



Industrial Coordinated Development from the Perspective of Regional Economic Integration: A Case Study of the Beijing-Tianjin-Hebei Region

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Abstract. Regional economic integration refers to the interdependence and integration of economic activities of two or more countries to a certain extent, forming a relatively independent economic region. This integration encompasses various aspects, with industrial synergy being a pivotal component. The coordinated development of industries will accelerate the process of integration and promote regional economic development. This paper chooses the Beijing-Tianjin-Hebei region as the object of research and adopts relevant analysis methods of industrial economics to analyze the coordinated development of industries in the process of Beijing-Tianjin-Hebei integration. Building upon existing theories, formulas, and data, this paper combines industrial economics and regional economics knowledge with practical cases, enhancing the practicality of the theory. The research results reveal several issues in the Beijing-Tianjin-Hebei industrial synergy, including significant development gaps between and within regions, high industrial homogeneity, and low added value and technological level, indicating a large room for further development.

Keywords: regional economic integration, coordinated development of Beijing-Tianjin-Hebei industry, industrial synergy, industrial layout, industrial structure

1 INTRODUCTION

For the past few years, the coordinated development of the Beijing-Tianjin-Hebei region has been a key strategic approach of the Party Central Committee with Comrade Xi Jinping as its core. The Beijing-Tianjin-Hebei integration is a concept of the capital economic circle, which includes Beijing, Tianjin, and Hebei Province and involves 11 prefecture-level cities, with a total population of approximately 90 million people. In April 2017, the Central Committee of the Communist Party of China and the State Council decided to establish Xiong'an New Area in Hebei Province, which involves Xiongxian County, Rongcheng County, Anxin County, and some surrounding areas under the jurisdiction of Baoding City.

At present, China has formed a national development pattern of multi-level linkage in the Yangtze River Delta, Beijing-Tianjin-Hebei Region, Central Urban Agglomeration, Western Urban Agglomeration, and the Guangdong-Hong Kong-Macao Greater Bay Area. As an important economic growth pole in northern China, the Beijing-Tianjin-Hebei region has attracted much attention due to its natural geographical position and strategic position. The coordinated development of industries is a key factor in promoting regional economic integration, and it is also the first area that needs to be broken through in the coordinated development strategy of the Beijing-Tianjin-Hebei region. Realizing coordinated industrial development in the Beijing-Tianjin-Hebei region is beneficial for optimizing resource allocation, industrial structure, and pulling high - quality development of the northern economy. However, in the context of Beijing-Tianjin-Hebei integration, significant gaps remain in the industrial development of these three regions, and there are multiple obstacles and problems in industrial coordination, transformation, and upgrading. Based on the theoretical and practical foundations of industrial economics, this paper analyzes the existing problems in the coordinated development of Beijing-Tianjin-Hebei industry and puts forward future development directions and suggestions in view of the existing circumstances and effect of industrial layout in the Beijing-Tianjin-Hebei region.[9]

2 THEORETICAL BASIS

This article conducts research on existing theoretical foundations, specifically involving industrial layout theory, industrial correlation theory, and industrial structure optimization. Among them, the theory of industrial layout mainly considers its influencing factors and then analyzes the choice of leading industries in the Beijing-Tianjin-Hebei region. The theory of industrial correlation mainly analyzes the impact evaluation of industries. The optimization of industrial structure mainly involves the adjustment of regional industrial structure. Due to different comparative advantages and specialized departments in different regions, there are differences in industrial structure. Location entropy is an important indicator reflecting the degree of specialization of regional industrial structure.[1]

3 FEASIBILITY OF COORDINATED INDUSTRIAL DEVELOPMENT IN THE BEIJING-TIANJIN-HEBEI REGION

The coordinated development of industries in the Beijing-Tianjin-Hebei region is bolstered by favorable policy support and geographical advantages. Both the country and local governments attach great importance to the integrated development of the region and have issued a series of policies and plans to promote integrated development and industrial synergy, creating a growth pole in the north. Notably, the "Implementation Plan for Collaborative Development of Industries in the Beijing-Tianjin-Hebei Region" issued in 2023 provides a clear roadmap for the coordinated development of industries

in the area. The plan clarifies that by 2025, the division of labor in the Beijing-Tianjin-Hebei industry will be more clearly positioned, the innovation chain of the industrial chain will be deeply integrated, and collaborative innovation will achieve new breakthroughs, which is very important to the coordinated development of the Beijing-Tianjin-Hebei industry. [5] As an early established economic integration development region, the Beijing-Tianjin-Hebei region has a relatively complete economic structure, with certain industrial support and development potential. It has abundant resources, talents, market and infrastructure advantages, slightly different resource endowments, and strong industrial complementarity. For the past few years, the three places have enhanced their connectivity in terms of transportation, improved intercity highways, railways, and aviation hubs, and improved social security such as healthcare and education. The Beijing-Tianjin-Hebei region gives full play to the influential role of Beijing and promotes coordinated regional development through rational planning and scientific layout.[7]

4 ANALYSIS OF THE CURRENT SITUATION OF INDUSTRIAL LAYOUT

4.1 Analysis of Economic Development Status

The following tables and figures are made based on the collected data by the author.

Table 1. GDP and domestic proportion of the Beijing-Tianjin-Hebei urban agglomeration from 2014 to 2022

Index	GDP	National proportion
Unit	100 million yuan	
2014	66478.91	10.40%
2015	69358.89	10.20%
2016	75624.97	10.00%
2017	80580.45	9.90%
2018	85139.89	9.45%
2019	84580.08	8.60%
2020	86393.17	8.50%
2021	96355.87	8.40%
2022	100292.7	8.26%

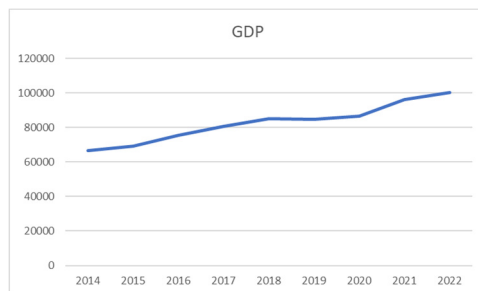


Fig. 1. GDP of the Beijing-Tianjin-Hebei region from 2014 to 2022

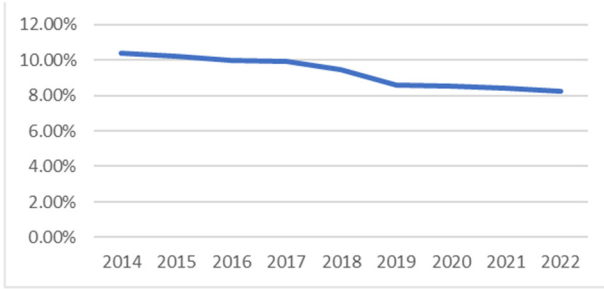


Fig. 2. Domestic GDP share of the Beijing-Tianjin-Hebei region from 2014 to 2022

As shown in the Table 1, Fig. 1. and Fig. 2., in vertical comparison, the gross domestic product (GDP) of the Beijing-Tianjin-Hebei region continues to grow and maintain a development momentum, but its proportion in the country continues to decline. There is still a considerable gap between the Beijing-Tianjin-Hebei region and other integrated regions, with GDP accounting for a small portion of the national GDP.

Table 2. The proportions of GDP contributed by Beijing, Tianjin, and Hebei to the overall GDP of the Beijing-Tianjin-Hebei region

Index	GDP	the proportion of GDP to the Beijing-Tianjin-Hebei regional GDP	GDP	the proportion of GDP to the Beijing-Tianjin-Hebei regional GDP	GDP	the proportion of GDP to the Beijing-Tianjin-Hebei regional GDP
Area	Tianjin		Hebei		Beijing	
Unit	100 million yuan		100 million yuan		100 million yuan	
2014	10640.62	16.01%	25208.9	37.92%	22926	34.49%
2015	10879.51	15.69%	26398.35	38.06%	24779.1	35.73%
2016	11477.2	15.18%	28474.1	37.65%	27041.2	35.76%
2017	12450.56	15.45%	30640.76	38.03%	29883	37.08%
2018	13362.92	15.70%	32494.61	38.17%	33105.97	38.88%
2019	14055.46	16.62%	34978.55	41.36%	35445.13	41.91%
2020	14007.99	16.21%	36013.84	41.69%	35943.25	41.60%
2021	15685.05	16.28%	40397.1	41.92%	41045.6	42.60%
2022	16311.34	16.26%	42370.4	42.25%	41610.9	41.49%

Table 3. Per capita GDP of Beijing, Tianjin, and Hebei

Per Capita GDP (10,000 yuan/person)	Beijing	Tianjin	Hebei
2014	10.67	7.5	3.45
2015	11.37	7.59	3.6
2016	12.34	7.96	3.87
2017	13.62	8.73	4.15
2018	15.1	9.57	4.38

2019	16.18	10.16	4.7
2020	16.42	10.11	4.83
2021	18.75	11.37	5.42
2022	19.03	11.92	5.7

As can be seen from the above two tables, the overall GDP and per capita GDP of the Beijing-Tianjin-Hebei region are showing an increasing trend. However, Tianjin's share of the overall GDP is comparatively smaller than that of Beijing and Hebei, and the gap is relatively large. In terms of per capita GDP, the overall development of per capita GDP in the three regions is uneven. Beijing has the highest per capita GDP, followed by Tianjin and Hebei. Although the GDP of Hebei is relatively large, per capita GDP is at the lowest level in the three regions. Analysis of three major industries in the Beijing-Tianjin-Hebei region is shown as follows:

Table 4. Added value of three major industries in the Beijing-Tianjin-Hebei region from 2014 to 2022

Index	Value-added of primary industry	Value-added of secondary industry	Value-added of tertiary industry
frequency	Year	Year	Year
Unit	100 million yuan	100 million yuan	100 million yuan
2014	3806.35	27289.5	35383.06
2015	3788.48	26633.73	38936.68
2016	3842.82	27772.72	44009.43
2017	3419.36	28766.56	48394.53
2018	3629.4	29297.52	52212.97
2019	3817.36	24281.5	56481.22
2020	4197.93	24117.65	58077.58
2021	4367.09	29487.09	62501.69
2022	4795	29694.1	65803.6

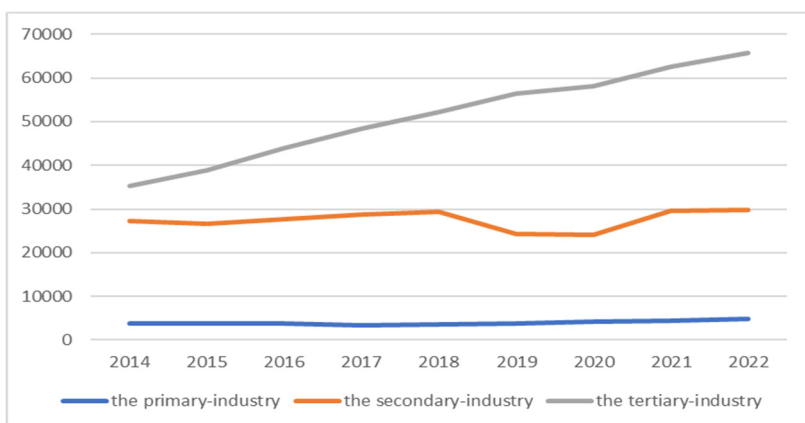


Fig. 3. Trends in the Changes of Three Major Industries in the Beijing-Tianjin-Hebei region from 2014 to 2022

Table 5. The proportion of added value of the three major industries to GDP in Beijing from 2014 to 2022

Index	The proportion of added value of the first industry to GDP	The proportion of added value of the second industry to GDP	The proportion of added value of the third industry to GDP
Area	Beijing	Beijing	Beijing
Frequency	Year	Year	Year
Unit	%	%	%
2014	0.7	19.3	80
2015	0.61	17.8	81.6
2016	0.51	17.3	82.3
2017	0.43	16.9	82.7
2018	0.39	16.5	83.1
2019	0.3	16.2	83.7
2020	0.3	15.8	83.7
2021	0.28	18.05	81.67
2022	0.3	15.9	83.9

Table 6. The proportion of added value of the three major industries to GDP in Tianjin from 2014 to 2022

Index	The proportion of added value of the primary industry to GDP	The proportion of added value of the secondary industry to GDP	The proportion of added value of the tertiary industry to GDP
Area	Tianjin	Tianjin	Tianjin
Frequency	Year	Year	Year
Unit	%	%	%
2014	1.5	43.4	55.1
2015	1.5	41.3	57.2
2016	1.5	38	60.5
2017	1.3	36.7	62
2018	1.3	36.2	62.5
2019	1.3	35.2	63.5
2020	1.5	35.1	63.4
2021	1.7	36.2	62.1
2022	1.7	37	61.3

Table 7. The proportion of added value of the three major industries to GDP in Hebei Province from 2014 to 2022

Index	The proportion of added value of the primary industry to GDP	The proportion of added value of the secondary industry to GDP	The proportion of added value of the tertiary industry to GDP
Area	Hebei	Hebei	Hebei
Frequency	Year	Year	Year
Unit	%	%	%

2014	12.6	45.5	41.9
2015	11.7	43.7	44.6
2016	10.8	43.3	45.9
2017	10.2	41.7	48.1
2018	10.27	39.71	50.01
2019	10.1	38.3	51.6
2020	10.72	38.2	51
2021	9.98	40.51	49.51
2022	10.4	40.2	49.4

As shown in the table 2 to table 7, Fig. 2.and Fig. 3., analysis of the added value across the three major industries reveals that all three major industries in the Beijing-Tianjin-Hebei region have gained development. However, the development focus is on the tertiary industry, with the secondary industry following behind and the primary industry coming in last. There is a large gap between the three industries, and the overall development is showing a "Tertiary-Secondary-Primary" trend, where the tertiary industry experiences the most rapid growth.

Specifically, the proportion of the added value of the tertiary industry in Beijing's GDP is much higher than that of the primary and secondary industries, with a proportion exceeding 60%, and it is on the rise, showing an absolute trend of development dominated by the tertiary industry. Although the proportion of added value of the secondary industry to GDP is decreasing, the magnitude of change is small and it still occupies a relatively important position in economic development, while the proportion of added value of the primary industry to GDP is the smallest, both below 1%. Hebei is dominated by the secondary industry, whose contribution is higher than that of the tertiary industry. Meanwhile, the proportion of the added value of the primary industry to GDP is higher than that of Beijing and Tianjin, but has been declining year by year, showing a development trend of the secondary industry as the main sector. The proportion of the added value of the primary industry in the GDP of Tianjin is also small. The tertiary industry shows a good development trend, but it does not occupy an absolute position. The secondary industry has also gained development.

4.2 Analysis of Industry Specialization

Location entropy, also known as the concentration index of production regions, reflects the degree of specialization in regional industrial structure. It can be calculated from several aspects such as output value, output, labor force, fixed asset value, and product output. This article mainly selects output location entropy as the measurement index.

The calculation formula for location entropy is shown as follows:

$$LQ_{ij}=(q_{ij}/q_j)/(q_i/q) \quad (1)$$

where LQ_{ij} is the location entropy of the i industry in region j across the country; q_{ij} is the relevant index (such as output value, employment, etc.) of the i industry in region j ; q_j is the relevant indicator for all industries in region j ; q_i is the relevant index of the i industry in the whole country; q is the relevant index of all industries in the country.

The higher the location entropy is, the higher the level of regional industrial agglomeration is. Generally speaking, when $LQ_{ij} > 1$, it's believed that the regional economy of region j has advantages in the whole country; when $LQ_{ij} < 1$, it's believed that the regional economy of region j is at a disadvantage nationwide.

Based on the calculation of data from 2014 to 2018, the industries with location entropy > 1 and close to 1 in the Beijing-Tianjin-Hebei region have been sorted out.

Table 8. Location entropy of Beijing from 2014 to 2018

Beijing	location entropy
Metal products, machinery and equipment repair industry	4.91
Automobile manufacturing industry	3.70
Instrument and meter manufacturing industry	2.31
pharmaceutical manufacturing industry	2.21
Computer, communication, and other electronic equipment manufacturing industry	1.93
Food manufacturing industry	1.64
Manufacturing industries of railway, ship, aerospace, and other transportation equipment	1.45
Other manufacturing industries	1.45
Special equipment manufacturing industry	1.28
Printing and recording media reproduction industry	1.27
Petroleum, coal, and other fuel processing industries	1.16
Liquor, beverage, and refined tea manufacturing industry	0.91

Table 9. Location entropy of Tianjin from 2014 to 2018

Tianjin	location entropy
Ferrous metal smelting and rolling industry	2.54
Manufacturing industries of railway, ship, aerospace, and other transportation equipment	2.29
Comprehensive utilization of the abandoned resources industry	1.89
Food manufacturing industry	1.87
Metal products industry	1.45
Other manufacturing industries	1.40
Petroleum, coal, and other fuel processing industries	1.38
Automobile manufacturing industry	1.32
Computer, communication, and other electronic equipment manufacturing industry	1.10
Special equipment manufacturing industry	1.04
Pharmaceutical manufacturing industry	1.03
General equipment manufacturing industry	1.01
Metal products, machinery and equipment repair industry	0.99
Manufacturing industry of cultural and educational, industrial and artistic, and sports and entertainment products	0.97

Table 10. Location entropy of Hebei Province from 2014 to 2018

Hebei	location entropy
Ferrous metal smelting and rolling industry	4.29
Leather, fur, feathers and their products, and footwear industry	2.21
Metal products industry	1.86
Petroleum, coal, and other fuel processing industries	1.24
Food manufacturing industry	1.17
Printing and Recording Media Reproduction Industry	0.99
Textile industry	0.98
Special equipment manufacturing industry	0.93
pharmaceutical manufacturing industry	0.92
Rubber and plastic products	0.92

Shown in the table 8 to table 10, from the perspective of output location entropy, there are 11 industries in Beijing that are higher than the national average level (with location entropy greater than 1), 12 in Tianjin, and 5 in Hebei. Beijing possesses distinct advantages in metal products, machinery and equipment repair industry, automobile manufacturing industry, instrument and meter manufacturing industry, and pharmaceutical manufacturing industry. Tianjin has obvious advantages in the ferrous metal smelting and rolling processing industry, and the manufacturing industry of railway, ship, aerospace, and other transportation equipment. Hebei holds great advantages in the ferrous metal smelting and rolling processing industry, as well as leather, fur, feathers and their products, and the footwear industry. Beijing has a higher degree of industrial specialization, followed by Tianjin and Hebei. In addition, Beijing is dominated by high-tech industries, precision instrument manufacturing, and high-end service industries, showing a development trend of knowledge-intensive and technology-intensive industries. Tianjin is dominated by the processing industry, producer service, and manufacturing industry, showing a process-oriented development trend. Hebei focuses on the traditional manufacturing industry and resource extraction industry, showing a development trend of resource-intensive industries.

4.3 Analysis of Industrial Convergence Degree

The similarity coefficient formula recommended by the United Nations Industrial Development Organization is displayed as follows:

$$S_{ij} = \sum_{k=1}^n (X_{ik}X_{jk}) / \sqrt{\sum_{k=1}^n X_{ik}^2 \sum_{k=1}^n X_{jk}^2} \quad (2)$$

where S_{ij} is the structural similarity coefficient of regions i and j , and i and j are the two compared regions; X_{ik} is the proportion of k industry to the whole industry in region i ; X_{jk} is the proportion of k industry to the whole industry in region j . The larger the S_{ij} coefficient is, the greater the degree of industrial isomorphism between the two regions is. In general, 0.85 is taken as the critical value to judge the similarity of industrial structure between the two regions.

A six-year period (from 2014 to 2019) was selected according to the calculation of the industrial isomorphism coefficient of the Beijing-Tianjin-Hebei region from 2010 to 2019 by Wang et al in 2021, and the following results are obtained:[6]

Table 11. Industrial similarity coefficients of Beijing-Tianjin, Beijing-Hebei, and Tianjin-Hebei from 2014 to 2019

Year	Beijing and Tianjin	Beijing and Hebei	Tianjin and Hebei
2014	0.8682	0.7700	0.9747
2015	0.8828	0.7937	0.9763
2016	0.8971	0.8064	0.9760
2017	0.9279	0.8011	0.9613
2018	0.9294	0.8490	0.9748
2019	0.9506	0.8883	0.9811

According to table 11, the data shows that the similarity coefficients of industries in Beijing-Tianjin, Tianjin-Hebei, and Beijing-Hebei are all showing an upward trend. Notably, the similarity of industrial structure between Tianjin and Hebei is the highest, consistently above 0.96. Beijing-Tianjin region comes second and has been increasing year by year. Although the Beijing-Hebei region is the lowest, it gradually rises above 0.85.

5 EXISTING PROBLEMS [4]

5.1 Large Development Gap Between Regions

According to the proportion of GDP of the Beijing-Tianjin-Hebei region to the national GDP from 2014 to 2022, the competitiveness of regional integration of the Beijing-Tianjin-Hebei region is not as good as that of other domestic integrated regions such as the Yangtze River Delta. The proportion of economic output to that of the whole country is not high, and it has been declining year by year, failing to achieve the expected goal of becoming a "world-class urban agglomeration". Therefore, improving the overall competitiveness of the region and the efficiency and quality of industrial development is an urgent issue that needs to be addressed.

5.2 Large Development Gap within the Region

According to the analysis of the three industries and location entropy in Beijing, Tianjin, and Hebei, the industrial structure of the three regions is unbalanced and the degree of correlation is low. Beijing has a typical "Tertiary-Secondary-Primary" industrial structure, with its tertiary industry mainly consisting of service and technology-intensive industries. However, there are still typical secondary industries such as petroleum, coal, and other fuel processing industries, and manufacturing industries in the local area, reflecting that non-capital functions have not been well dispersed. Hebei and Tianjin indicate a "Secondary-Tertiary-Primary" industrial structure, but they have certain

differences in the secondary industry. The technological content of the secondary industry in Tianjin is higher than that in Hebei, which is characterized by heavy industrialization and high technology. Hebei mainly develops traditional manufacturing and resource-intensive, labor-intensive industries, such as ferrous metal smelting, leather, fur, feathers and their products, and the footwear industry, which has low technical content and great environmental pollution. The gap between the industrial development of the three places is large, which is easy to cause polarization.[3]

5.3 Severe Industrial Homogenization

According to the similarity coefficient of industries and the location entropy index, the special equipment manufacturing, pharmaceutical manufacturing, food manufacturing, petroleum, coal, and other fuel processing industries in Beijing, Tianjin, and Hebei all have high location entropy indices. Both Beijing and Tianjin have railway, ship, aerospace, and other transportation equipment manufacturing, automobile manufacturing, metal products, machinery and equipment repair industries. Both Tianjin and Hebei have ferrous metal smelting and rolling processing industries, and their location entropy index ranks first. The phenomenon of industrial isomorphism causes resource waste, market overlap, instability, industrial dispersion, failure to form economies of scale, low regional industrial competitiveness, low correlation, and low level, and weakens the diffusion degree of Beijing's technology and the degree of non-capital functions, which has not reached its expected goals.

5.4 Low Added Value of the Industry and Low Technical Level

Despite Beijing's relatively advanced level of technology, there is still a certain gap when compared to other world-class cities, and the heavy chemical industry remains a significant pillar of its economy. Although Tianjin vigorously develops high-tech industries and improves the technological level of the secondary industry, its traditional industries still occupy a certain proportion. The industrial structure problem in Hebei Province is more serious, with high energy consumption and high pollution industries as the main ones, causing serious environmental damage. Other manufacturing industries have outdated technical equipment and production processes. At the same time, the technical level of agriculture is low, which is still dominated by traditional agriculture. Production equipment is aging, and labor productivity is low.[8]

6 CONCLUSION

This paper analyzes the economic development status, the degree of industrial specialization, and the degree of convergence of the Beijing-Tianjin-Hebei region. It is found that there is a significant development gap between regions and within the region, with high industrial homogeneity, low added value, and low technological level. Moreover, this paper combines the theory with data, integrating the existing theories and data and comparing the research objects through methods such as tabulation and graphing.

In view of the problems in the process of industrial development in the Beijing-Tianjin-Hebei region, a series of suggestions for future development was proposed: (1) Adhere to a market-oriented and government-guided development pattern [4]. The market determines the allocation of resources. In the process of coordinated development of industries in the Beijing Tianjin Hebei region, it is necessary to be market-oriented, adapt to market demand, and integrate into the strategic pattern of international and domestic dual circulation under the background of globalization, so as to enhance global competitiveness. In the process of regional integration, the government should strengthen unified leadership, enhance top-level design, give play to the role of local governments, and achieve coordinated efforts between the central and local governments. (2) Optimize regional industrial layout, strengthen industrial chain collaboration, and achieve complementary advantages. Beijing, Tianjin, and Hebei should clarify their respective advantageous and disadvantageous industries and functional positioning, optimize industrial layout through industrial transfer, and reduce industrial homogeneity. (3) Adhere to innovation-driven, green development, promote industrial transformation and upgrading, and enhance regional competitiveness. Innovative factors such as labor, capital, and technology within the region should be fully stimulated to create a highland for innovative development. At the same time, the greening of the industry should be realized, green production should be further promoted, and a resource-saving green economy should be developed. (4) Create a favorable social environment, promote population mobility, and strengthen talent cultivation. With the help of the government's overall planning role, the Beijing-Tianjin-Hebei region should establish a unified infrastructure management, improve the labor market and social security system, reduce the imbalance of regional development, and accelerate the inter-regional flow of human resources. A favorable environment for talent development should be created, achieving talent aggregation effects should be achieved, so as to help industries improve quality and efficiency.[2]

There are also certain shortcomings in this article. In terms of industrial structure analysis, the analysis degree of data in recent years is insufficient. In the follow-up research, the collection and analysis of relatively recent data can be strengthened to improve the future feasibility of the research.

REFERENCES

1. Su D. *Industrial Economics* [M]. Beijing: Higher Education Press, 2015.
2. Zhang G, Sun C, Liu B. The process, effect and promotion strategy of the coordinated development of Beijing, Tianjin and Hebei [J]. *Reform*. 2023; 5: 90-104.
3. Ye T. The problems and countermeasures in the high-quality coordinated development of industries in the Beijing Tianjin Hebei region [J]. *Social Sciences of Beijing*. 2023; 6: 49-57.
4. Yang L, Song X, Zuo X. Research on Industrial Transformation and Upgrading under the Background of Collaborative Development in Beijing Tianjin Hebei [J]. *Journal of Commercial Economics*. 2020; 11: 186-189.
5. Implementation plan for coordinated industrial development in the Beijing-Tianjin-Hebei region. 2023;5

6. Wang G, Liu X, Zhang X. Evaluation of industrial isomorphism and analysis of collaborative development of manufacturing industry in Beijing-Tianjin-Hebei [J]. Journal of Hebei University of Science and Technology. 2021.1
7. Shen H. Current situation and countermeasures of Beijing-Tianjin-Hebei regional economic integration. [J] Chinese market. 2018.
8. Dr Abdul Saheer P, et al. Coordinated Development of Beijing-Tianjin-Hebei Region Based on the Regional Governance Strategy for Greater London. Indian Journal of Public Health Research & Development. 2018.5
9. Pasquale Commendatore, et al. Regional integration, international liberalisation and the dynamics of industrial agglomeration. Journal of Economic Dynamics and Control. 2014.11

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