The Measurement of Urban Integration of Migrant Workers in Chongqing and Analysis of Its Influencing Factors

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Abstract: Based on the sixth chapter of "Chongqing Survey Yearbook 2022" and the most authentic and effective annual data of migrant workers in Chongqing obtained from the public database, this paper analyzes the current status of urban integration of migrant workers in Chongqing, and discusses the factors that affect the degree of urban integration. major factor. First, this paper constructs a comprehensive evaluation system of urban integration under the 4.9.20 model, and analyzes the status quo of urban integration of migrant workers from four dimensions; then constructs five multiple linear regression models, and incorporates nine independent variables into the multiple linear regression equation. The urban integration degree and its four sub-integration degrees are predicted respectively. According to the research, the urban integration rate of migrant workers in Chongqing is 51.82%, and the urban integration is in a state of "semi-integrated, semi-urbanized", and there is even a phenomenon of "cultural gap", and there is still a lot of room for improvement. The positive impact of migrant workers' income level, education level and gender differences on each sub-dimension and urban integration is particularly significant.

Keywords: Migrant Workers; Urban Integration; Comprehensive Evaluation System; Multiple Linear Regression Model

Introduction

As of the end of 2021, a total of 7.563 million migrant workers in Chongqing have transferred their households, and the urbanization of the registered population has reached 49.63%. In order to investigate the current situation of urban integration of migrant workers in Chongqing and its influencing factors. This paper uses the relevant data of migrant workers in Chongqing from 2002 to 2021 to construct an indicator system for urban integration of migrant workers in Chongqing, and explores the factors and degrees that affect urban integration .

1. Literature Review and Innovation

In foreign countries, there are few literatures related to urban integration of migrant workers, and no definite research system and theory have been established. The selection method of urban integration measurement indicators is relatively conventional, and the feasibility is low. There are not many domestic studies on urban integration. Feng Xiaotian selected nine indicators from five dimensions to analyze the urban integration of migrant workers in the Three Gorges area; Hu Rong and Wang Xiao found that social capital can promote the urban integration of migrant workers; Wang Wen Zhi and Li Ruifeng believe that the degree of mental health has a significant impact on the urban integration of migrant workers.

The main innovation points:

① Construct a comprehensive evaluation system for city integration from four dimensions, and propose a 4.9.20 index selection model, so as to achieve a clearer and clearer dimension distinction, a wider range of indicators, and a comprehensive and detailed coverage; ② Based on multiple linear regression to deal with multiple Taking advantage of the influence of factors, a multiple linear regression model is constructed to highly fit the impact of each indicator on the urban integration of migrant workers.

2. Calculation of Urban Integration Based on Comprehensive Evaluation Index system

2.1 Data Sources

This paper selects the annual data of migrant workers in Chongqing from 2013 to 2021 to investigate the status quo of urban integration of migrant workers. All the data used come from Chapter 6 of "Chongqing Survey Yearbook 2022" - "Migrant Workers" and "2021 Monitoring Survey Report on Migrant Workers". A total of 184 survey areas and 1,840 farmer households were selected in the city. The samples are distributed in 24 districts of the city and 5 counties surveyed by the country, which are highly representative.

2.2 Migrant Workers Integration Status

In 2021, the total number of migrant workers in China will reach 292.51 million, an increase of 2.4% compared to last year . Among them, the total number of migrant workers in Chongqing reached 7.563 million, accounting for 33.48% of the total population. In order to deeply explore the urban integration of migrant workers in Chongqing, this paper analyzes the status quo of urban integration of migrant workers under economic, social, cultural and psychological conditions from four dimensions: economic status, social relations, ideology and culture, and psychological identity.

3. Integration Index System Construction

3.1 Overview of Urban Inclusion

Urban integration is a measure of the degree of difference between urban residents and non-citizens. This paper uses statistical methods to quantify the concept of urban integration, uses detailed numerical values to reflect its size, and creates a comprehensive evaluation system to analyze the status quo of urban integration of migrant workers in Chongqing.

3.2 An operational framework for urban integration of migrant workers

Scientific index selection and system construction play a decisive role in the measurement of integration. On the basis of reference to domestic and foreign literature, this paper proposes to comprehensively measure the urban integration of migrant workers from four dimensions: economic status, social relationship, ideology and culture, and psychological identity. On the basis of extensively verifying the research results of various scholars and the theoretical analysis of expert assignments, this paper attempts to establish a variety of integration frameworks, and finally creatively proposes the 4·9·20 model, which contains detailed implications in four dimensions. 9 first-level indicators and 20 second-level indicators were identified, and then quantitative analysis and data processing were carried out.

3.3 Analysis on the Quantification of Urban Integration and Its Presentation Characteristics

3.3.1 Migrant workers have a stronger sense of belonging to the city where they live, and their enthusiasm has increased

Statistics show that migrant workers live in cities of different sizes, and their sense of belonging has increased compared with the previous year. 41.5% of the migrant workers believed that they had fully integrated into the city where they lived, an increase of 0.1 percentage point compared with last year, and 83.0% said that they were very or relatively adaptable to life in the city where they lived.

3.3.1 The urban integration of migrant workers presents a state of "semi-integration, semi-urbanization"

Combined with the research of domestic and foreign scholars, it is believed that migrant workers with a score of less than 35 have a low degree of urban integration, and those with a score of 35-55 have a low degree of integration. A score of 55 is defined as a semi-integrated state, and a score of 55-75 is judged as integrated. The score is relatively high, and the score of migrant workers who

have already integrated into the city is above 75 points. According to the data results, the maximum urban integration degree of migrant workers in Chongqing is 88.63, the minimum value is 23.78, and the average value is 51.8268. Therefore, it can be said that the urban integration status of migrant workers in Chongqing is relatively low, presenting a stage of "semi-integration and semi-urbanization" .

3.3.2 Migrant Workers' Urban Integration Produces the "Cultural Disparity" Phenomenon

In this paper, the scores of the four dimensions are processed with a percentage system, and the cultural integration rate is 59.48%, the economic integration rate is 56.91%, the psychological integration rate is 51.78%, and the social integration rate is 39.06%. This kind of situation is the unique cultural gap phenomenon in the process of urban integration, that is, the phenomenon of sluggish urban integration in the process of social change. The reason is that some cultural clusters are backward.

4. Analysis of Influencing Factors of Urban Integration Based on Multiple Linear Regression

To this end , this paper constructs a multiple linear regression model, and determines the feasibility of the model through the variable collinearity test. Finally, 9 independent variables are included in the multiple linear regression equation to solve the results of urban integration and its four sub-integrations, and analyze the impact of each variable on the city.

The multiple linear regression model combines multiple known independent variables to study the linear relationship between a dependent variable and multiple independent variables . The general form of the model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_j X_j + \cdots + \beta_k X_k + \mu \quad (1)$$

In the formula: k is the number of independent variables, $\beta_j (j = 1, 2, \cdots, k)$ is the regression coefficient, and is μ the random error of the influence after n removing k independent variables . Y The matrix expression of a stochastic equation is:

$$Y = X\beta + \mu \quad (2)$$

In the formula: If X the rank of the column is full, the least square estimation method can be used, and the estimated value is:

$$\hat{\beta} = (X'X)^{-1} X'Y \quad (3)$$

After obtaining the regression coefficients of the respective variables, it is necessary to conduct statistical tests on the sample regression functions to determine the reliability of the estimates, including goodness-of-fit tests and the significance test of the overall linearity of the equation.

Goodness-of-fit test (coefficient of determination):

Use statistics to measure the fitting degree of the sample regression to the sample observation value, which is recorded as the $TSS = \sum \left(Y_i - \overline{Y}\right)^2$ sum of squares of the total deviation, $ESS = \sum \left(\hat{Y}_i - \overline{Y}\right)^2$ the sum of squares of the regression, and $RSS = \sum \left(Y_i - \hat{Y}_i\right)^2$ the sum of squares of the residual, then:

$$R^2 = \frac{ESS}{TSS} = 1 - \frac{RSS}{TSS} \quad (4)$$

R^2 is the coefficient of determination, the closer this statistic is to 1, the better the fitting effect.

Significance test (F test):

the null hypothesis H_0 is established, the statistic

$$F = \frac{ESS/k}{RSS/(n-k-1)} \quad (5)$$

obeys the distribution $(k, n-k-1)$ of degrees of freedom F , where TSS、ESS、RSS is the same as before . Therefore, given the significance level α , the critical value is obtained by looking up the table , and $F_\alpha(k, n-k-1)$ the numerical value of the statistic $F > F_\alpha(k, n-k-1)$ is obtained according to the sample , and F the null hypothesis is rejected H_0 to judge whether the overall linear relationship of the original equation is significantly established.

4.1 Variable collinearity test

In order to ensure that there is no collinearity among the independent variables of the multiple linear regression model, it is necessary to conduct collinearity analysis on the sample data to reduce the error value of the variance and standard deviation of the model results. The variance inflation factor and allowable value are the main reference indicators of collinear statistics . The results show that the variance inflation factors of the respective variables in this paper are all less than 10, between 1.084-2.352, and the allowable values of each variable are greater than 0.2, and the results are all between 0.659-2.352. between 0.892. The collinearity index data of all independent variables are within the acceptance domain, which means that there is no serious collinearity problem.

4.2 Analysis of Multiple Linear Regression Results

When using the model to analyze the influencing factors of migrant workers' urban integration, this paper establishes five models for social integration, economic integration, cultural integration, psychological integration, and urban integration. Since the five models have passed F the test, the fitting degree is good, and the standardized ones R^2 are all close to 1, so the impact of each factor on the urban integration of migrant workers can be analyzed in detail. Through the analysis of the model data, Sig the values of the respective variables are all less than 0.05, passing the significance test, and the factors and the degree of influence that affect the urban integration of migrant workers can be judged by referring to the standardized regression coefficients of the respective variables .

5. Conclusion

5.1 Chongqing's urban integration of migrant workers presents a state of "semi-integration, semi-urbanization"

This paper comprehensively considers multiple dimensions to construct a comprehensive evaluation system for the urban integration of migrant workers, and uses specific data to reflect the level of urban integration. According to the measurement results, the urban integration rate of migrant workers in Chongqing is about 51.82%, showing an upward trend compared with previous years. Although the data results show that the sense of belonging of migrant workers in Chongqing to the city they live in has increased, but the degree of urban integration is still flat at this stage, showing a state of "semi-integration and semi-urbanization" as a whole, and even the phenomenon of "cultural gap", there is a lot of room for improvement.

5.2 Monthly income, education level and gender have particularly significant effects on urban integration

Through multiple linear regression analysis, it is found that 4 dimensions and 9 variables have a significant impact on integration, among which monthly income level (0.229), education level (0.179) and gender (0.157) have a prominent positive impact on each integration, namely The urban integration of migrant workers with relatively higher monthly income and higher education level is relatively greater; and the urban integration of men is higher.

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