

# Research on Optimization of Ice and Snow Industry Cluster Structure Based on Human Capital Theory

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**Keywords:** Ice and Snow Industry, Cluster, Development Countermeasures

**Abstract:** Ice and snow industry is a branch of sports industry, which refers to the collection of the same kind of economic activities that provide the society with ice and snow sports products and the integration of the same kind of economic sectors under this background. Helping the transformation of the ice and snow industry and promoting the economic development of the ice and snow industry are conducive to the development of China's ice and snow industry. China should train professionals to develop the ice and snow industry and provide a strong guarantee for the development of the ice and snow industry cluster. The development of ice and snow sports in China started late, with abundant resources but uneven distribution and insufficient development. Compared with other sports powers, China lags behind seriously. With the continuous development of China's sports industry, the ice and snow industry has developed continuously. In this process, Heilongjiang Province, as the most important province in the development of ice and snow industry, is the most important province in the development of China's ice and snow industry. This paper will take Heilongjiang Province as an example, based on the theory of human capital to study the development strategy of optimizing the structure of ice and snow industry cluster.

## 1. Introduction

The goal of China's industrial cluster development is to establish and perfect relevant laws and regulations. The government should give full play to the role of low-carbon industry in the process of ice and snow transformation. Helping the transformation of the ice and snow industry and promoting the economic development of the ice and snow industry are conducive to the development of China's ice and snow industry [1]. Ice and snow industry is a branch of sports industry, which refers to the collection of the same kind of economic activities that provide ice and snow sports products for the society and the integration of the same kind of economic departments under this background. It is also a social phenomenon resulting from the mutual combination of sports social development and other social practices [2]. Industrial cluster is a sign to measure the economic development level of a country or region. Under different economic development stages and industrial structure conditions, there are obvious differences in the choice of economic growth points. The social pulling effect of the regional economic growth model represented by industrial clusters is increasing [3]. With the strong competitiveness of multinational companies and the strong influence of super-scale economy, industrial clusters have not been submerged by the wave of globalization, but have shown more vigorous vitality. Compared with other industries, the development of the ice and snow industry is relatively late. However, relying on its inherent advantages, its development speed is relatively fast, and it has achieved good benefits at the economic and social levels.

At present, China's ice and snow industry is still in the early stages of development, and there are deficiencies in terms of market stock, business model, and industrial structure [4]. The development of China's ice and snow sports started late, with abundant resources but uneven distribution and insufficient development. Compared with other sports powers, China is seriously behind. Industrial clusters play an extremely important role in promoting regional economic development, optimizing the allocation of social resources, stimulating labor employment and promoting social progress [5]. As an effective development model, it has become one of the strategic ways for governments to promote regional development and improve comprehensive competitiveness. The ice and snow

culture first appeared in Heilongjiang, mainly because it is located in the northeast of China, with high dimensions, cold winters, and long icing periods and long snow periods. It has a unique advantage in developing ice and snow culture [6]. Exploring the path and method of the transformation and development of the ice and snow industry based on the business model, and optimizing the industrial structure according to the location resource endowment, so as to expand the size of the ice and snow consumer group and the snow and ice industry have strong theoretical value and practical significance [7]. China should train professionals to develop the ice and snow industry and provide a strong guarantee for the development of the ice and snow industry cluster. This article will take Heilongjiang Province as an example to study the development of the snow and ice industry cluster and propose scientific development countermeasures.

## 2. Analysis of Problems Existing in the Development of Ice and Snow Industry

### 2.1. Lack of Reasonable Adjustment Plan for Ice and Snow Industry

Ice and snow industry cluster is a collection of time and space within a specific area, and it is also an internal closely linked system. Its spatial structure is characterized by certain axes, circles and networks, which fully reflects the interaction between the components of the cluster and the overall structure of the cluster [8]. Due to the lack of hardware, most ski resorts cannot meet people's needs for skiing, so it is difficult to develop stably. Under the condition of market economy, market factors occupy the dominant position, but because the ice and snow industry in Heilongjiang province is the initial start. As the market construction is not perfect in the current environment, there is a situation in which the competition among many enterprises is not legitimate enough [9]. Most ski resorts do not have the necessary conditions, either in the corresponding geographical conditions or in the corresponding hardware conditions. In many ski resorts, there is still no functional way to meet the needs of ski enthusiasts. In addition, due to the lack of a complete system in the development of the ski industry in the market and the lack of a reasonable adjustment plan for the ice and snow industry, the development of the ice and snow industry in Heilongjiang Province has been seriously hindered. Many private venues began to appear, resulting in both the safety factor and the construction scale can not meet the requirements of market development and industrialization.

### 2.2. It's Very Difficult to Make Rational use of Assets

Heilongjiang Province was restricted by technology in the fourth quarter. In winter in Heilongjiang Province, the development of ice and snow industry lagged behind, which restricted the development of ice and snow sports and also resulted in the asset status of parts industry. Under current technical conditions, ice and snow sports are largely determined by climate and seasonal conditions, so most ski resorts in Heilongjiang province have been idle for a long time. Facing the current situation of ice and snow industry development, Heilongjiang province must make adjustments, integrate advantages and concentrate on development. Industrial clusters and urban clusters are mutually lazy, constantly integrated and developed interactively. At present, a large number of researches by relevant experts are generally conducted on both industrial clusters and urban clusters. According to the way shown in Figure 1, this paper expounds the idea of organically combining the two with industrial parks to establish the industrial development of urban agglomeration.

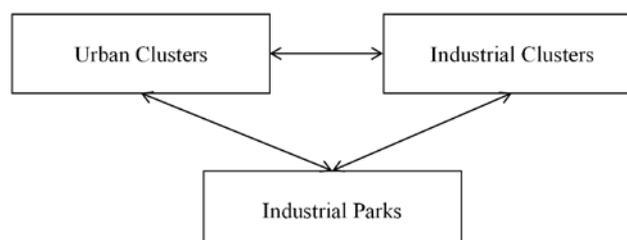


Figure 1 Relationship between city clusters, industrial clusters, and industrial parks

The development of industrial clusters is the result of the joint action of environmental factors, demand conditions, production factors and supporting industries. The construction of industrial parks and high-tech zones not only increases the output per unit area, but also promotes the harmonious development of metropolitan areas. The model of Figure 1 is further optimized, and the development mode of urban agglomeration as shown in Figure 2 is obtained.

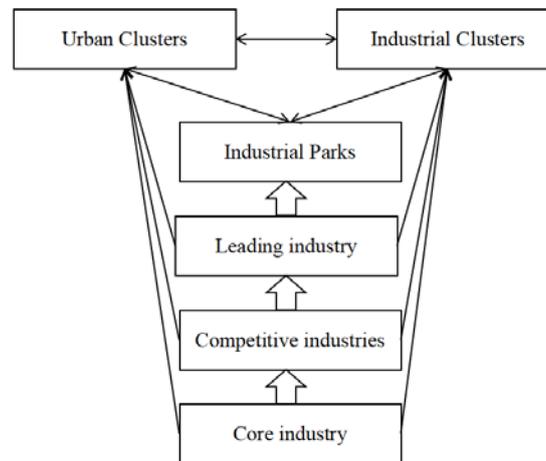


Figure 2 Urban agglomeration development model

Due to the influence of production means, sports demand, related and supporting industries, sports competition and performance enterprise strategic system and government behavior system, Heilongjiang Province has not yet formed a complete ice and snow industry chain. From the perspective of industrial development, idle assets will cause a waste of resources and bring huge economic losses to operators. The unique geographical proximity and aggregation make Heilongjiang Province improve the cost efficiency and energy efficiency of ice and snow industry. The policy framework of ice and snow industry development in Heilongjiang Province is being designed and combined at the macro, micro and operational levels, with its leading and operational features.

### 3. Introducing Ice and Snow Sports Culture into Colleges and Universities

The introduction of ice and snow sports into winter sports teaching in Heilongjiang colleges and universities is not only conducive to the cultivation of students' physical and psychological qualities, but also enriches the contents of college sports teaching, broadens students' vision, and is conducive to the cultivation of students' practical ability and the spirit of brave innovation. Cultivating Heilongjiang province college students' understanding of the ice and snow sports culture can not only enliven the campus atmosphere of colleges and universities, but also expand the influence of the ice and snow sports culture, allowing residents around colleges and universities to participate in the ice and snow sports exercise together [10]. College students are a very young group, they have a strong enthusiasm for all new things, which can be an important successor to the development of ice and snow sports culture. Colleges and universities can regularly hold photography activities with the theme of ice and snow culture, encourage students to shoot some ice and snow-related works that reflect the cultural life of Heilongjiang province's urban residents, and inject new vitality into the ice and snow culture of Heilongjiang province's colleges and universities. Improve the ice and snow course venues and various training equipment and other hardware facilities, build a solid foundation to provide a guarantee for teaching reform ideas, to achieve the scientific and standardized teaching materials, to achieve the healthy and sustainable development of ice and snow courses on campus.

Colleges and universities bear the responsibility of promoting regional culture, so they should use their own advantages to deepen students' understanding of ice and snow sports culture in different ways and stimulate students' interest in it. Consciousness and motivation, give play to its subjective initiative, and prompt college students to create spaces for active thinking and

exploration. In the construction of ice and snow facilities, schools should adopt a cost-effective method to avoid excessive investment but fail to achieve the corresponding teaching effect. In international large-scale ice and snow sports competitions, the school should organize students to watch live TV collectively so that students can fully appreciate the unique charm of ice and snow sports [11]. With the adjustment of the strategic goal of sports development in our country, the importance of social sports has been comprehensively improved, and its important foundation function has been generally recognized. University campus ice and snow sports culture is a group culture with university students as the main body, various ice and snow sports activities as the main content, university campus as the main space, and ice and snow sports spirit as the characteristic. Higher vocational colleges should take quality education as a model and highlight beneficial personalities, so as to cultivate students' autonomous learning. Colleges should attach great importance to teaching infrastructure, especially high standards and a large number of venues, and take effective measures to increase capital investment in teaching ice and snow courses.

#### **4. Conclusions**

The cluster development of ice and snow industry can promote the development of related industries. Through the information management thought and the pattern, realizes the ice and snow industry clustering process each link the conformity. The value creation activities of the ice and snow industry are special. To construct the business model and optimize the industrial structure of the ice and snow industry, the ice and snow industry should be developed according to local conditions according to the differences of natural resources, human resources and location resources. Heilongjiang Province has obvious advantages in the development of ice and snow industry, but at the same time it is facing increasing competition in the domestic and foreign markets. Heilongjiang province's ice and snow industry must always find out its own shortcomings, have a sense of crisis, and give full play to the government's macro-control and leading role. The informatization of the ice and snow industry is a long-term and comprehensive systematic project. In formulating the management plan, we should proceed from reality, not only comprehensively and systematically, but also focus on it, actively and steadily promote the construction of clustering of the ice and snow industry. The Winter Olympics provide new opportunities for the development of the ice and snow industry. In the future, we should construct a scientific and reasonable business model for the ice and snow industry, vigorously optimize the industrial structure, and realize the healthy and rapid development of the ice and snow industry.

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