Research on the Influence Factors and Function Mechanism of Symbiosis of Industry-city Integration in Pan-county Areas

Xiao-Yong HUANG¹,a and Yi Li¹,b

¹Financial College, Jiangxi Normal University, Jiangxi, Nanchang, China
a150801104@qq.com, b1256030329@qq.com

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Abstract. Industry-city integration has developed rapidly in large cities or new urban areas, but industry-city integration in pan-county areas has lagged behind. In order to better solve the problem of industry-city integration in pan-county areas, it is necessary to clarify the relevant influence factors and function mechanisms that affect industry-city integration in the pan-county areas. Through literature research, the main factors influencing the symbiosis of industry-city integration in pan-county areas are combed with factors such as common resource, symbiosis development, inter-county park, circular park, ecological symbiosis community, and demonstration area of industry-city integration. These factors play important roles in the symbiosis of industry-city integration, and form a systemic and modular mechanism for the symbiosis development of the industry-city integration in pan-county areas. Through symbiosis development of common resources in pan-county areas, creates cross-county industrial parks embodying predominant resources of the county, and builds them into circular industrial parks and ecological symbiosis districts with high standards, eventually forms wise industry-city integration symbiosis area for symbiosis development of industries, ecology, populations, cities, and the Internet. So, to improve the symbiosis level of industry-city integration in pan-county areas, it is necessary for these factors to play comprehensive roles.

Introduction

The county economy is the core cell of China's regional economic development, is the smallest statistical area to promote economic development, and is the smallest regional unit calculated by the Statistical Yearbook. Its economic development is very important. Most of China's counties are traditional agricultural counties, the industry is dominated by agriculture, and the economic base of counties is weak. How to promote the development of county economy with weak foundation? The industry-city integration is a breakthrough in the development of county economy, and it is the only way to develop county economy. In the context of China's transformation and upgrading, the industry-city integration is a development idea proposed for the separation of industries and cities. It requires the coordinated development of industries and cities. This paper first analyzes the factors affecting the symbiosis of the industry-city integration in Pan-county Areas, and then analyzes the mechanism of the factors affecting the industry-city integration in pan-county areas.

Analysis of the Influence Factors of the Symbiosis of Industry-city Integration in Pan-county Areas

The influence factors of symbiosis of industry-city integration in pan-county areas are mainly common resource, symbiosis development, inter-county park, circular park, ecological symbiosis community, and demonstration area of industry-city integration.

The Common Resource

The common resource refers to the resource distributed in two or more administrative regions, which is not divided by the division of county administrative regions, and breaks down the barriers of administrative divisions. Its main characteristics are integrity and symbiosis. The formation of
common resource is the first step to realize symbiosis of industry-city integration in pan-county areas.

**Symbiosis Development**

Symbiosis development refers to the cooperative development of common resource by two or more county administrative bodies. The county administrative bodies fully protect the integrity and ecology of resource and protect the ecological environment from being destroyed in the process of cooperative development.

**The Inter-county Park**

The inter-county park refers to the industrial park owned by two or more administrative counties. The industries in the inter-county park belong to two or more administrative counties. The most important part of the inter-county park is industry, which is the key to the development of a region.

**The Circular Park**

The circular park is developed through the transformation and upgrading of the inter-county park. The circular park mainly includes two parts: industry and ecology. The circular park pays attention to the coordinated development of economy, environment and social work, and at the same time the circular park can solve the problems which include waste of resources and environmental pollution.

**The Ecological Symbiosis Community**

The ecological symbiosis community is developed from a circular park. In the ecological symbiosis community, industries, communities, and ecology are being developed in a coordinated manner; Resources are recycled, resource consumption and environmental pollution are reduced.

**The Demonstration Area of Industry-city Integration**

The demonstration area of industry-city integration is developed from the industrial park. It can promote industry agglomeration, accelerate industry development, and explore the path for new urbanization, and plays a leading role in pilot and demonstration. At the same time, it can become a comprehensive urban functional area with good development of industries and perfect urban service functions.

**Analysis of the Function Mechanism of the Symbiosis of Industry-city Integration in Pan-county Areas**

According to the mechanism diagram of the symbiosis of industry-city integration (Fig. 1), the common resources, symbiosis development, inter-county park, circular park, ecological symbiosis community, and demonstration area of industry-city integration are mutually influential with the symbiosis of industry-city integration. The counties develop common resources and develop the Inter-county parks; the Inter-county parks gather industries, industrial resources are recycled, the Inter-county parks become the circular parks; enterprises and people come to the circular parks ,then the circular parks develop into ecological symbiosis communities; as the industries develop and expand, the communities expand, more people inflow the communities and the communities develop into demonstration areas of industry-city integration.

**The Function Mechanism of Common Resources on the Symbiosis of Industry-city Integration**

The common resources are the indispensable input factors in the production process, and are the raw materials needed for the production. The scarcity of resources will lead to the re-allocation of resources. The re-allocation of resources will lead to the flow of resources to emerging industries and green industries. The industries with high pollution and high energy consumption will be phased out, counties and industries will develop in a sustainable way.
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The Function Mechanism of Symbiosis Development on the Symbiosis of Industry-city Integration

Symbiosis development breaks the situation that the counties respectively manage resources, and counties can jointly develop and manage resources. It protects the integrity of common resources, prevents damage and waste of resources, and protects the ecological environment. Moreover, symbiosis development can promote the formation of resource specialization and industry cooperation. Resource specialization can promote industry agglomeration, and industry cooperation can promote development of productivity.

The Function Mechanism of Inter-county Park on the Symbiosis of Industry-city Integration

The industries in the inter-county park gradually agglomerate. Industry agglomeration promotes the accumulation of knowledge, talents, capital and other factors, more talents and capital come to
the park, and promote the development of the park. Industry agglomeration Intensifyes competition among enterprises in the park and enhances the competitiveness of enterprises. Industry agglomeration is conducive to improve the industrial support of the park, enterprises can quickly obtain the raw materials and services needed for production, improve production efficiency, reduce production costs and enhance competitive advantage.

The Function Mechanism of Circular Park on the Symbiosis of Industry-city Integration

Enterprises in the circular park use resources cyclically, reduce the use and waste of resources, reduce the production cost of products, and improve the competitiveness of products. Using resources cyclically can reduce the emission of pollutants, reduce environmental pollution, and promote the green development of ecological environment. A green and healthy ecological environment will attract more companies to enter the circular park. Companies entering the circular park can extend the industry chain of the park and promote the further development of the circular park industry.

The Function Mechanism of Ecological Symbiosis Community on the Symbiosis of Industry-city Integration

Enterprises in the ecological symbiosis community have formed industrial clusters through agglomerating and circular. Industry clusters include leading companies and supporting enterprises. The supporting enterprises provide production materials to the leading enterprises. At the same time, supporting enterprises can develop by relying on leading enterprises to a certain extent, thereby the leading enterprises and the supporting enterprises both can reduce the transaction costs, so that the ecological symbiosis community achieves economies of scale and scope.

Industry clusters can attract more people to develop and make the population gather in the ecological symbiosis community. People are the input elements of production and the direct demand side of urban functions. People's needs will prompt the ecological symbiosis community to improve public service facilities, then the ecological symbiosis community is more suitable for living and working. More companies and people will come to the ecological symbiosis community.

The enterprises in the ecological symbiosis community are developing in a green and sustainable way and the industries gradually form ecological industries. The development of ecological industries can save resources and reduce environmental pollution. A green and healthy environment will further promote the industrial ecological development, so as to achieve sustainable industrial development within the industry clusters.

The Function Mechanism of Demonstration Area of Industry-city Integration on the Symbiosis of Industry-city Integration

The demonstration area of industry-city integration can continuously promote industrial agglomeration, give play to the advantages of industries agglomeration, promote industrial development, and improve industrial competitiveness and economic efficiency of enterprises. The development of the industry will in turn promote the development of the demonstration area of industry-city integration and promote the industry-city integration.

The demonstration area of industry-city integration will improve the infrastructure of education, medical care, culture and sports, accumulate energy and add stamina for the development of the demonstration zone, and improve people's living conditions. At the same time, demonstration area should support housing, commercial, entertainment and other facilities to promote the industry-city integration in the demonstration area.

The demonstration area of industry-city integration can continuously promote population agglomeration. Population agglomerating will accelerate knowledge gathering, technology gathering, and experience gathering. They will promote the development of the industry and the demonstration area.

The ecological environment is the basic condition for human survival and development, and is the basis for economic and social development. Demonstration area which focuses on the ecological construction will promote the green development of the demonstration area, and promote the
environment of demonstration area forms a green, healthy and sustainable ecological environment; the green and sustainable development of the ecological environment will promote the formation of green and low-carbon living production methods in the demonstration area.

The wise demonstration area of industry-city integration will increase the sales channels of the products, diversify the sales methods of the products, reduce the circulating cost of the enterprises and improve the circulating efficiency through “Internet +”; at the same time, demonstration area can help enterprises to solve the problem of financing difficulties, promote the development of enterprises and accelerate the industry-city integration in the demonstration area through “Internet +”.

Conclusion

In summary, the industry is the foundation of urban development, and the city is the carrier of industrial development. The roles of common resource, symbiosis development, inter-county park, circular park, ecological symbiosis community and demonstration area of industry-city integration promote vigorous development of the industry and healthy development of the county. How to quickly realize the symbiosis of industry-city integration: first, formulate a unified development plan of industry and county, so that the industry and county can develop simultaneously; Second, use industrial agglomeration to promote resource agglomeration and promote industrial optimization and upgrading; Third, develop and strengthen leading enterprises and characteristic industries through industrial support, and improve the competitiveness of the industry. Fourth, improve the county's infrastructure and the level of public services, and enhance the residential function of the county; fifth, deepen the inter-county symbiosis development, and adhere to the green development of the ecological industry.

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References