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Study on the Coordination Relationship between New-Type Urbanization and Industrial Structure in South Anhui

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Abstract

Industrial structure adjustment is the basis for the development of new-type urbanization, and new-type urbanization is an important driver of industrial structure optimization. There is an interaction and mutual promotion relationship between the two. Based on this, this paper constructs a new index system for the coupling and coordination of new-type urbanization and industrial structure, and uses the entropy weight method and the coupling and coordination model to study the coupling and coordination of new-type urbanization and industrial structure in 6 prefecture-level cities in southern Anhui from 2010 to 2018. The research results show that the level of new-type urbanization development in each city in southern Anhui is superior to the level of industrial structure development, and there is a regional difference in the coupling and coordination of new-type urbanization and industrial structure. The degree of coupling is higher, but the degree of coordination is lower, most of them show a state of improvement year by year.

Keywords

New-Type Urbanization; Industrial Structure; Coupling and Coordination.

1. INTRODUCTION

China's urbanization started later than developed countries and has a lower level, but its development speed is faster. Since the reform and opening up, under the blessing of industrialization, informationization and agriculturalization, China's urbanization rate has increased from 17.9% to 60.60% in 2019, which has greatly accelerated the development of the national economy. The new-type urbanization is urbanization with "people" as its core. Compared with the traditional urbanization construction that pursues quantitative scale, it pays more attention to the improvement of internal quality.The new-type urbanization emphasizes the important transformation from rural to urban in terms of industrial support. The industrial structure of the region must conform to the construction of new-type urbanization. The region can promote rural development through industrial economy and industrial structure transformation, realize the integration of production and city, and gradually narrow the gap between urban and rural areas, thereby promoting the transformation and upgrading of the overall economy in the region. This requires a new-type urbanization and industrial structure to form a coupling and coordination relationship that promotes and interacts with each other. Only when the two are in coordinated development can a regional balance be formed and social and economic development be promoted.In 2014, the National Development and Reform Commission issued a notice to classify Anhui Province as one of the first batch of pilot areas for new-type urbanization in the country. Southern Anhui, as an important economic center in Anhui Province, occupies an important position in Anhui Province.Therefore, we study the coupling and coordination of new urbanization and industrial structure in six cities in southern

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Anhui, and clarify the level of new urbanization construction in the region and the degree of coordination with the industrial structure, which can promote new urbanization in the region to a certain extent. Construction and industrial restructuring.

How to coordinate the relationship between new-type urbanizationandindustrial structure and achieve sustainable development through interaction has become an important issue that many scholars pay attention to. Looking at the research of scholars, they mainly study from the two aspects of new-type urbanization and industrial structure and coupling and coordinated development mechanism.In terms of related content, Wu Qiong and Zhong Weizhou (2018)introduced the industrial structure to the new-type urbanization development theory and found that the industrial structure has a positive role in promoting new-type urbanization [1]; Zhang Ying and Chen Wei (2019) analyzed the direct and indirect effects of industrial structure upgrades on urbanization on the basis of clarifying the problems existing in new-type urbanization and industrial structures. They believed that under economic agglomeration, the upgrading of industrial structures could promote Development of urbanization [2];Xu Teng and Jiang Jiyu (2020) used a panel model to study the impact of new-type urbanization on the industrial structure in Anhui Province, and pointed out that there are regional differences in the optimization of the industrial structure in the new-type urbanization in Anhui Province, and each region should formulate relevant measures according to local characteristics[3] .In terms of the coupling and coordinated development mechanism of the two, Wang Yujie (2017) compared the new-type urbanization and industrial structure of Henan and Jiangxi provinces and countries, and proposed that Henan Province should continue to develop modern agriculture and formulate reasonable industrial policies [4];Zheng Liwen and Huang Junyu (2019) analyzed the coupling and coordination of new-type urbanization and industrial structure in Northeast China, and found that there are problems such as the outward movement of talents and low land utilization in Northeast China.Andthey suggested that the overall development level should be improved through measures such as mitigating brain drain and improving urban public infrastructure construction[5];Wei Min and Hu Zhenhua (2019) studied the coordination of new-type urbanization and industrial structure adjustment in Hunan Province based on system theory and synergy theory, and proposed to accelerate the construction of a modern industrial system in urban agglomerations, and promote the industrial structure transformation and upgrading and layout adjustment [6].

Through the analysis of related research by scholars, we can find that there is indeed a correlation between new-type urbanization andindustrial structure, but there are regional differences in the extent of its effect.In addition, scholars have not conducted in-depth research on the coordinated development of new-type urbanization and industrial structure integration. Most studies have only studied the evolution of regional coupling and coordinated development in the time dimension, without making spatial comparisons.Therefore, based on the research of scholars, we studies the state of the integration and coordination of new-type urbanization and industrial structure from the two dimensions of time and space, and proposes policy recommendations for the integration and coordinated development of each region based on regional differences.

2. THEORETICAL ANALYSIS OF THE COUPLING AND COORDINATION OF NEW-TYPE URBANIZATION AND INDUSTRIAL STRUCTURE

2.1. Impact of New-Type Urbanization on Industrial Structure

Urbanization is an important driving force for accelerating the transformation and upgrading of industrial structure. As mentioned by Lan Qingxin and Chen Chaofan (2013), the improvement of the level of industrial development is affected by new-type urbanization , and new-type urbanization can promote the industrial structure to a higher and more resonable

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degree development in a rational direction [7].New-type urbanization can attract the influx of rural population, which not only provides a large amount of labor for the industry, but also promotes the gathering of high-quality talents and scientific and technological elements. In addition, new-type urbanization has strengthened the links between science, education, culture, and health, which is conducive to acceleratingthespeed of knowledge disseminationandexpanding the area of knowledge dissemination.Both situations can provide innovation vitality for the upgrading and optimization of the industrial structure, thereby driving the upgrading of traditional industries and the development of emerging industries.However, many scholars have found that there are regional differences in the degree of promotion and role of new-type urbanization in the industrial structure. And the degree of their influence is not fixed, but is affected by the level of new-type urbanization construction and industrial development in the region.

2.2. Impact of Industrial Structure on New-Type Urbanization

Economic development is the basis of urbanization, and the industrial structure plays a significant supporting role in the development of new-type urbanization. Wu Qiong (2018) proposed that rationalization and advanced industrial structure can promote the positive development of new-type urbanization .The upgrading of the industrial structure can enhance the ability of cities and towns to absorb more talents for the development of new-type urbanization .The upgrading of the industrial structure has provided more jobs, making it easier to attract rural populations to cities and towns, improving the urbanization rate and urban population density. Second, the advanced development of the industrial structure requires the input of more science and technology and innovative talents. By enhancing the industry's scientificand technological innovation capabilities, it promotes the transformation and upgrading of the region's economy, and then affects the development of new urbanization.

3. EMPIRICAL ANALYSIS OF THE COUPLING AND COORDINATION OF NEW-TYPE URBANIZATION AND INDUSTRIAL STRUCTURE

3.1. Construction of Evaluation System

There is a relatively complicated relationship between the new-type urbanization and the industrial structure. When constructing an evaluation system of coupling and coordination between the two, it is necessary to consider the comprehensiveness and systematicness of index selection to ensure that the results can reflect the coupling and coordination between new-type urbanization and industrial structure.When constructing the evaluation system, according to Qi Xiaoxu (2014)'s research on the new-type urbanization evaluation system, the author adopts the concept of sustainable development to increase the sustainable use of resources and related indicators of environmental quality improvement, which fully reflects the economy and society development and characteristics of the ecological environment [8].Combining Lu Dan and Ye Meng (2014) with the construction of Dalian's new urbanization evaluation system, we selected five categories of social progress index, economic development index, ecological environment support index, urban and rural quality of life index, and urban-rural coordination index as the criterion layer [9].At the same time, combining the research of many scholars on the coupling and coordination of new urbanization and industrial structure, we choose the output value structure index and employment structure index to reflect the level of industrial structure.

(1) Social progress index. Social progress represents the development of the region to a higher quality, which is related to the construction of new urbanization. The higher the degree, the higher the level of urban construction in the region, which can provide a good living environment for the development of residents. Therefore, it is measured from three aspects of

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population, education, and medical care. The social progress index includes the urbanization rate (X1), the urban population density (X2), the number of schools per 10,000 students (X3), the number of beds per 10,000 people (X4), and the number of health workers per 10,000 people (X5).

(2) Economic development index. Economic development affects the development of new-type urbanization. A high-quality level of economic development can bring a strong impetus to the development of new-type urbanization. In turn, the higher the level of new-type urbanization, the higher the economic development of the region. The level will be higher accordingly. The economic development index includes per capita GDP (X6), urban per capita consumption expenditure (X7), general public budget expenditure as a proportion of GDP (X8), R&D internal expenditure as a proportion of GDP (X9), and urban fixed asset investment (X10).

(3) Ecological environment support index. The ecological environment affects the green harmony of the region's ecology and meets the requirements of new-type urbanization for sustainable development. The optimization of the ecological environment can improve the happiness index of residents' lives, thereby promoting ecologically efficient cycle. The eco-environment index includes the proportion of days with air quality above Grade II in the whole year (X11), the green area of built-up areas (X12), and the per capita park green area (X13).

(4) Urban quality of life index. New-type urbanization is urbanization with people as the core, and aims to provide residents with better social welfare and living environment. The quality of urban life is a symbol of the living standards of the residents in the area, providing urban residents with a living guarantee, and reflecting the quality of the new-type urbanization construction in the area. The urban quality of life index includes the daily water consumption per capita (X14), the per capita housing construction area (X15), the urban per capita road area (X16), and the number of public buses per 10,000 people (X17).

(5) Urban-rural coordination index. The purpose of urban-rural coordination is to coordinate urban-rural relations, reduce the distance between urban and rural areas, and realize the transformation from rural to urban. The urban-rural integrated index can reflect the driving force of cities to the countryside and the gap between urban and rural areas. The urban-rural coordination index includes the per capita disposable income ratio of urban and rural residents (X18).

(6) Output value structure index. The output value structure refers to the proportion of the added value of the three major industries, which can judge the role played by various industries in the transformation and upgrading of the industrial structure. The greater the proportion of the added value of the output value, the greater the contribution of the industry to the adjustment of the industrial structure. The output value structure index includes the proportion of value added in the primary industry (X19), the proportion of value added in the secondary industry (X20), and the proportion of value added in the tertiary industry (X21).

(7) Employment structure index. The employment structure refers to the proportion of employees in various industries. The higher the proportion, the faster the industry develops, and it requires a large amount of labor to maintain its development.The employment structure index includes the proportion of employment in the primary industry (X22), the proportion of employment in the secondary industry (X23), and the proportion of employment in the primary industry (X24).

3.2. Research Objects, Data Sources and Processing

As the first batch of new-type urbanization pilot provinces,a lot of efforts have also been made here in southern Anhui. In order to understand the development of new-type urbanization in southern Anhui and its coupling and coordination with the local industrial structure,Therefore, in the selection of research objects, the author selected 6 prefecture-level cities in southern

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Anhui, which are Huangshan, Maanshan, Chizhou, Wuhu, Xuancheng and Tongling. According to the availability and completeness of the data, the data studied are mainly derived from direct data from statistical yearbooks and statistical bulletins of six cities from 2010 to 2018 and indirect data calculated.In view of the problems of dimension and measurement level in the process of selecting the new type of urbanization-industrial structure data, in order to avoid the influence of the directly obtained data on the accuracy of the results,We use range standardization to perform dimensionless processing on the data. Because the selected indicators are all positive indicators, there is no need to consider the treatment of negative indicators.

$$x_{ij}{}^{*} = \frac{x_{ij} - x_{jMIN}}{x_{jMAX} - x_{jMIN}}$$

Among, $x_{jMAX}$is the sample maximum, $x_{jMIN}$is the sample minimum.

3.3. Index Entropy Weight Method

In order to understand the importance of each indicator in the process of the coordinated and coordinated development of new-type urbanization and industrial structure, the weight of each indicator in the system is calculated using the entropy weight method, as follows:

(1)Calculate the proportion of each indicator. Calculate the proportion of the i-th index in the j-th yearp_{ij}:

$$p_{ij} = \frac{x_{ij}}{\sum_{j=1}^{n} x_{ij}}$$

(2) Calculate the entropy of each index. The entropy of the i-th indexis e_i:

$$e_i = -\frac{\ln p_{ij} \sum_{j=1}^{n} p_{ij}}{\ln n}$$

(3) Calculate the index weight. The weight of index i is w_i:

$$w_i = -\frac{1 - e_i}{\sum_{i=1}^{m}(1 - e_i)}$$

3.4. Coupling and Coordination Model

First, we calculate the comprehensive development level of the two subsystems.We assume that the comprehensive development levels of the two subsystems of new-type urbanization and industrial structure are U_1 and U_2 ,respectively, and calculate the comprehensive development levels of the two, as follows:

$$U_1 = \sum_{i=1}^{m} a_i x_i, (i = 1, \cdots, 17)$$

$$U_2 = \sum_{i=1}^{n} b_i x_i, (i = 18, \cdots, 23)$$

Among,$a_i$and$b_i$are the weights of the indicators in the two subsystems.

Next, we calculate the coupling degree model of the new-type urbanization and industrial structure, and study the coupling relationship between the two subsystems in order to clarify the mutual degree between the two. The specific calculation formula is:

$$C = \sqrt{\frac{U_1 \times U_2}{\left(\frac{U_1 + U_2}{2}\right)^2}}, C \in (0,1)$$

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The value of C is between 0 and 1. The closer C is to 1, the higher the degree of coupling between the two, the more stable the system, and the system can develop in a good direction; the closer C is to 0, the smaller the degree of coupling between the two subsystems.

Finally, we calculate the coordination model of new-type urbanization and industrial structure. Using only the degree of coupling to represent the relationship between the two subsystems, there may be errors. When the comprehensive level of the subsystem is low, it may also show a good degree of coupling. Therefore, we introduce a coordination degree model to comprehensively explore the coupling and coordination relationship between the two subsystems. The specific calculation formula is:

$$D = C \times T$$

$$T = \alpha U_1 + \beta U_2$$

The value of D is between 0 and 1. The closer D is to 1, the higher the coordination between the two; otherwise, the lower the coordination. T is the comprehensive evaluation index for the level of coordinated and coordinated development, α and β are the weights of each subsystem, and $\alpha + \beta = 1$.We assume that the two subsystems play an equally important role, so we set $\alpha = \beta = 0.5$.

In order to further identify the degree of coupling coordination and its changing trend characteristics, in accordance with the principle of "the upper limit is not in this group", we divide the degree of coupling coordination into the following ten categories. Table 1 shows the upper and lower limits of each group and the rating criteria.

Table 1. Classification of Coupling and Coordination Degree

Coupling and CoordinationD	0-0.09	0.09-0.19	0.19-0.29	0.29-0.39	0.39-0.49
Coordination Level	Extremely Incoordinated	Severely Incoordinated	Moderately Incoordinated	Mildly Incoordinated	Mildly Incoordinated
Coupling and CoordinationD	0.49-0.59	0.59-0.69	0.59-0.79	0.79-0.89	0.89-1.0
Coordination Level	BarelyCoordinated	Primaryly Coordinated	IntermediatelyCoordinated	Well Coordinated	ExcellentlyCoordinated

3.5. Empirical Results and Analysis

Through the above processing of the index data, the comprehensive development level and coupling coordination degree of new-type urbanization and industrial structure are obtained.From the perspective of the average comprehensive development level of new-type urbanization and industrial structure from 2010 to 2018, the average level of new-type urbanization in each city is between 0.18 and 0.31, and the gap between the average levels of different cities is relatively obvious.Among them, Wuhu City has the highest average level of new-type urbanization, which is 0.3068.The average level of industrial structure is between 0.08 and 0.096, and there is not much difference between the average levels of different cities.Among them, the average level of industrial structure in Wuhu City is the highest, which is 0.3068.Taken together, the average level of new-type urbanization in the six cities in southern Anhui is higher than the average level of the industrial structure, it indicate that the industrial structure in southern Anhui needs to be further adjusted, and the industrial development lags behind the construction of new-type urbanization.In addition, the new-type urbanization construction in southern Anhui is still in its infancy, and it may continue to improve with the increase in economic development in the future.The southern Anhui region needs to adjust the industrial structure as soon as possible, and optimize the output value structure and

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employment structure to meet the development of new-type urbanization in the region as much as possible.

From the results of the degree of coupling and coordination of the six cities in southern Anhui from 2010 to 2018, it can be seen that the degree of coupling of the six cities in southern Anhui is between 0.7 and 1, and the overall change in the nine years is small and stable for a long time. And it is highly coupled, and the coupling relationship within the system is in a state of rapid development.This shows that the new-type urbanization and industrial structure of Anhui Province are mutually reinforcing, they promote each other's development through a high degree of coupling.However, through the degree of coordination, it was found that the coordination relationship between the new-type urbanization and industrial structure in southern Anhui in the past nine years was not good.In 2010, except for Xuancheng, which was nearly incoordinated, the other five cities were mildly incoordinated; In 2014, Tongling became nearly incoordinated, and the degree of coupling and coordination in southern Anhui increased; In 2018, Ma'anshan and Wuhu were on the verge of imbalance, and the coordination level of Tongling was reduced, but the degree of coupling and coordination in southern Anhui showed an increasing trend. It can be seen that the coordination relationship within the southern Anhui system is still in its infancy, and the degree of coupling and coordination between new-type urbanization and industrial structure is not high.This requires the region to take into account the interaction between the two while strengthening new-type urbanization and industrial restructuring.In addition, from 2010 to 2018, the degree of coupling and coordination in southern Anhui has improved, and the relationship between new-type urbanization and industrial structure has become more coordinated. This shows that cities have begun to attach importance to the promotion of new-type urbanization and the improvement of industrial structure. They show a good development trend as a whole.See Figure 1 and Table 2 for details.

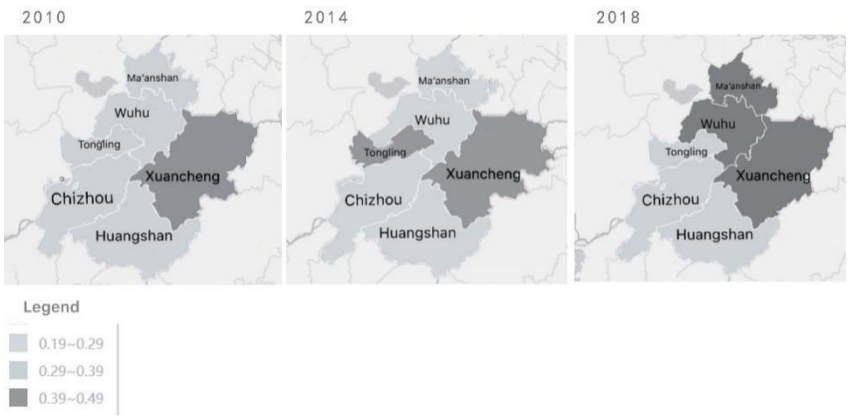

Figure 1. Spatial Distribution of New-TypeUrbanization and Industrial Structure Coupling Coordination in Southern Anhui

In general, the new-type urbanization and industrial structure of southern Anhui need to continue to progress. As one of the pilot areas of new-type urbanization, southern Anhui needs to play a leading role in improving urbanization from economic, social, environmental, and resident aspects. While continuously promoting new-type urbanization, we must also take into account the development of the three major industries, so that the industrial structure can be adjusted in time in accordance with social and economic development, and ensure that the development of the industry can bring good social and economic benefits to the region.

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Table 2. Coupling Coordination Degree in Southern Anhui

City	2010			2014			2018		
	C	D	Coordination Level	C	D	Coordination Level	C	D	Coordination Level
Ma'anshan	0.922	0.3707	Mildly Incoordinated	0.865	0.3887	Mildly Incoordinated	0.769	0.4166	Mildly Incoordinated
Wuhu	0.912	0.3753	Mildly Incoordinated	0.840	0.3847	Mildly Incoordinated	0.729	0.4255	Mildly Incoordinated
Xuancheng	0.901	0.4062	Mildly Incoordinated	0.875	0.3933	Mildly Incoordinated	0.874	0.3926	Mildly Incoordinated
Tongling	0.942	0.3605	Mildly Incoordinated	0.863	0.4084	Mildly Incoordinated	0.799	0.3855	Mildly Incoordinated
Chizhou	0.949	0.3545	Mildly Incoordinated	0.957	0.3468	Mildly Incoordinated	0.887	0.3730	Mildly Incoordinated
Huangshan	0.988	0.3251	Mildly Incoordinated	0.931	0.3563	Mildly Incoordinated	0.857	0.3831	Mildly Incoordinated

4. CONCLUSION

By using the coupling coordination degree model, we study the degree of coupling and coordination between new-type urbanization and industrial structure in 6 prefecture-level cities in southern Anhui. We find that:(1) There are obvious regional differences in the level of new-type urbanization in southern Anhui. From 2010 to 2018, the average levels of new-type urbanization in Wuhu and Maanshan are relatively high, while the average levels of new-type urbanization in Chizhou and Huangshan are low, which indicates that the urbanization rates in Wuhu and Ma'anshan are relatively high, and it can better meet the transformation and upgrading of the regional economy.(2) The industrial structure development gap in southern Anhui is not large, but it is generally backward. It can be seen from the research that from 2010 to 2018, the average industrial structure development gap of the six prefecture-level cities in southern Anhui was not large, but the level was generally low. This shows that the industrial structure in southern Anhui is relatively unreasonable. The region needs to adjust the industrial structure in a timely manner, optimize the development pattern of the three major industries, increase the proportion of the secondary and tertiary industries,and use the secondary and tertiary industries todrive the overall transformation and upgrading of the industry.(3) The degree of coupling between new-type urbanization and industrial structure in southern Anhui is high, but the degree of coordination is low. There is a strong degree of coupling between the new-type urbanization and industrial structure in southern Anhui, indicating that there is a clear interaction between new-type urbanization and industrial structure in the region. However, the level of coordination in the region is generally low and most are mildly incoordinated or nearly incoordinated. But over time, the coordination degree of each city has improved. In 2018, the number of cities on the verge of imbalance increased by 2 compared to 2010, which indicates that the new-type urbanization and industrial structure in the region are moving in a coordinated direction.

REFERENCES

[1] Qiong Wu, Weizhou Zhong, Yuesheng Zhang. Industrial Structure Adjustment and China's New-type urbanization. Urban Development Research, , (2018)Vol.25,No.1,p.37-47+54.

[2] Ying Zhang, Wei Chen. Research on the Impact of Industrial Structure Upgrade on Urbanization under Economic Agglomeration. Modern Management Science, (2019) No.9,p.38-40.

[3] Teng Xu, Jiyu Jiang, Yu Wan, Mi Zhou. Impact of New-type urbanization on Industrial Structure Optimization in Anhui Province. Journal of North China University of Water Resources and Hydropower (Social Science Edition), (2020)Vol.36,No.1,p.26-31.

ISSN: 2472-3703 DOI: 10.6911/WSRJ.202006_6(6).0014

[4] Yujie Wang. Study on the Coordination Relationship between New-type urbanization and Industrial Structure in Henan Province . Liaoning University,(2017).

[5] Liwen Zheng, Huang Junyu. Study on the coupling effect of new-type urbanization and industrial structure in Northeast China . Taxation and Economy,(2019) No.5,p.49-54.

[6] Min Wei, Zhenhua Hu. Research on Measurement of Coordinated Development of New-type urbanization and Industrial Structure Evolution in Hunan. Scientific Research Management, (2019)Vol.40,No,11,p.67-84.

[7] Qingxin Lan, Chen Chaofan. Has the new-type urbanization promoted the upgrading of the industrial structure? —— A spatial measurement study based on Chinese provincial panel data. Finance and Economics Research, (2013)Vol. 39,No.12,p.57-71.

[8] Xiaoxu Qi, Yawei Yang, Yang Zhiyou. Research on the Evaluation Index System of New-type urbanization. Macroeconomic Management, (2014)No.2,p.51-54.

[9] Dan Lu, Meng Ye, Qiong Yang. Review and reconstruction of new-type urbanization quality evaluation index system. Research on Financial and Economic Issues, (2014)p.72-78.

[10] Changqing Sun, Tian Tian. Construction of a New-type urbanization Evaluation Index System from the Perspective of Economics . Henan Social Science, (2013)Vol.21,No11,p.56-58.

[11] Min Wei, Hu Zhenhua. Research on the Coordination and Coordination of New Regional Urbanization and Industrial Structure Evolution. China Science and Technology Forum, 2019 (10): 128-136.

[12] Lei Wu. Research on the development of new-type urbanization in the Pearl River-Xijiang Economic Belt. Guangxi University, (2017).

[13] Xueling Zhang, Qiuxia Lu. Research on the Evaluation and Coordination of China's New Economic Development. Journal of Hangzhou Dianzi University (Social Science Edition), (2019)Vol. 15,No.5,p.14-20.

[14] Jie Zhu. Research on the measurement of coordinated development of new-type urbanization andinformationization in Jiangsu Province. Nanjing University, (2017).

[15] Ruifang Cheng, Xiaobin Lu. An Analysis of the Coordinated Development of Tourism, Tourism Transportation and Regional Economy in Hebei Province. Journal of Hebei University of Economics and Business (Comprehensive Edition), (2015),Vol.15,No.2,p.83-86.