

Study on the Impact of Population Mobility on the High Quality Development of Urbanization in the Shuangcheng Economic Circle of Chengyu Region

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Abstract: *The Chengdu Chongqing dual city economic circle is an important planning and construction area for high-quality economic development in the western region, and it is the requirement of the country for the construction and development of the Chengdu Chongqing dual city economic circle in the new era. Therefore, in this special period of strategic planning and development, exploring the impact of population flow in ChengduChongqing on the urbanization construction and development will help us correctly understand population flow, and provide effective basis for relevant decision-making to better promote the high-quality development of urbanization in ChengduChongqing region.*

Keywords: *Population Mobility; Chengdu-Chongqing Dual City Economic Circle; Urbanization*

1. Background and value of the study

ChengduChongqing region is an important supporting platform for the western development centered on Chengdu and Chongqing, and it is also the most densely populated region in the western region. It is also an important planning and construction area for high-quality economic development in the western region. On January 3, 2020, the sixth meeting of the Central Committee of Finance and Economics was held to study the promotion of the construction of the dual city economic circle in the ChengduChongqing region, making the ChengduChongqing region an important economic center with national influence, a center for scientific and technological innovation, a new highland for reform and opening up, and a high-quality living and livable place, promoting high-quality development. This is an important driving force for promoting the construction of the ChengduChongqing region as a new urbanization demonstration area.

This article takes the impact of population mobility on the high-quality development of urbanization as the research center, and takes the dual cityeconomic circle in Chengdu-Chongqing Region as the research object to further explore the effects and influencing factors of population mobility on the high-quality development of urbanization. The research value of this article mainly includes the following two aspects:

1) Based on literature data and relevant theoretical reviews, this article integrates the theories of population mobility and high-quality development of the Chengdu-Chongqing dual city economic circle, and conducts in-depth discussion and analysis of the internal relationship between population mobility and high-quality development of the Chengdu-Chongqing dual city economic circle within the same framework, resolving the limitations of single analytical research in recent years;

2) The value of this article in empirical analysis is to use a multiple regression model to test and evaluate the effect of population mobility on the high-quality development of urbanization in the Chengdu Chongqing dual cityeconomic circle. The empirical test result is that population mobility has a positive promoting effect on the high-quality development of urbanization in the Chengdu Chongqing dual cityeconomic circle.

2. Main research contents and research ideas

The purpose of this study is to explore the internal relationship between population mobility and the high-quality development of the Chengdu-Chongqing dual urban economic circle, and to provide new ideas for the high-quality development of urbanization. In terms of research methods, theoretical

analysis and empirical analysis are used to explore the relationship between population mobility and the high-quality development of urbanization in the Chengdu-Chongqing dual urban economic circle from multiple perspectives. Through literature review, the relevant literature and theoretical basis for the high-quality development of urbanization in the Chengdu-Chongqing dual urban economic circle are reviewed, and the basic characteristics and trend distribution of population mobility in the Chengdu-Chongqing region, as well as the current situation of urbanization in the Chengdu-Chongqing dual urban economic circle, are briefly described. Finally, a multiple regression model is used to empirically analyze the factors affecting the high-quality development of urbanization in the Chengdu-Chongqing dual urban economic circle.

3. Theoretical study on population mobility and high quality urbanization development

3.1. Research on population mobility

There have been many achievements in foreign research on population mobility, such as William Petty's [1] exploration and disclosure of the underlying factors behind the phenomenon of population mobility based on economic theory in the 17th century. Domestic scholars' research on population mobility mainly focuses on the analysis of population mobility trends and factors affecting population mobility. For example, scholars such as Pan Bilin [2] have provided detailed explanations on the "dual core and multi center" characteristics of the Chengdu Chongqing urban agglomeration using Weibo check-in data; Scholars such as Duan Chengrong analyzed nine major trends in the change of domestic floating population since the reform and opening up; [3] Experts such as Wei Lanye have conducted research on income levels and pointed out that population mobility has the most significant impact on income levels; Zhang Weili and other scholars believe that the spatial and geographical distance between urban agglomerations is a stumbling block to population migration and flow.

3.2. Research on high-quality development of urbanization

In recent years, the country has focused on the development and construction of urbanization, thereby promoting the rapid development of the urbanization economy, and academic research on this aspect has also increased. For example, Sheng Jian studied how to support high-quality development of urbanization from the perspective of a modern metropolitan area; In addition, in recent years, there have been several planning outlines for the construction of the Chengdu Chongqing dual city economic circle, and many scholars and experts have also conducted discussions and studies from different perspectives in various directions of the construction and development of the Chengdu Chongqing dual city economic circle. For example, experts such as Lu Yangchun have drawn a knowledge map of economic development in the Chengdu Chongqing region; Yang Bo et al. pointed out that there may be bottleneck cross-border issues such as economic development in the future construction period of the dual economic circle in the Chengdu Chongqing region.

3.3. Research on the impact of population mobility on urbanization development

Urbanization is a complex and comprehensive system engineering that covers many disciplines, driven by multiple factors. Among them, population is not only a factor of social production, but also a main member of urbanization. Population mobility is bound to have an impact on urbanization from different levels. Through the collation of relevant literature, it is found that there have been many research results on population mobility and urbanization development in unilateral research, but the existing literature and data from the perspective of the impact of population mobility on urbanization development and construction is still relatively small. Based on the summary of existing research results, this article intends to use quantitative analysis and empirical analysis methods to conduct a study on the impact of population mobility on the high-quality development of urbanization in the Chengdu Chongqing dual city economic circle, providing a new idea on how to rationally allocate human resources through population mobility, in order to promote the high-quality development of urbanization in the Chengdu Chongqing dual city economic circle.

4. Data sources and empirical analysis

This article uses the data of 16 urban areas such as Chongqing and Chengdu within the Chengdu-Chongqing Dual City Economic Circle from 2008 to 2018 as reference data, and the relevant

data is sourced from the official statistical data of various local government websites, as well as official data from the "Sichuan Statistical Yearbook" and "Chongqing Statistical Yearbook".

In order to explore the impact of population mobility on the urbanization development of the ChengduChongqing dual urban economic circle, this article constructs a multiple linear regression analysis method, taking important factors that affect the urbanization development, such as population mobility, human costs, and economic and trade development, as influencing factors, and incorporating the above influencing factors into the multiple linear regression analysis method, so as to explore the impact of these three important influencing factors on the development of urbanization. In this article, we use M to express the level of urbanization development, and the urbanization rate is measured by the proportion of the population of 16 cities in the total population of the region from 2008 to 2018; We use the letter Y to indicate the economic and trade development of urbanization in the region. The degree of openness to the outside world can, on the one hand, drive economic development and thus affect the urbanization rate, on the other hand, improve the export of agricultural and sideline products, and further promote agricultural and rural development; We use the letter Z to denote the regional population inflow rate and the letter X to denote the labor cost. In order to examine the labor cost, we use the calculation method of per capita education years in this article, namely:

$$\text{Per capita education years} = \frac{\text{Number of primary school graduates}}{\text{total population}} \times 6 + \frac{\text{Number of junior high school graduates}}{\text{total population}} \times 9 + \frac{\text{Number of high school graduates}}{\text{total population}} \times 12 + \frac{\text{Number of university or above education background}}{\text{total population}} \times 16$$

This article constructs a multiple regression model (the relationship between population mobility and urbanization) to reflect the impact of population mobility on urbanization development:

$$M = \beta_0 + \beta_1 Y + \beta_2 Z + \beta_3 X + \varepsilon_i$$

In the above formula β_0 - β_3 is a constant, M represents the urbanization rate, Y represents economic and trade development, Z represents the regional population inflow rate, and X represents the per capita education years.

Using the corresponding data of 16 cities in the Chengdu Chongqing dual economic circle from 2008 to 2018, the regression result is $M = -3.1499 + 0.1058Y + 0.1977Z + 0.4536X$ $R^2 = 0.9098$

From the results of the above multiple regression model, it can be seen that 90.98% of the urbanization development level in the ChengduChongqing region is constrained by three factors: regional economic development, population mobility, and the number of years of education per capita. Each 1% increase in the population inflow rate will promote the urbanization development level of the ChengduChongqing dual city economic circle to increase by 0.1977 percentage points.

According to the multiple regression results of the influencing factors of urbanization development level, population inflow has a significant positive impact on the improvement of urbanization level, indicating that the population that flows into dual economic circle in ChengduChongqing region each year directly participates in urbanization construction, thereby promoting the improvement of urbanization level in the region, or promoting the urban economic development of the region through tourism, investment and construction. The impact of per capita education on the level of urbanization is positive, indicating that improving the quality of the population in the ChengduChongqing dual economic circle can promote the quality of human capital, accelerate the accumulation of human capital in the ChengduChongqing dual economic circle, and attract more human capital inflows, so as to definitely promote the improvement of the development level of urbanization.

5. Research conclusions and recommendations

5.1. Optimize the urbanization layout of the dual city economic circle in Chengdu-Chongqing region and guide the rational flow of population

Population mobility is a process of optimizing the allocation of production factors, which is conducive to improving the economic and social benefits of urbanization, and promoting the socio-economic development of cities and towns. Therefore, the development thinking of ChengduChongqing region should optimize the layout of urbanization from the perspective of its own resources, environment, and economic characteristics, and guide the rational flow of population.

Currently, the development level between the cities in the dual urban economic circle in ChengduChongqing region presents a phenomenon of "polarization" and uneven development. If we want to get rid of this "polarization" state of the main city of Chengdu-Chongqing, make the main city of ChengduChongqing become a green leaf, and provide an escort type of auxiliary driving force for the development of surrounding urbanization, it is necessary for the governments of ChengduChongqing to adjust the layout of urbanization, promote rational population flow, and compare the development characteristics with the central dual cities. The advantage of development in other regions is the low cost of employment and living, but their ability to attract employment and agglomeration effect are far lower than those of the twin cities. Therefore, from the strategic perspective of macro development, the government should gradually eliminate the imbalance in policies and various resource support between the core twin cities and secondary towns, so that each region and the central twin cities are in a fair development and competitive environment.

5.2. Promoting agricultural and rural development, improving agricultural production efficiency, and releasing surplus labor

According to the current development mode of agriculture and rural areas, there are two main factors for economic development: first, the production factors required for agricultural production, such as fertilizers, pesticides, and large-scale agricultural machinery; The second is the amount of labor input into agricultural production, which are necessary conditions for improving the output of unit labor. On this basis, consideration should also be given to exploring the development model of agricultural and rural modernization driven by digital technology. This development model requires appropriately increasing the input of production factors such as machinery, electricity, fertilizers, and pesticides required for agriculture, and reducing the amount of labor input. At the present stage, there are problems such as relatively scattered agricultural operations, relatively small agricultural scale, waste of labor resources, and low agricultural production efficiency, which will hinder the release of rural surplus labor to varying degrees. Therefore, it is necessary to continuously accelerate the construction and development of agricultural and rural modernization driven by digital technology, promote the digitalization, networking, and clustering development of all aspects of agricultural production, operation, circulation, and sales, and expand the agricultural and rural development model, in order to promote the release and transfer of surplus labor in the agricultural sector.

5.3. Promoting industrial structure adjustment, boosting economic development, and enhancing the introduction of surplus labor in cities and towns

The development of non-agricultural industrialization and urbanization is the driving force for the migration and flow of rural surplus labor. This is due to the relatively high income of non-agricultural industries, which attracts rural labor to flow into cities and non-agricultural industries. Compared to rural areas, cities and towns have better lifestyles and living standards. This difference has formed a magnetic and demonstration effect on residents in rural areas, attracting the flow of labor to non-agricultural sectors and urban areas. Therefore, government units in ChengduChongqing region need to combine regional industrial advantages, plan and issue industrial development directions, support the development of key industrial chains, and ultimately form industrial clusters. Finally, ChengduChongqing region is a key development area planned by the state for the central and western regions, and green development is the primary condition for protecting the ecological environment. ChengduChongqing region should adhere to the sustainable and healthy development concept of "green water and green mountains are golden mountains and silver mountains", firmly combine its own advantages to develop the tertiary industry and tourism industry, and absorb reasonable inflow of foreign population, so as to accelerate the development and construction of industrial clusters and new urban clusters.

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