

Regional Differences and Influencing Factors of Psychological Integration of Urban Floating Population in China

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Abstract: Based on the dynamic monitoring survey data of floating population in 2017, this paper analyzes the regional differences and influencing factors of psychological integration of urban floating population in China. The results show that: (1) The psychological integration of floating population is at a high level; (2) there are significant regional differences in the psychological integration of floating population. The psychological integration of Southeast coastal and a few Western cities is lower than the national average level, and the psychological integration of Northeast, Shandong, Sichuan and Chongqing is higher than the national average level; (3) the psychological integration of floating population has spatial agglomeration effect. In addition to Sichuan and Chongqing, hot spots are concentrated in the North and cold spots are concentrated in the Southeast. (4) Factors like owning real estate, employer status and high education level accelerate the psychological integration of floating population; the increase of income is not conducive to psychological integration, which is related to the sense of relative deprivation; participation in the “new rural cooperative medical system” has a restrictive effect on the psychological integration of floating population; The equalization of temporary residence permit/residence permit and basic public services is an important way to realize psychological integration. The rapid development of urban economy is conducive to the psychological integration of floating population. Inter provincial mobility has an inhibitory effect, and the effects of economic development level, family size and local residence time are not significant.

Keywords: Psychological integration; Floating population; Citizenization; City

Since the reform and opening up, cross regional population mobility has reshaped China’s urban-rural relations and social structure. According to the national census data in 2020, the population separated from households in China is about 493 million, including 376 million floating population^[1]. However, in the process of urbanization, China’s urban and rural registered residence system has not undergone substantial changes. The modernization drive is hard to benefit the of the floating population^[2], leading to the isolation or marginalization of the floating population from the mainstream society^[3]. At the psychological level, paying attention to the urban

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become an important part of the sustainable and healthy development of China's urbanization. Psychological identity, belonging and satisfaction of the floating population and promoting the process of citizenization have integration is an important topic in social integration research^[4,5]. Since industrialization and urbanization, ethnic migration and social and cultural integration have begun to enter the research vision of Western academic circles. At present, the international academic community has carried out a lot of theoretical research and empirical analysis from the perspectives of sociology, psychology, demography and geography. The research contents include: (1) in multidisciplinary research, represented by sociology and psychology, they deepen and expand the theories of self-identity, social identity and social exclusion^[6-8]. From the perspective of sociology, it examines the individual's subjective experience in social connection and interaction, such as self-reflection and common emotion of interaction experience, as well as the judgment of the depth of social communication; from the perspective of psychology, this paper examines the changes of attitudes and behaviors of immigrant groups and individuals, as well as the consensus and adhesion between social groups or organizations^[9]. For example, Bollen and Hoyle^[10] incorporated "perceptual integration" into the theoretical framework of social integration to express individuals' sense of belonging in social groups and their spiritual feelings as group members. In China, the academic circles generally agree that psychological integration is an important link of social integration. However, different scholars' understanding of the logical relationship between economic, social, cultural, psychological or identity dimensions is diverse. For example, Zhu^[11] and Yang^[12] believe that the real or complete social integration is based on the high psychological identity of the floating population to the inflow City, emphasizing the importance of psychological adaptation and identity; Zhang *et al.*^[5] hold different views on the explanation of the effect based on "urban charm". (2) In the west, identity, acceptance and assimilation of local culture, ethnic relations or ideological prejudice^[13,14], and individual cultural adaptation^[15], such as the change of attitudes and values, are the basis for judging whether immigrants integrate into the mainstream urban society. For example, Goldlust *et al.*^[14] paid attention to the construction of self-awareness, the acceptance or internalization of local values, and the satisfaction of immigrants' living places. In China, the research perspectives include satisfaction^[5], social distance^[16], social communication attitude^[17], identity^[18] and sense of belonging^[19], quantitatively analyzing the feeling, experience or cognition of the floating population in the inflow place from the psychological level. For example, Wang *et al.*^[17] take "social distance" as the research framework, and investigates the social distance and group differences between floating population and urban residents under the dual division of urban/rural areas and regions. (3) Previous studies have shown that^[20-22] the difference of psychological integration of floating population exists between individuals and groups, as well as between regions and cities. In terms of mechanism research, academia has formed three main interpretation paradigms: Human capital paradigm, social capital paradigm and institutional paradigm^[22,23]. It focuses on demographic characteristics, livelihood capital, social networks and mobility characteristics^[16,20,24], and also discusses the intervention and impact of institutional arrangements and policy practices on the urban integration of floating population^[20,25]. In addition, urban characteristics also have varying degrees of impact on the psychological integration of floating population^[21,22].

In the empirical analysis, most studies incorporate psychological integration into the overall research framework of social integration, and lack of targeted discussion on the state and process of psychological integration of floating population. Most of the existing studies are based on non-spatial perspectives, and the research on macro regional differences and spatial heterogeneity is relatively insufficient. China's regional differentiation is significant, and there are differences in different urban development stages. It is necessary to reveal the spatial differences of the psychological integration of the floating population. In the mechanism analysis, most studies focus on the influence of individual and family. As the spatial carrier of integration, the mechanism

of local differences on the psychological integration of floating population also needs more in-depth research. In view of this, this paper analyzes the regional differences, spatial pattern and influencing factors of China's urban floating population's psychological integration from the perspective of geography and space, using the national floating population monitoring data, in order to provide a reference basis for orderly promoting the citizenization of agricultural transfer population and the construction of new urbanization.

1. Data Sources and Research Methods

1.1. Data source and study area

The data of floating population comes from the 2017 China floating population dynamic monitoring survey (CMDS2017, carried out by the former National Health and Family Planning Commission). The data adopts the method of PPS sampling (Probability Proportional to Size Sampling). The survey contents include the income and expenditure, employment, mobility and residence intention, health and public services and social integration of the family members. Since the cities at prefecture level and above, Fushun, Tonghua and Sansha in Hong Kong, Macao and Taiwan Province were not included in the scope of this sampling survey, taking the administrative divisions in 2017 as a reference, the scope of the study was determined as 292 cities at prefecture level and above in China, with a sample size of 156,349. In addition, the per capita GDP, the GDP growth rate in recent five years and the per capita savings deposits of urban and rural residents come from the China Urban Statistics Yearbook^[26] and the statistical bulletin of national economic and social development.

1.2. Construction and measurement of index system

The academic community has not formed a unified definition of psychological integration, or paid attention to the value recognition, satisfaction and cultural acceptance of the floating population to the cities^[5,11]; or focused on the role orientation and identity of floating population^[18], and mostly adopt a single index^[3], such as “if they think they are local people”. The difference between it and identification intention is often ignored^[20]. As a dynamic and complex process^[12,20], psychological integration is the pursuit of social identity acquisition and urban cultural value by individuals or groups^[23]. It is also the urban experience and life perception of individuals or groups in the process of interaction^[23]. On this basis, referring to the research results of Bollen^[10], Wang^[16] and Xiao^[24], this paper constructs an evaluation index system for the psychological integration of floating population (**Table 1**). Specifically, it is divided into two dimensions: one is the willingness to integrate, which reflects the willingness of the floating population to actively adapt to the urban society, as well as the emotional belonging and urban identity of the floating population to the inflow society, including “I like the city/place where I live now”, “I pay attention to the changes of the city/place where I live now” and “I am very willing to integrate into the local people and become one of them”; the second is the perception of acceptance, which reflects the judgment of the floating population on the degree of acceptance of the inflow urban society and its isolation from the local urban population, including “I feel that the local people are willing to accept me as one of them”, “I feel that the local people despise outsiders” and “I feel that I am already a local people”.

Table 1. The indexes system of migrants' psychological integration

System layer	Element layer	Index layer
Psychological integration	Willingness to integrate	I like the city/place where I live now I am concerned about the changes in the city/place where I live now I am willing to integrate into the local people and become one of them
	Acceptance perception	I think the locals are willing to accept me as one of them I feel that locals look down on outsiders I think I'm already a local people

According to the degree of consent of the item, this paper assigns complete disagreement, disagreement, basic agreement and complete agreement as 1, 2, 3 and 4 respectively. Among them, carry out reverse score adjustment on "I feel that locals look down on outsiders". Through the reliability test, it is found that the Cronbach coefficient is 0.794, which can be weighted to obtain new variables. In view of the equal importance of different indicators, the equal weight method is adopted. In the process of calculation, firstly, the psychological integration index of a single individual in a city is calculated; secondly, the average value of different individual psychological integration indexes in the city is calculated as the urban psychological integration index. The larger the urban psychological integration index, it shows that the floating population is easier to integrate into the urban society at the psychological level and form a positive subjective feeling and urban identity; the smaller the urban psychological integration index is, the more likely the negative urban experience may be formed, which hinders urban integration.

1.3. Spatial autocorrelation

Using global spatial autocorrelation and hot spot analysis, this paper analyzes the psychological integration level of China's urban floating population. Global spatial autocorrelation analysis mainly describes the spatial agglomeration degree of the psychological integration level of urban floating population in the whole region, which is expressed by global Moran's I . Compared with the global spatial autocorrelation, the hotspot analysis can further reveal the local spatial agglomeration intensity and its spatial distribution pattern, which is expressed by Getis-Ord G_i^* ^[27].

2. Result Analysis

2.1. Spatial differentiation characteristics of psychological integration of floating population

2.1.1. Analysis of measurement results

The calculation results show that in 2017, the psychological integration level of China's urban floating population was 3.276, indicating that the vast majority of floating population tend to get rid of "marginalization", and actively shaping the sense of urban identity and belonging. It is consistent with the research conclusions of scholars such as Wang^[16] and Xiao^[24]. It can be seen that the psychological level of urban integration of the floating population is different from that of the "outsiders" and "passersby". There are obvious differences in social cognition, indicating that the Chinese government has made new progress and breakthroughs in promoting

the construction of a new type of urbanization with people as the core in recent years.

2.1.2. Spatial pattern analysis

The national average, the critical values determined by ± 0.5 standard deviation and ± 1 standard deviation are used for mapping to analyze the spatial differentiation characteristics of the psychological integration of China's urban floating population, as shown in **Figure 1**.

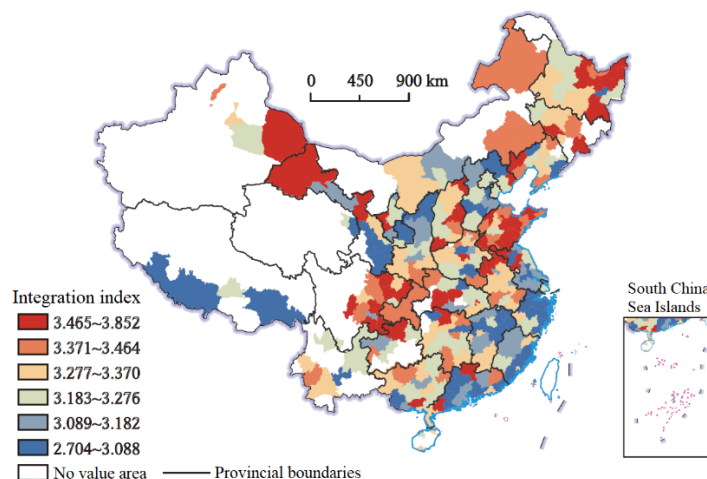


Figure 1. Spatial distribution of urban migrants' psychological integration in China in 2017.

Note: It is based on the standard base map with drawing review number GS(2020)4630, the base map is not modified; the data does not include prefecture level and above cities in Hong Kong, Macao and Taiwan Province, Fushun City, Tonghua City, Sansha City, etc.

There is spatial heterogeneity in the psychological integration level of China's urban floating population with significant regional differentiation as follows.

(1) In terms of spatial distribution, the regions higher than the national average are mainly distributed in Northeast China, Shandong Peninsula, Sichuan-Chongqing, Hunan and Hubei, Jiangsu and Anhui and Gansu and Xinjiang. Among them, Jiamusi of Heilongjiang ranks first in China, with a psychological integration level of 3.852; the regions below the national average are mainly distributed in the Southeast coastal areas and some areas of Shaanxi, Gansu and Ningxia, and also scattered in Xigaze of Tibet, Chengde of Hebei, Yuxi of Yunnan and other cities. Except for Shandong Peninsula urban agglomeration and a few cities such as Shaoguan, Maoming, Huai'an, Jiangsu and Qinhuangdao, Hebei, the psychological integration level of the floating population in most other cities in the Eastern region lags behind, which is lower than the national average. Among them, Chaozhou in Guangdong ranks last in the country, with a psychological integration level of 2.704, followed by Taizhou and Wenzhou of Zhejiang, and Yunfu of Guangdong.

(2) Floating population in the Eastern region, especially in Beijing, Tianjin, Hebei, Yangtze River Delta and Pearl River Delta, is more difficult to get the relevant rights and interests attached to the household registration system than the registered residence. On this basis, the urban living cost, labor market competition and cultural and behavioral differences brought by inter provincial mobility further hinder the urban integration of the floating population, resulting in the "externalization" of psychological identity^[20], and the mentality of "wanderer" or "passerby". In contrast, Sichuan-Chongqing areas have strengthened the sense of identity and belonging of the floating population along with the reform of registered residence system, rapid urban economic development, and open, inclusive and equal environment construction of city. In addition, the psychological integration of Shandong Peninsula urban agglomeration and a few Northwest cities is also at a high level. It can be seen that the differentiation pattern of psychological integration of China's floating population breaks through the zonal difference between coastal and inland, which is inconsistent with the macro socio-economic development pattern. This shows that in the process of urbanization, the construction process of the psychological integration of the

floating population is complex^[21,22]. Affected by the urban environment such as economy, culture and society, it will also be affected by many factors such as the individual, family and floating characteristics of the floating population.

(3) The level of psychological integration of the population in Tibet and Shaanxi, Gansu and Ningxia is relatively low, forming an obvious differentiation with their adjacent areas. Among them, Tibet has a special natural and geographical environment, and the process of industrialization and urbanization is relatively backward. At the same time, it is affected by religion, customs and culture with local characteristics; at the individual level, it is also affected by micro factors such as capital stock, social support and relationship network. For example, the literacy rate of the floating population in Tibet is low, and the population with high school education or below accounts for more than 90%. The floating population is also dominated by inter provincial migration and has a short residence time in the local places. It can be seen that in the process of migration, the floating population in Tibet may have local adaptability obstacles in many aspects, so that it is difficult to integrate into the mainstream of the society.

2.2. Spatial agglomeration characteristics of psychological integration of floating population

The calculation results show that the global Moran's *I* estimate of the psychological integration of China's urban floating population is 0.317, which has a strong spatial dependence effect through the 1% significance level test. That is, within a certain geographical range, the psychological integration level of urban floating population is similar. On a local scale, there are high value aggregation and low value aggregation patterns in the psychological integration level of floating population. The results are shown in **Figure 2**.

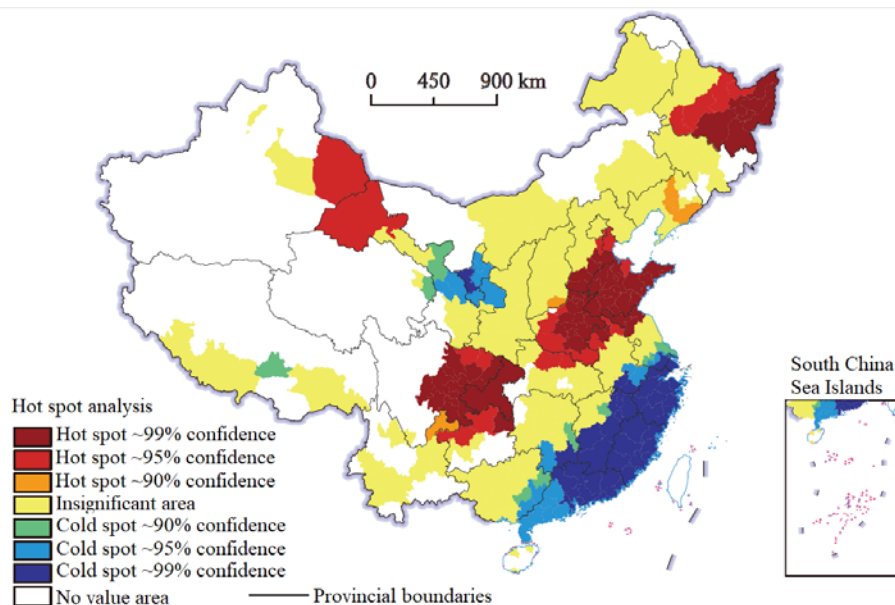


Figure 2. Hotspot analysis of urban migrants' psychological integration in China in 2017.

Note: It is based on the standard base map with drawing review number GS(2020)4630, the base map is not modified; the data does not include prefecture level and above cities in Hong Kong, Macao and Taiwan, Fushun City, Tonghua City and Sansha city.

As can be seen from **Figure 2**: (1) spatially, hot spots are concentrated in the North (except Sichuan-Chongqing), including the Huang-Huai-Hai region, the north of Northeast China, Jiuquan, Gansu, Hami, Xinjiang and other cities. The cold spot area is located in the Southeast coastal area, including the Yangtze River Delta, Pearl River Delta, Haixi Economic Zone and its adjacent areas, including Shanghai, Zhejiang, Fujian and Guangdong, as well as most of Jiangxi and southern Hunan. In addition, cold spot cities are also scattered in the

Western region, forming a small-scale agglomeration distribution, such as Yinchuan and Shizuishan in Ningxia. On the whole, there are North-South differences in the psychological integration of China's urban floating population, and the North is better than the South, which is similar to the research conclusions of Tian *et al.*^[22]. (2) On the local scale, Shanghai, south of Jiangsu and Southeast coastal areas rely on local economic and social development to absorb large floating population. However, the effect of the registered residence system and its derivative factors^[12] belongs to the cold area. Sichuan-Chongqing, Northern Guizhou and most parts of Henan are hot spots. One important reason is that in recent years, with the rapid economic and social development of cities in Central and Western China, the floating population has a high willingness to integrate and a good ability to adapt to urban society, which has promoted the process of psychological integration. Under the background of economic downturn and population loss, with the urbanization construction and urban institutional arrangement in Northeast China, the floating population enjoys relatively perfect social welfare and superior employment and living conditions^[28]. In addition, in terms of individual characteristics, such as mainly undertaking the internal population flow in Northeast China, and similar cultural, social and living backgrounds, the floating population in Northeast China is more likely to be accepted by the local population, thus weakening the degree of psychological exclusion or isolation.

Table 2. The types, names and descriptions of influencing factors of urban migrants' psychological integration

Variable type	Variable name	Variable description
Housing property rights and housing consumption expenditure	X_1	Proportion of people with real estate in inflow place /%
	X_2	Average monthly household housing expenditure/(10,000 yuan/month); take logarithm
Basic public services and population management	X_3	The proportion of the population participating in the new rural cooperative medical system in the registered residence area /%
	X_4	Proportion of population with temporary residence permit/residence permit /%
	X_5	Proportion of population with health records /%
Employment status and wage income	X_6	Proportion of employers /%
	X_7	Wage income/(10,000 yuan/month); take logarithm
Local economic and social development	X_8	Per capita GDP/(10,000 yuan/person); take logarithm
	X_9	GDP growth rate in recent five years /%
	X_{10}	Per capita savings deposits of urban and rural residents/(10,000 yuan/person); take logarithm
Educational level	X_{11}	Years of education/a
	X_{12}	Household size/person
Family mobility characteristics	X_{13}	Proportion of inter provincial inflow /%
	X_{14}	Local residence time/a

Note: The new rural cooperative medical insurance is a mutual medical assistance system organized, guided and supported by the government, in which farmers voluntarily participate, individuals, collectives and governments raise funds from various sources, and it focuses on the overall planning of serious diseases. It is abbreviated as the "NCMS".

2.3. Mechanism analysis

2.3.1. Index selection and model construction

Based on social integration theory, push-pull theory, neoclassical economics and new migration economics^[9,16,21], combined with micro data, this paper selects 14 explanatory variables from the aspects of demographic characteristics, mobility characteristics, family characteristics, institutional policies and urban factors (**Table 2**). This paper focuses on individual, family and system factors such as years of receiving education,

employment status, family size and wage income in the inflow area. It also focuses on the action mechanism of macro regional variables such as urban economic development level and development speed from the perspective of urban locality.

Based on Stata 15, the least square method (OLS) is used for linear estimation. After White test, the original hypothesis of homovariance is rejected, and there is significant heteroscedasticity in the model. According to the general practice, adopt “OLS + robust standard error” to make corrections. In the VIF test, the VIF values of all variables are less than 3, the average VIF value is 2.02, and there is no multicollinearity. The model results of “OLS + robust standard error” are analyzed in this paper (Table 3).

Table 3. Regression results of urban migrants’ psychological integration

Variable	Coefficient	OLS Standard error	t value	Coefficient	OLS + robust standard error	t value
X ₁	0.0033***	0.0006	5.72	0.0033***	0.0006	5.49
X ₂	0.0028	0.0200	0.14	0.0028	0.0240	0.12
X ₃	-0.0012**	0.0006	-1.99	-0.0012*	0.0007	-1.80
X ₄	0.0014***	0.0005	3.00	0.0014***	0.0005	2.99
X ₅	0.0023***	0.0004	5.64	0.0023***	0.0005	4.99
X ₆	0.0047***	0.0016	2.95	0.0047***	0.0018	2.65
X ₇	-0.1118**	0.0479	-2.33	-0.1118*	0.0660	-1.69
X ₈	-0.0010	0.0245	-0.04	-0.0010	0.0279	-0.04
X ₉	0.0037**	0.0017	2.21	0.0037**	0.0016	2.31
X ₁₀	-0.0619**	0.0300	-2.06	-0.0619**	0.0286	-2.17
X ₁₁	0.0317***	0.0114	2.77	0.0317**	0.0132	2.40
X ₁₂	-0.0406*	0.0230	-1.76	-0.0406	0.0254	-1.60
X ₁₃	-0.0018**	0.0004	-4.11	-0.0018***	0.0005	-3.73
X ₁₄	0.0056	0.0048	1.18	0.0056	0.0052	1.08
Constant term	2.8548***	0.2030	14.07	2.8548***	0.2509	11.38
F statistic		23.98			29.79	
Prob>F		0.0000			0.0000	
Adj R ²		0.5251				0.5479

Note: *** indicates $P < 0.01$; ** indicates $P < 0.05$; * indicates $P < 0.1$; see Table 2 for the explanation of X₁~X₁₄ variables.

2.3.2. Result interpretation

(1) Housing property rights and housing consumption expenditure. Owning housing is the basis for the floating population to integrate into the city^[29]. In recent years, urban real estate prices are on the rise continuously, raising the citizenization cost of the floating population. Affordable housing in China is usually the main protection target of the city registered residence population. The floating population received different treatment on their living rights^[29,30]. It is difficult to offset or deal with the crowding out effect of urban housing prices. Under the influence of market economy and Chinese traditional cultural concepts, owning formal housing in the inflow area is not only an important symbol for the migrant population to cross the urban threshold, but also the spiritual sustenance of the floating population, representing the beginning of a stable life, which plays a positive role in constructing the sense of belonging and identity of the floating population. In terms of space, Lin *et al.*^[31] believe that compared with the Eastern coastal areas, the floating population in the Central and Western regions is more likely to realize the goal of “settle down” by building their own houses or purchasing commercial houses. It can be seen that this zonal difference plays a fundamental role in shaping the regional differentiation pattern of China’s urban psychological integration.

The floating population, especially the rural-urban floating population, mostly belong to low-income groups with limited housing payment capacity, and are forced to choose informal communities, such as villages in cities. In terms of residential choice, problems such as space congestion, poor community environmental quality and location marginalization are more prominent, forming division or differentiation in urban social space. Generally speaking, with the increase of family housing expenditure and the improvement of living conditions, it is more

likely to be in line with high-quality quality life or positive urban experience. In the model, the effect of household monthly average housing expenditure (X_2) is not significant. The reason is that facing the pressure of urban life, low-income groups tend to choose to reduce housing consumption expenditure in cities, which has become a helpless move to adapt to urban life. From “have a place to live” to “live well”, improving the living conditions of the floating population will be an effective way to overcome the isolation of living space and improve the sense of happiness and satisfaction.

(2) Basic public services and population management system. The participation of registered residence in the new rural cooperative medical system (X_3) has hindered the psychological integration of inflow places. The implementation of temporary residence permit/residence permit system (X_4) in the inflow area and the equalization of basic public services, such as the establishment of health care records (X_5), are conducive to promoting the psychological integration process of floating population. In recent years, the establishment and improvement of the “NCMS” has played an important role in safeguarding the basic survival rights and interests of the rural population and alleviating poverty caused by illness and return to poverty due to illness. However, the NCMS as a non portable medical insurance scheme has significant regional segmentation characteristics, such as payment, insurance, off-site treatment and reimbursement settlement, etc., which are linked to the registered residence and are difficult to meet the requirements of social mobility development. This objectively strengthens the connection between the floating population and the registered residence and forms the “pull back effect”^[32], which in turn affects the psychological integration process of the floating population in the inflow area.

The residence permit has gradually replaced the temporary residence permit and has been fully implemented throughout the country, providing certain institutional conditions for the floating population to enjoy civil rights equally. As a new concept of the registered residence system reform, from the state to the place, we have clearly empowered the floating population to ensure the necessary resources and opportunities,^[33] which has actively promoted the psychological integration process of the floating population. It cannot be ignored that there are great differences in system reform and local practice in different cities. Based on the consideration of local interests, the application threshold of residence permit is different in different places, and the “gold content” is different. Generally, the higher the application threshold, the more benefits and services are tied to it. The three Eastern cities and the central cities of the Central and Western part of China have the selection criteria for screening. Different groups have differences in registered residence, education and social security, which are difficult to meet the basic demands of integration of registered residence interests in urban and rural areas, and are not conducive to the psychological integration of migrants.

(3) Employment status, wage income and local economic development. Compared with employees, self-employed people have stronger willingness and ability to integrate^[34], which is related to differences in social strata, social capital and social network. From the analysis of cross regional population mobility, most of the floating population enter labor-intensive industries. For example, the industrial structure of Eastern cities such as Chaozhou in Guangdong, Taizhou in Zhejiang and Wenzhou is dominated by medium and low-end manufacturing. The floating population is at a disadvantage in labor remuneration, working environment and employment stability, and the quality of life and development are poor. Under the control of other conditions, the increase of wage income (X_7) of floating population is not conducive to the psychological integration of floating population, which is similar to the research conclusion of Yang^[35]. At the level of income deprivation, there is a relatively large difference between urban and rural areas, and there is no comparison between the characteristics of income deprivation and the mainstream population. In reality, in the Eastern coastal cities or large cities in the Central and Western regions, the floating population, especially the rural-urban floating population, may obtain higher wage income than the similar population in underdeveloped areas, but it is still at a disadvantage compared with

the local population; in underdeveloped areas, small and medium-sized cities and towns, the wage income of the floating population is lower than that of the same population in the Eastern region, but its absolute income is more likely to be close to the local population level. The income gap between the two may be small, which will help to realize the psychological integration of the floating population.

From the perspective of urban characteristics, with the expansion of urban economic scale, agglomeration effect leads to negative externalities^[17], such as housing shortage, survival cost and environmental pollution, which give birth to negative urban experience, and the psychological integration level of floating population may continue to decline. For example, in recent years, the second and third tier cities have become a new choice for the floating population to escape the trend of “Beijing, Shanghai and Guangzhou”. In the model, the role of economic development level (X_8) is not significant, mainly because at this stage, China’s population flow is a typical economic driving type, and the level of urban economic development has a strong attraction for population cross regional flow and plays a key role in population urbanization. In contrast, the faster the speed of urban economic development (X_9), the higher the psychological integration level of floating population may be. Under the new normal, China’s economic growth has slowed significantly. From the perspective of regional comparison, under the background of policy support and industrial transfer, the economic growth rate of the Central and Western regions has exceeded that of the Eastern region for years, and the attraction to the floating population has been strengthened. For example, “Rongpiao” has attracted many young people to choose to become “new Chengdu people”. In contrast, affected by the financial crisis, the economy in the Eastern coastal areas is relatively depressed, and some floating people return passively due to unemployment, reducing the level of urban integration of the floating population. Finally, the per capita savings deposit (X_{10}) of urban and rural residents is not only the representation of the level of regional social and economic development, but also the reflection of regional residents’ economic income, consumption ability and consumption habits. The higher the savings deposits of urban and rural residents in the region, the higher the requirements for the urban adaptability of the floating population, which increases the difficulty of citizenization.

(4) Education level and population mobility characteristics. The level of education (X_{11}) has a positive effect on the psychological integration of floating population. First, highly educated people have competitive advantages in technical ability, professional status and economic returns, which is conducive to upward social mobility. Low educated population, such as migrant workers, lack professional skills, and have narrow employment channels and poor employment quality, which affect their identity cognition and urban identity^[11,16]. Second, cities have a higher degree of acceptance of highly educated people. In recent years, the competition for urban talents has intensified, and local governments have issued a series of talent introduction policies. Education or skills are generally used as differentiation conditions. Highly educated and skilled people enjoy favorable treatment in settlement and housing, and they have more opportunities to participate in urban economic, social and cultural life, which accelerate the transformation to urban residents. Theoretically, the family migration model is conducive to the function of emotional support, capital accumulation and social network, and the smooth realization of social integration^[36]. In contrast, this paper argues that under the circumstances of liquidity risk and uncertainty, the positive incentive mechanism for the expansion of household size in the inflow place fails to play effectively. The cost of relocation and family living arrangements, such as the expansion of the family size and the burden of medical care, may increase. Just as the existing research viewpoint^[37], in terms of family form, separating families and their cross regional livelihoods has become a strategic choice for Chinese families to maximize economic utility. Compared with intra provincial mobility, inter provincial mobility faces adaptability obstacles in social networks, cultural concepts and behavior habits due to the widening spatial distance, and the potential risk of urban integration increases. Spatially, the inter provincial floating population is mostly

concentrated in Beijing, Tianjin, Guangdong and Shanghai, among which the inter provincial floating population in some cities accounts for more than 80%, which provides an explanation for the relatively low psychological integration of the floating population in the Eastern coastal areas. Finally, the effect of residence time (X_{14}) on the psychological integration of floating population is not significant. It may be that with the increase of residence time in the city, the more we can perceive the irrationality in the institutional environment or policy arrangements, the lower the urban identity^[38].

3. Conclusions and Suggestions

(1) In the process of new urbanization, China's floating population is in a good state of urban integration at the psychological level, which has positive integration intention and good integration experience, and tends to get rid of the state of "marginalization".

(2) The regional differentiation of psychological integration of floating population is significant. Northeast China, Shandong Peninsula, Sichuan and Chongqing, as well as Hunan-Hubei, Jiangsu-Anhui, Gansu-Xinjiang and other inter provincial border areas have comparative advantages. The Eastern coastal areas such as Beijing-Tianjin-Hebei, the Yangtze River Delta, the west bank of the Taiwan Strait and the Pearl River Delta, as well as the Shaanxi-Gansu-Ningxia region, lag behind significantly. On the whole, the spatial differentiation characteristics of the psychological integration of China's urban floating population are inconsistent with the macroeconomic development pattern. The psychological integration level of floating population has an obvious agglomeration state. In addition to Sichuan and Chongqing, the hot spots are concentrated in the North, and the cold spots are located in the Southeast coastal area, showing North-South differentiation.

(3) Owning real estate, employer status and higher education level in the inflow area are conducive to the psychological integration of the floating population. There is a mismatch between the vertical increase of the wage income of the floating population and the horizontal closeness between the urban population in the inflow place, which is affected by the sense of relative deprivation and is not conducive to the process of psychological integration. The registered residence system arrangement between outflow and inflow has different effects. The registered residence has a significant constraint effect on the NCMS. Temporary residence permit/residence permit system and equalization of basic public services are the key factors affecting psychological integration. At the urban level, the faster the urban economy develops, the more conducive it is to realize the psychological integration of the floating population. Affected by liquidity risk, inter provincial liquidity has a negative effect. The effects of urban economic development level, family size and local residence time are not significant.

Based on the above conclusions, the following suggestions are put forward. First, promote the construction of the housing market and housing security system, and establish a housing system with multi-body supply, multi-channel security and simultaneous rent and purchase to meet the multi-level housing needs of the floating population. From "have place to live" to "live well", overcome the isolation of living space and improve the living conditions and quality of life of the floating population. Second, establish a multi-level vocational education system and improve the human capital of the floating population. Encourage the floating population to obtain employment and entrepreneurship through multiple channels and forms, so as to stabilize employment, promote entrepreneurship and development, and comprehensively improve their economic status. Thus reduce the income gap between them and the local urban population, and meet the new expectations of a better life in the city of the floating population. Third, we should further promote the reform of registered residence system to achieve social equity and justice, especially the construction of a family oriented public service supply system to meet the objective needs of family migration and residence stabilization, and enhance the sense of gain, happiness and

satisfaction of the floating population. Fourth, accelerate the transformation of government roles and functions, improve the supply capacity of service management, and create a healthy and inclusive urban social environment. In urban governance, differentiated regulation and control shall be implemented. Reasonably guide the orderly flow of population, establish and improve the coordination mechanism of cross regional urban development, and realize regional coordinated development.

Finally, based on the cross-sectional data, the analysis of temporal and spatial variation characteristics is insufficient. Limited by data, the analysis of the mechanism of psychological integration of floating population is not comprehensive enough, and there is the problem of missing variables, which needs to be further discussed in future research.

Conflict of Interest

The authors declared no conflict of interest.

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