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Study on the Development Path of Guiyang Exhibition Industry Cluster

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Abstract: As an industry with wide range of social influence and high correlation degree, the exhibition industry has gradually developed into one of the main forces to show the comprehensive national strength of our country. The exhibition industry of Guiyang City is an important platform to show the economic and social development of Guizhou to the world, and its development goal is to build "China Summer Exhibition City". Guiyang has unique climate resources and solid industrial foundation, which provides superior conditions for the development of Guiyang exhibition industry cluster, but there are also some problems. Based on the perspective of industrial cluster, this paper obtains data through questionnaire survey and builds GEM model to analyze the status quo and problems of the development of Guiyang convention and exhibition industry cluster, and puts forward suggestions for the development of Guiyang convention and exhibition industry cluster.

1. Introduction

The exhibition industry has vigorously facilitated the development of transportation, catering, hotels, and other industries. In 2021, Guizhou Province proposed to promote the complementary strengths and coordinated growth among small and medium-sized enterprises, adhere to the leading enterprises, and form a large number of industrial clusters with a significant scale, high economic efficacy, and strong competitiveness. Guiyang will take "big data" as the core of innovation, guided by "market, marketing, brand, information, internationalization", based on relatively favorable ecological resources, convenient transportation conditions, and perfect infrastructure, strengthen the government's guidance and support for the development of the industry, and enhance the overall scale and overall competitiveness of the exhibition industry. We strive to build "Guiyang China Summer Exhibition City" and "four seasons activity area", thus forming an exhibition industry cluster, and promoting the rational flow and effective allocation of market elements through the industry support, industry contacts, and industry operation exhibition service system.

2. Literature Review

2.1 The conference and exhibition industry

Voronova O. V. et al.(2020) submit that the conference and exhibition industry constitutes a dynamic industry domain, exerting an efficacious influence on diverse activity domains, regional and global economies, as well as major activity forms[1] . Li Tiecheng(2020) asserts that under the theories of industrial chain integration, industrial amalgamation and economic symbiosis, there is an integration of the convention and exhibition economy and the airport economy - functional coordination based on the industrial chain, along with the spatial integration of the urban convention and exhibition cluster and the airport economic zone[2]. Li Qing(2021) indicates that the convention and exhibition industry, as a significant sector of the modern service industry, assumes a considerable role in promoting regional and industrial development[3]. Due to its aggregation traits, the convention and exhibition industry promotes regional economic development to a certain degree. Su Jie and Zhang Zekun(2018) opine that the convention and exhibition industry can proficiently facilitate the development of the urban economy by leveraging its correlation and multiplier effect with the service industry and collaborating closely with other industries to form a new industrial pattern and promote the sound development of the service industry[4]. Yao Chenmin et al.(2019) aver that China is currently in a new stage of development, and exhibitions, as high-density distribution centers for people flow, information flow and business flow, can link production and sales, enable the economies of various industries to continuously integrate with each other, fulfill the purpose of enhancing the quality and efficiency of economic transactions, and subsequently optimize the industrial structure and upgrade the level of foreign trade[5].

2.1.1 Industrial cluster

Zhou Ke and Ren Tianyu(2021) contend that cluster development is a dynamic process, and the establishment of an effective supervision and restraint mechanism within an industrial cluster can furnish more stable and lasting support for enterprise cooperation[6]. Bai Xueyan(2021) holds that developing industrial clusters can enhance China's comprehensive competitiveness. In the process of formation and development of industrial clusters, the government plays a significant role. Simultaneously, relevant policies are of great significance to the informatization construction of industrial clusters[7]. Zhang Huimin(2021) proposes that the innovation benefits of industrial clusters are engendered by the synergy of certain cooperative structures, which can be defined as a method to augment the competitiveness of small enterprises[8]. Clustering promotes the improvement of production and cooperation, reduces the investment cost of providing premium capacity, mitigates transaction costs, enhances operational efficiency, and promotes the process of innovation. Hui lianghao(2021) maintains that the innovation performance of industrial clusters is constantly enhancing to adapt to the complex internal and external environment and is continuously strengthening its dependence on dominant resource acquisition. Therefore, industry groups should participate in the "joint" approach of organizing activities to realize the benefits of the benefits in order to maximize profits[9]. Zhao Tingting(2020) points out that within the purview of the convention and exhibition industry cluster, related industries directly and indirectly engaged in convention and exhibition activities will converge to form an operation mode of joint assistance, which will drive the overall economic level of the convention and exhibition industry to ascend[10].

3. Research Methods and Data Sources

3.1 Research Methods

Pad more and Gibson built the competitiveness assessment model of industrial clusters based on Porter's diamond model according to the quantitative evaluation principle, and the model is referred to as the GEM model（Assessment model of industrial cluster competitiveness）.This paper starts from the six key elements of GEM and designs indicators based on the characteristics of exhibition industry clusters. It conducts a questionnaire survey to score various factors of the exhibition industry in Guiyang and evaluates its current development status. Based on the survey results, the paper uses the SPSSAU software to calculate the weight of each factor in the exhibition industry cluster in Guiyang, and then applies the GEM model formula to calculate the GEM score of the exhibition industry cluster competitiveness in Guiyang.

3.1.1 GEM model building elements

GEM model (Assessment model of industrial cluster competitiveness) includes six influencing factors: resources, facilities, suppliers and related auxiliary industries, enterprise structure, strategy and competition, local market and external market. It is composed of three main factors, each of which is composed of a specific pair of factors, so these three factors are called the three "factor pairs". Among these factors, "resources" and "facilities" constitute the basic elements of "factor vs. I" and constitute the supply elements of the whole innovation system. "Factor Pair II" is an integral part of the overall system, consisting of "suppliers and related affiliated industries", "Corporate structure", "Strategy and competition"; Market elements are composed of "local market" and "external market", which is called "factor pair III". The initials of the three elements form the GEM[11] .

3.1.2 GEM model quantification

In this paper, the quantitative analysis of GEM model is divided into three stages. First, six elements are analyzed. Each item is on a scale of 1-10, with different values representing the following meanings:

A score of 1 represents the lowest level, indicating a significant deviation from the national average and a substantial impact on cluster development. A score of 2 represents a low level, indicating a notable difference from the national average, which somewhat affects cluster development. A score of 3 indicates a fairly common level with some discrepancies from the national standard, which may influence cluster development. A score of 4 denotes a generally common level, lower than the national average. A score of 5 signifies appropriate qualifications, matching the national average. A score of 6 represents qualification, exceeding the domestic average but lacking competitiveness. A score of 7 indicates a good level, with some national competitiveness. A score of 8 means excellent, leading within the country. A score of 9 represents outstanding, ranking among the top five nationally. A score of 10 is very good, with world-class competitive capabilities.

First of all, this paper uses the assignment method to set up two level measures for six factors that affect the competitiveness of enterprises, and gives 1-10 evaluations according to the criteria from very poor to very good.

Second, the score for each factor is calculated, and then the average of each factor is multiplied by the corresponding weight before the sum.

Finally, 3 "factor pairs" are used to calculate the competitiveness score of industrial clusters.

Finally, 3 "factor pairs" are used and the following formula is adopted:

$$GEM = 2.5 \times \prod I = 1, 3 \text{ (two-thirds } D2i - 1 + D2i) \ (I = 1, 2, 3) \quad (1)$$

In the formula 1, d2I-i and D2i represent the scores of factors and calculate the competitiveness scores of industrial clusters.

3.1.3 GEM model index system construction

According to the basic principle and quantitative method of GEM model, various indexes of 6 major factors are constructed, and the scores of each factor are calculated by using the scores obtained by each index, and the total score of the competitiveness of Guiyang exhibition industry cluster is calculated [12]. The competitiveness index system of Guiyang Exhibition industry cluster constructed is shown in Table 1.

Table 1: GEM model index system construction

Competitiveness	Factors	Indicators
Basics	Resource A	Geographic Advantage A1
		Capital Resources A2
		Human Resource Level A3
		Comprehensive Economic Level A4
	Facilities B	Convention & Exhibition Infrastructure B1
		Convention Venue Facilities B2
		Government Services B3
		Educational and Research Institutions B4
		Convention Association Services B5
		Urban Environment B6
Enterprises	Suppliers and Related Auxiliary Industries C	Number and Strength of Convention Companies C1
		Convention-related Auxiliary Industries C2
	Enterprise Structure, Strategies, and Competition D	Corporate Strength D1
		Marketing Capability D2
		Financial Condition D3
		Learning and Innovation Capability D4
Market	Local Market E	Scale of the Local Convention Industry Market E1
		Development Prospects of the Local Convention Market E2
		Development Level of the Local Convention Market E3
	External Market F	Scale of the External Convention Industry Market F1
		Entry Barriers to the External Market F2

3.2 Data collection and index calculation

Based on GEM model, this paper designs questionnaire survey and measurement indicators, makes statistics on the investigated data, and uses relevant methods to calculate the index weight and single factor score. In this study, data were collected by means of questionnaires, and the contents of questionnaires were mainly collected by scoring the importance of each index and the existing competitiveness. From January to March 2022, 100 questionnaires (including 25% of the employees in the department) were distributed to the respondents by "Juan xing" software, with a recovery rate of 100%. After statistical analysis of the questionnaire data, the competitiveness evaluation table of Guiyang exhibition industry cluster was obtained, as shown in Table 2:

Table 2: Questionnaire survey and measurement indicators

Competitiveness	Factor	Indicators	Average Indicator Score	Indicator Weight	Single Factor Score
Basics	Resource A	Geographic Advantage A1	8.27	0.26	7.94
		Capital Resources A2	8.13	0.26	
		Human Resource Level A3	6.83	0.22	
		Comprehensive Economic Level A4	8.37	0.26	
	Facilities B	Convention & Exhibition Infrastructure B1	7.04	0.17	6.77
		Convention Venue Facilities B2	7.46	0.18	
		Government Services B3	6.56	0.16	
		Educational and Research Institutions B4	6.61	0.16	
		Convention Association Services B5	6.72	0.16	
		Urban Environment B6	6.55	0.16	
Firm	Suppliers and Related Ancillary Industries C	Number and Strength of Exhibition Companies C1	7.18	0.49	7.38
		Exhibition-Assisting Related Industries C2	7.58	0.51	
	Enterprise Structure, Strategy and Competition D	Enterprise Strength D1	6.47	0.25	6.58
		Marketing Capabilities D2	6.44	0.24	
		Financial Position D3	6.49	0.25	
		Learning and Innovation Ability D4	6.9	0.26	
Marketplace	Local Market E	Local Exhibition Industry Market Size E1	6.74	0.32	6.95
		Development Prospect of Local Exhibition Market E2	7.08	0.34	
		Local Exhibition Market Development Level E3	7.01	0.34	
	External Market F	External Exhibition Industry Market Size F1	7.09	0.51	7.02
		Barriers to Entry in External Markets F2	6.94	0.49	

4. Data Analysis

4.1 Competitiveness calculation score

According to the calculation data in Table 2, through the quantitative calculation formula of the competitiveness of the GEM model industrial cluster[1], the GEM total of the competitiveness of Guiyang exhibition industry cluster can be obtained from formula 2:

GEM = 2.5 x ∏ I = 1, 3, 2 D I - 1 + 2 D I) = 2.5 two-thirds [(D1 and D2) * (D3 and D4) * (D5 D6 +)] two-thirds = 2.5 x [(7.94 + 6.77) * (7.38 + 6.58) * Two-thirds of = 504.75 (6.95 + 7.02)] (2)

Note: (D1 represents resource factor score, D2 represents facility factor score, D3 represents supplier and related ancillary industry factor score, D4 represents enterprise strategy, structure and competitiveness factor score, D5 represents local market factor score, D6 represents external market factor score)

On this basis, the GEM of a certain industry cluster is comprehensively evaluated, and 1000 points is obtained, the comprehensive evaluation index of this index is 10 points, which indicates that the competitiveness level of Guiyang's exhibition industry is world-class; If GEM score is 640 points, the average score of each factor is 8 points, which indicates that Guiyang exhibition industry cluster has a unique competitive advantage in the whole country; If the GEM score is 490 points, the average score of each factor is 7 points, which indicates that Guiyang exhibition industry cluster has a certain competitive advantage in the whole country.

Through GEM calculation formula, the result is that the competitiveness score of Guiyang exhibition industry cluster is 504.74 points (490 points <504.74<640 points), indicating that Guiyang exhibition industry agglomeration has a certain competitive advantage in the country and has become an important host city of international exhibition centers

4.2 Score evaluation for each factor

It can be calculated from the data in Table 2 that the score of resource factor is 7.94 points, among which the three indicators of resource factor including "location advantage", "capital resources" and "comprehensive economic level" are all above 8 points, indicating that these three indicators are an important basis for promoting the development of regional exhibition industry in Guiyang. The human resource level is 6.83 points, indicating that the professional knowledge and operational experience of the exhibition industry employees are insufficient. Among them, the score of facilities is 6.77 points, and the scores of "exhibition infrastructure" and "exhibition venue facilities" are the highest, with scores of 7.04 and 7.46 respectively. The scores of other indicators are above 6.5 points and below 7 points, indicating that the exhibition venues and infrastructure of Guiyang are relatively perfect. And Guiyang International Convention and Exhibition Center as the largest exhibition venue in Guiyang city, the transportation is very convenient, restaurants and hotels are relatively perfect; However, in terms of "scientific research and education institutions", at present, many colleges and universities have set up the exhibition major course to train exhibition talents, but there may be some problems in learning methods and practical experience, so it is necessary to strengthen the training of the exhibition industry. The score of the factor "suppliers and related auxiliary industries" is 7.38 points, and the score of the index "the number and strength of exhibition companies" is 7.18 points, indicating that the number of exhibition companies is relatively large, but there is no major large-scale exhibition companies to act as the leader.

Therefore, it is necessary to support and promote the development of exhibition enterprises through relevant government departments and exhibition industry associations. The score of "enterprise structure, strategy and competition" is 6.58, which is the lowest among the six factors. Among them, the index of "marketing ability" has the lowest score, indicating that Guiyang exhibition enterprises lack standardized marketing ability mode, which makes the development and competitiveness of Guiyang exhibition industry cluster gradually reduced. Therefore, exhibition enterprises should develop training programs for exhibition personnel to improve their marketing ability and build their own unique exhibition market. The score of "local market" factor is 6.95. According to the survey, exhibition practitioners have high expectations for the development prospects of Guiyang's local exhibition market, indicating that Guiyang's exhibition industry cluster has a large space for development. Therefore, it is necessary to improve the competitiveness of exhibition enterprises and expand the scale of Guiyang's exhibition market through their own strength. So as to enhance the competitive position of exhibition enterprises. The score of "external market" factor is 7.02, which contains little difference in the scores of various indicators, indicating that the number of foreign exhibitors participating in Guiyang's exhibition industry is considerable, and the scale of Guiyang's external exhibition market continues to expand.

5. Recommendations

Government agencies should enact legislation to standardize market conduct and maintain order within the exhibition sector, enhance the infrastructure of exhibition venues, offer subsidies for training exhibition professionals, establish service standards and guidelines, promote the development of exhibition industry associations, introduce an exhibition incentive system to encourage orderly competition among enterprises, aid small and medium-sized exhibition businesses in their transformation and advancement through policy guidance and tax incentives, facilitate the formation of industrial cluster systems by these enterprises, and optimize the allocation of exhibition resources.

Exhibition companies must strengthen their overall competitiveness by actively recruiting and developing skilled professionals, establishing a strong brand image, and enhancing promotional activities, as well as refining their internal management and service systems. These enterprises should focus on innovation to assemble the Guiyang exhibition industry cluster, positioning it as a catalyst for urban growth.

6. Conclusion

This study conducts an analysis of the competitiveness of the Guiyang convention and exhibition industry cluster from the perspective of industrial cluster competitiveness. Data is collected via questionnaires and the mean value and weight of various indicators are calculated by employing the SPSSAU application software of Juanxing. The total competitiveness score of the Guiyang convention and exhibition industry cluster is computed using the GEM formula. Based on the data analysis, the reasons for the deficiency in competitiveness of the Guiyang exhibition industry cluster are summarized, and strategic suggestions and the development path for the Guiyang exhibition industry cluster are proposed. Due to the constraints of various factors, the competitiveness level of the Guiyang exhibition industry cluster remains relatively weak. To achieve the long-term development of the Guiyang exhibition industry and reach the goal of "China's summer exhibition city", the government needs to enhance the reform and innovation of the exhibition industry, standardize the marketing management system and operation strategy model of exhibition enterprises, and make a significant breakthrough in the training and planning of exhibition talents.

Guiyang exhibition industry is still confronted with numerous problems, such as insufficient funds, limited strength, small scale, financing difficulties, and many other issues. All industries and departments should make concerted efforts and collaborate to promote the healthy development of the Guiyang exhibition industry cluster and enhance the competitive strength of the Guiyang exhibition industry cluster, thereby truly enhancing the international competitiveness of Guiyang.

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