rose from 3.56% during the fifth census to 22.81% during the sixth census, becoming the main pattern of bathing facilities for rural residents; the proportion of rural households with other bathing facilities (including solar energy and other facilities) rose from 10.17% during the fifth census to 13.05% during the sixth census.

3 The characteristics of changes in the rural residents' residential structure and the existing problems

From the above analysis, we can see that from 2000 to 2010, the rural residents' living conditions were dramatically improved in China, and no matter it was the residential spatial structure or living facility structure, there was noticeable improvement. These changes are inextricably linked to rural development policies, and also fully reflect the government's development objectives of livelihood first. It can be said that the development of livelihood of rural residents in China has made remarkable achievements, especially in the improvement of people's residential livelihood. However, we should see the problems and deficiencies while paying attention to the achievements. First of all, the proportion of rural residents with the living space below the average is still large. Up to the sixth census, the rural residents had all achieved home ownership, but there were still 57% of rural households with the average room number less than 3.76. It does not mean the more the rooms, the better, but the the fact is that the number of rooms less than three and below in rural areas indicates the tight living space. In rural areas, three generations living in the same house is a relatively common phenomenon and most families are not one-child families (ie., every family has at least two children), so more than half of households have relatively small living space. The reason is that the family income is low, the life pressure is great, and the rural residents have no the ability to improve their living conditions. Secondly, the improvement of living facilities still remains to be done in the future. From the residential facilities, the proportion of rural households independently using kitchen dropped, from 80.13% during the fifth census to 76.8% during the sixth census. The proportion of rural households without kitchen rose, from

17.26% during the fifth census to 20.89% during the sixth census. There are still 58.25% of the households without tap water, and the drinking water safety is still not guaranteed for these people. In addition, there are still 63.62% of the households without bathing facilities, and the personal hygiene is difficult to be guaranteed, especially in autumn and winter.

It is noteworthy that the proportion of rural households without toilets within the house increased significantly, from 29.59% during the fifth census to 39.84% during the sixth census, indicating that the convenience for residents to go to the toilet was declined significantly.

Table 3 The proportion of households in terms of the residential facilities

Classification of facility conditions		The fifth census	The sixth census
Whether there is kitchen in the house	Used independently by the household	80.13	76.8
	Shared with other households	1.61	2.31
	No	17.26	20.89
Main cooking fuel	Gas	6.26	16.54
	Electricity	0.3	6.61
	Coal	28.22	17.13
	Firewood	64.55	58.64
	Others	0.68	1.08
	No	24.16	41.75
Whether there is tap water	Yes	24.16	41.75
	No	75.84	58.25
Whether there is bathing facility in the house	Unified supply of heating water	0.14	0.53
	Water heater installed by the family	3.56	22.81
	Others	10.17	13.05
	No	86.14	63.62
Whether there is toilet in the house	Used-independently pumping type	3.35	11.65
	Neighbors-shared pumping type	0.16	1.14
	Other used-independently types	63.6	42.33
	Other neighbors-shared types	3.3	5.04
	No	29.59	39.84

Note: The data in the table are obtained according to the fifth and sixth censuses data.

4 Recommendations for further improving rural residents' residential structure

China has vast rural areas, and there are 670 million people living in rural areas, occupying more than half of the total population. With the development of new rural construction, the appearance of the rural areas is undergoing rapid changes. But we should notice that this change is not yet balanced. If the rural areas are stable, the state will be stable, and if the farmers are wealthy, then the state will be really rich. Farmers living and working in peace and contentment is a sign of stability in rural areas. So fundamentally, to overall improve the living conditions in rural areas, we should pay attention to these following aspects.

4.1 Continuing to put farmers in the first place The fundamental way to improve the quality of life of rural residents is the increase in income. Stimulated by the central policies for supporting and benefiting policy, the per capita net income of rural residents was increased substantially, from 2 622 yuan in 2003 and 5 919 yuan in 2010. Despite the steady growth in farmers' income, the income gap between urban and rural residents is expanding, that is, the scissors difference continues to expand, and the actual purchasing power of farmers has not been really improved. In rural areas, the quality of living is the manifestation of the level of life quality, only when the farmers have enough money can the living standards and residential structure be really improved.

4.2 Taking truly improving the residential structure as a starting point, and prohibiting the "vanity project" On February 21, 2006, the Central Government issued *A Number of Opinions of the State Council on Promoting the Socialist New Countryside Construction* in the form of Document No. 1, taking the con-

struction of a new socialist countryside as a major historic task in China's modernization process. The document highlights that we should pay attention to the practical effects during promoting the new rural construction, avoid formalism, and enhance the village planning and the living environment governance. In the process of responding to the call of today's new rural construction, many rural areas distort its true meaning, and vigorously roll out vanity projects. It is a waste of money, and more importantly, people's living structure is not yet improved substantially, and the quality of life has not been really improved.

4.3 Taking preferential policies for the improvement of living conditions One is to give preferential policies to the poor families, and the other is to give preferential policies to the backward regions. With the vast expanse of China's rural areas, the regional development is unbalanced, and even if in the rural areas of the same region, there may be great differences due to different family situation. Therefore, when improving rural residents' residential structure, it is necessary to take the preferential policies, to give certain subsidies to the poor families and backward areas; in urban areas, the state can draw on many channels such as building low-cost house and affordable house, to improve the housing problems for the low-income households; in rural areas, there is need to take some measures to improve the living conditions for the poor families and further improve the residential livelihood.

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