Research on the Differences of Social Foundation Development between Border Areas and Central Region Cities under Open Conditions

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Abstract: The governance and development of the frontier is related to the development of the whole country. Compared with the cities in the central region, the development of the social foundation of the frontier cities in China is relatively backward. The reasons for its backwardness are complicated. This paper analyses the reasons for the backward development of social foundation in frontier areas and the differences between frontier areas and central cities. Based on the principal component analysis, this paper makes a quantitative study of the cities in the frontier and central regions. On this basis, it studies the development status, existing problems, development potential and conditions, and differences in competitiveness of frontier cities. Combining with the requirements of the construction of “two-oriented society”, it puts forward that regional economy, industry, factor flow and other aspects should be strengthened through independent innovation, and regional cooperation should be promoted. Developing modern service economy and other strategies to foster competitiveness and coordinated development, this paper gives some suggestions and prospects for the development of frontier social foundation.

1. Introduction

Since the reform and opening up, the central region cities have shown rapid and sustained development. However, at the same time, the regional gap is relatively wide, and China's regional development basically realizes a new pattern of multi-sector group transformation from “point economy” to “plate economy”[1]. The eastern and Bohai Rim regions continue to develop rapidly and continue to serve as the leading geese in China's regional development. The western region has shown a good momentum of development due to the support of the western development policy and the comprehensive reform policy of urban and rural areas[2]. However, the frontier region failed to reflect its comparative advantage and integration advantages, and its development rate was slow, and the gap with the central region has expanded[4].

The city is the main carrier of modern economic development. The development of China's border cities has its own characteristics. The urbanization path should be different from the central area. China's geographical land is vast, and the degree of urbanization is still low. The rapid development of the economy is partly driven by exports, and partly by urban infrastructure. The data shows that China's urbanization process still needs about 30 years, that is, urbanization can still bring economic development[3]. Throughout the study at home and abroad, it basically follows the two dimensions of unbalanced development and balanced development, and studies from differences in composition and decomposition, strategic analysis, quantitative and qualitative research, regional comparison, and economic convergence[5].

In the humanities society in the border areas, the geo-environment is more complicated. These problems should be considered in the process of urbanization. The urban development model of the central region cannot be copied, that is, the path of economic development in the frontier cities has its own characteristics[7]. This paper explores the development ideas of border and central cities from the perspective of the differences and comparisons of urban social development. After summarizing the status quo of the formation and development of cities in China's frontier and central regions, the differences in urban development between the frontier and central regions are analyzed. Combining the development of border cities from the perspective of geo-economic and regional economic integration[8].

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2. The formation and economic development of border and central regional cities in China

2.1. The formation of Chinese cities

The city is the carrier of modern economic development. The initial formation of the city was gradually formed due to the demand for commercial activities. In ancient China, there were two ways to form most cities. First, the demand for business activities has gradually formed. Second, driven by administrative divisions. The urban formation and development model that uses material production as a spatial agglomeration is only suiTable for industry. In ancient times, due to agricultural production, and handicraft production, the scale was limited and the mobility of production factors was poor, it was difficult to produce agglomeration effects and form cities. Whether it is the demand route of commercial activities or the driving of administrative divisions, it involves the basic conditions of transportation[6]. The formation of cities in ancient China's border areas was mostly driven by border defense and administration, as well as the demand for border trade. Most of the cities in the central area are driven by commercial activities and administrative divisions. There are three ways to develop modern Chinese cities. First, the space for material production is naturally concentrated; second, the formation of commercial activities. Third, driven by administrative divisions. After the founding of New China, China's urban development was unbalanced due to changes in economic institutions[9].

2.2. Current situation of urban economic development in China

(a) The current situation of economic development in frontier cities in China. China borders 14 neighboring countries. Its borders are divided into northwest, southwest and northeast. The frontier area accounts for about 60% of the territory area. Historically, because of the Central Plains dynasty's ideas of “gentlemen do not rule the barbarians” and “the barbarians do not rule the barbarians” in the history, the development of the frontier area has been slow, and there is a big gap between the development of the frontier area and the central area. Until modern China changed from an ancient dynasty to a modern democratic country, it began to pay attention to the governance and development of the borderland[3]. Since 1949, the economic development gap between the frontier areas and the central areas has been narrowed by the third-line construction in the frontier areas. After the reform and opening-up, the policy tends to be in the southeast coastal central areas. The development of the frontier areas is relatively slow. Only by the implementation of such strategies as the western development and the revitalization of the old industrial bases in the northeast can the economic development of the frontier areas receive strategic attention. In recent years, the economic development has been fast, but there is still a big gap between the central region and the southeast coastal cities and the central region[5].

(b) Current status of urban economic development in the central region. China's coastal cities are developing at a faster rate. At the low end of the global industrial chain, mainly manufacturing. The added value is low. There is no pricing power for international commodities.

3. Research methods and results analysis

3.1. Index selection and model construction

According to the principles of scientificity, comparability, representativeness and operability, and considering the authoritativeness of data and the availability of data, nine evaluation indicators are selected from four aspects: comprehensive economic strength, openness to the outside world, talent and scientific and technological level, infrastructure, and the evaluation system of this study is established (Table 1).

Table 1. Evaluation index system and its meaning

Name	Meaning
X_1 Gross regional product	Total economic quantity and scale
X_2 Second industry output value	Industrialization level
X_3 Third industry output value	Modern service economy function
X_4 Total fixed assets investment	Construction and development potential
X_5 Total retail sales of social goods	Household consumption level and consumption potential
X_6 Number of buses operating	Transportation capacity and convenience of residents' travel
X_7 Number of students in colleges	Development scale of higher education
X_8 Number of hospitals	Scale of medical security system
X_9 Total investment in environmental pollution control	Living environment and sustainable development ability

3.2. Data processing

For the standardized data, the correlation coefficient matrix (Table 2) is calculated by SPSS statistical software. The matrix shows that there are overlaps and overlaps in the urban function information reflected by the index. SPSS analysis shows that the index can better reflect the development of urban social foundation and is suiTable for principal component analysis. The standardized processing formula is as follows:

$$X_{ij}^{*} = \frac{(X_{ij} - X_{ij\min})}{X_{ij\max} - X_{ij\min}} \quad (1)$$

Where: X_{ij}^{*} is the normalized value; X_{ij} is the original value of the jth index of the i city; X_{ijmax}, X_{ijmin} is its maximum and minimum.

Table 2. Correlation coefficient matrix

Correlation coefficient	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9
X_1	1.000	0.973	0.961	0.896	0.975	0.878	0.885	0.283	-0.135
X_2	0.973	1.000	0.900	0.852	0.910	0.809	0.813	0.314	-0.084
X_3	0.961	0.900	1.000	0.869	0.967	0.877	0.859	0.284	-0.154
X_4	0.896	0.852	0.869	1.000	0.850	0.719	0.708	0.204	-0.217
X_5	0.975	0.910	0.967	0.850	1.000	0.912	0.860	0.315	-0.158
X_6	0.878	0.809	0.877	0.719	0.911	0.102	0.901	0.058	-0.216
X_7	0.882	0.833	0.849	0.718	0.870	0.932	1.002	-0.094	0.026
X_8	0.280	0.312	0.282	0.214	0.313	0.067	-0.095	1.004	-0.185
X_9	-0.137	-0.086	-0.154	-0.214	-0.151	-0.213	0.024	-0.178	1.002

Using SPSS software to calculate eigenvalues and cumulative contribution rate of correlation coefficient matrix. The results are shown in Table 3.

Table 3. Factors calculation results and data

Component	Initial eigenvalue			Extract the sum of squared loads		
	Eigenvalues	Contribution rate of variance /%	Accumulated variance contribution /%	Eigenvalues	Contribution rate of variance /%	Accumulated variance contribution /%
1	1.534	10.857	76.42	1.530	10.854	76.420
2	1.307	9.345	85.749	1.308	9.347	85.776
3	1.189	8.475	94.258	1.186	8.479	94.245
4	0.054	0.423	98.846			
5	0.027	0.203	99.807			
6	0.013	0.084	99.893			
7	0.007	0.062	99.957			
8	0.004	0.037	99.985			
9	0.003	0.004	100.000			

Based on the sample data, the principal component load matrix is obtained by SPSS statistical

software analysis(Table 4).

Table 4. Principal component matrix

Principal component	T_1	T_2	T_3	T_4
X_1	0.991	0.017	0.062	-0.053
X_2	0.948	0.042	0.043	-0.034
X_3	0.967	0.051	0.045	-0.057
X_4	0.873	0.034	0.136	0.286
X_5	0.992	0.036	0.004	-0.432
X_6	0.917	-0.178	0.124	0.021
X_7	0.876	-0.085	0.385	0.201
X_8	0.315	0.357	-0.847	0.207
X_9	-0.175	0.694	0.478	-0.093

3.3. Results analysis

As it can be seen from Table 3 and Table 4, the first principal component variance contribution rate is 65. 574% is the largest, and the load on $X_1 \sim X_9$ is larger than 80%, especially in the $X_2 \sim X_5$, $X_9 \sim X_{10}$ load of more than 90%, indicating the overall function of the city in the central city. In good condition, the performance is particularly prominent in the areas of economy, transportation, society and culture.

There are obvious differences between the frontier and the central cities, and the regional development is not balanced. Because of the agglomeration advantages of policy, location, science and technology, and manpower, the cities in the central region form a very strong core area of growth, and the frontier areas are at a disadvantage. The Matthew effect between the inner regions and the large regions is obvious, and the situation of multi-center competition and separatist development is obvious. The ecological cost of regional development is relatively high.

The border areas and central cities still have large gaps in economic level, economic structure, development model, resources and factor endowments, science and technology and talents, location, infrastructure, etc., which will become an obstacle factor affecting the subsequent development, and the development pattern of multi-center separatism Limiting the improvement of the comprehensive strength of the border areas, the urban agglomeration and the insufficient use of radiation functions will also be obstacle factors, integrating advantages, interaction and clustering, and co-generation into the ineviTable path of development.

4. Suggestions on the development of social foundation in border areas

4.1. Cultivate the ability of independent innovation and take the road of cooperation and competition

Innovation is an activity that breaks through the critical point and is the driving force behind the development of the border region. Talents and technology are the driving force behind innovation. Through the construction of transportation hubs and networks, the multi-directional interaction between economic flows and central cities can be promoted, and the integration of advantages can be realized. The exchange and interaction of talent cultivation, technology development and research and development, foster and enhance the overall innovation capability, and create a new pattern of innovative economic development and innovative urban development. At the same time, there must be competition when there are differences. Competition is the ineviTable development of the region. Cooperation is the new trend of competition. Taking the road of cooperation and competition is conducive to fostering strengths and avoiding weaknesses, giving full play to individual advantages, fostering overall advantages and overcoming multi-center Balkan vicious competition. . Promote cooperative development through research and development cooperation, education cooperation, industrial cooperation, talent exchange and interaction, foster innovation capabilities, and explore new patterns of innovation and development.

4.2. Public policy supports transition and coordinates sustainable development

Policy vacancies, offside and misplacement are restrictive factors that restrict the rapid development of the central region. From the strategic perspective of the overall process of China's modernization, we re-examine the development pattern of the central region, use information flow as a medium to strengthen inter-governmental cooperation and exchanges, and build intergovernmental interaction. The mechanism builds a policy platform of cooperation and mutual benefit from the perspective of the duality of the central region as a whole, the duality of resources and factor advantages, and the duality of industrial advantages. Focus on the coordinated development of the central region from the perspective of public management and public policy, such as the construction of public management platforms, the construction of public service networks, public assessment mechanisms, resource and environmental benefit evaluation mechanisms, regional linkage mechanisms, etc.The introduction of a total policy provides policy support for the coordinated development of the central region, and provides a good platform for cooperation and coordination, reducing policy costs, improving policy performance, building a multi-center interactive development pattern, and taking resources in accordance with the requirements of circular economy and intensive economic development. A new type of modern industry with economical, output-efficient, and high input-output, reducing the negative externalities of economic development,Improve the living environment and economic development environment, and take the road of environmentally friendly sustainable development.

5. Conclusion

The special contradiction determines the special essence of things and constitutes the internal basis of a thing that is different from its things. The difference in the social foundation development between the border regions and the central region cities indicates that the frontier regions must not lock themselves in the “follow-up” development track, but must take a different approach and choose a new development strategy. Starting from the starting point and foundation of reality, we will seek the path of the rise of the frontier with a new spirit and a pragmatic attitude. The border areas are vast and the inter-regional differences are large. Exploring the road to the rise of the border areas is different from that of the central area. Therefore, it is unrealistic to choose a specific development model that is generally applicable in the border areas. It is necessary to explore a reasonable development model according to their respective inter-regional characteristics.

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