

Research on Evaluation Index System of Science and Technology Entrepreneurship Ecosystem in Aba Prefecture

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Abstract. This paper analyzes the research status and characteristics of the science and technology entrepreneurship ecosystem evaluation system, and puts forward the construction principles of the Aba Prefecture science and technology entrepreneurship ecosystem index system. Combined with the regional reality, it constructs an evaluation index system suitable for the actual situation of the region from the two main aspects of input and output. Promote the development of regional science and technology entrepreneurship.

Keywords: Technology entrepreneurship; evaluation indicators; entrepreneurial ecosystem; performance evaluation.

1. Introduction

Science and technology entrepreneurial activities play an important role in improving regional economic level, technological innovation, and helping the poor. Since the first time that “Chuangchuang” was written into the Central Document in 2015, the innovation of mass entrepreneurship has become a national development strategy. In May 2016, the “National Innovation Driven Development Strategy Outline” issued by the Central Committee of the Communist Party of China and the State Council clearly stated the strategic goal of “entering an innovative country by 2020 and basically building a national innovation system with Chinese characteristics”. After several years of development, the entrepreneurial service carriers such as Zhongchuang Space and Incubator have achieved gratifying results in promoting regional economic development and stimulating the vitality of social innovation and entrepreneurship. But at the same time, we should also see that there is still a certain gap between the regional entrepreneurial ecological environment and entrepreneurial services compared with developed countries. Therefore, how to better serve science and technology entrepreneurship, improve the quality of entrepreneurship and increase the number of entrepreneurship, further improve the operating mechanism of the technology entrepreneurship ecosystem, and optimize the regional entrepreneurial ecological environment has become the focus of current attention. Combining with the actual situation of the Aba area, it is of great significance to construct a regional entrepreneurial ecosystem evaluation index system, promote the development of regional science and technology innovation and entrepreneurship, and provide a reference platform for the construction of other similar areas.

2. Research Status

In recent years, the literature on entrepreneurial ecosystem research published in domestic and international journals has shown an upward trend, but the research has focused on the connotation, composition and characteristics of ecosystems, and there are few studies on entrepreneurial ecosystem evaluation. , still in its infancy. In the existing research, the links between the evaluation indicators of the science and technology entrepreneurial ecosystem evaluation are loose, and it is difficult to fully reveal the essence of the ecosystem [1]. In the research of service carrier, the current research on the space of Zhongchuang mainly focuses on the operation mode, service content, development form, business operation mode, etc., but there are few studies on the performance evaluation of the space creation of Zhongchuang. In terms of operational mechanism, Zhang Lingbin (2014) [2] started

from the natural ecosystem, combined with the synergistic mechanism, and focused on the relationship between various institutions in the space-building ecosystem. In terms of system elements, Ni Xinliang and Dai Chun (2015) [3] proceeded from the study of the significance and concept of the space of the creation, combined with the research results of the entrepreneurial ecosystem at home and abroad, and based on it, The six elements of space are policy, finance, culture, human capital, support, and market. Chen Jing (2017) [4] analyzes the elements of the entrepreneurial ecosystem from the perspectives of micro, meso and macro, focusing on the relationship among elements, coordination, chain, integration and integration.

3. Analysis of the Characteristics of Science and Technology Entrepreneurial Ecosystem

The purpose of science and technology innovation and entrepreneurship is to rely on regional markets, organize regional innovation and entrepreneurship resources, tap regional technological innovation capabilities, coordinate regional and regional science and technology innovation competition and cooperation, thereby realizing regional natural resources, industry resources, policy resources, human resources and cultural resources. Efficient configuration and structural optimization, disseminate innovative thinking, enhance intellectual property protection to serve and transform efficiency, promote the application and popularization of results, and finally find and form a unique core of innovation for the development of the region, and promote innovation and development cooperation between regions. Zhongchuang Space and Technology Business Incubator is the gathering place of these innovative and entrepreneurial resource elements, and is influenced by the entrepreneurial ecological environment.

4. Constructing the Evaluation Index System of Science and Technology Entrepreneurship Ecosystem

Combining with the reality of entrepreneurial ecology in Aba area, by constructing a reasonable evaluation index system for entrepreneurial ecosystems, it can help to realize the indicators of regional innovation and entrepreneurship after the investment in innovative and entrepreneurial resources and the implementation of innovation and entrepreneurship promotion policies. Full operation, reasonable structure, and find relevant problems in the operation process and adjust in time to ensure the good operation of the regional science and technology entrepreneurship ecosystem, and better promote the effective implementation of the dual-creation work.

5. Evaluation Index System Selection Principle

Combined with the actual situation of Aba area, this paper proposes the following index system selection principles for the construction of regional public performance performance evaluation index system:

he principle of comprehensiveness. "Science and technology are the primary productive forces". To design an evaluation index system for innovation and entrepreneurship in a region, innovation should be integrated throughout. Scientific and technological innovation does not refer to a certain aspect of science and technology, but includes a new scientific idea, an innovative technology development, a new product development, and a new process in the process of production management, marketing and service. New methods and new methods with scientific basis and practical effects. Therefore, the evaluation system indicators should be comprehensive, and the achievements of innovation and entrepreneurship cannot be reduced to several directions.

The principle of integrity. When designing indicators, it is necessary to pay attention to the analysis of the main factors affecting the whole. It is not possible to rely on stacking indicators and try to select effective indicators to ensure the comprehensive and accurate evaluation indicators.

Feasibility principle. The choice of indicators should have a relatively high degree of desirability, and can be digitalized, both versatile and in line with the characteristics of the Aba region.

Scientific principles. Indicators need to reflect the nature of the things or the law of operation as objectively as possible. Therefore, it is necessary to pay attention to the combination of qualitative and quantitative when designing the indicator system to ensure the independence, representativeness and statisticality of the indicators.

6. Evaluation Index System Construction

The Aba Prefecture Science and Technology Entrepreneurship Evaluation System can be established according to the input and output principles of economics, according to the investment indicators this year and this year. According to the "China Regional Innovation Capability Report-2001" issued by China Science and Technology Development Strategy Research Group, it selects 23 categories of indicators: knowledge creation ability, knowledge flow ability, enterprise technology innovation ability, technology innovation environment, and technology innovation economic performance. 115 specific indicators have already begun to have an evaluation framework. The indicators of the Aba Prefecture Science and Technology Entrepreneurship Ecosystem Evaluation Index System should be based on the actual conditions of the region, using indicators of input and benefit to select indicators to build an indicator system.

Innovation is a systematic project. From the generation of problems to the solution of problems, to the transformation and application of results, this is composed of multiple links, involving the cultivation of innovative ideas, supporting innovation programs, encouraging new products, Protect intellectual property rights, improve the efficiency of results transformation, and expand the application of results. Therefore, these links should be reflected in the construction of the technology entrepreneurship ecosystem evaluation indicators.

Through analysis, the influencing factors affecting innovation and entrepreneurship in Aba area mainly include essential factors, demand status, industrial support, enterprise management, and government guidance. Therefore, when designing the evaluation index system of innovation and entrepreneurship in Aba Prefecture, it should be evaluated from two aspects: input and output. The input mainly includes three aspects: talent input, capital investment and policy input. Output includes scientific and technological achievement output, innovative economic output, and society. Three aspects of benefit output.

According to the above principles of evaluation index system construction, the Aba Prefecture Science and Technology Entrepreneurship Evaluation System is constructed as follows:

1. Number of scientific research participants in regional innovation and entrepreneurship projects (person/year): In the projects in the region and universities in the region, the total number of scientific research personnel participating in the project, the annual increase in the number of students indicates whether the scientific and technological talents in the region are sufficient. The larger the value, the more talents the region attracts, and the more intense the technological innovation activities, the more likely it is to produce results.

2. Number of participating institutions in regional innovation and entrepreneurship projects (number/year): The more research institutes participating in the region, the more projects are invested in innovation and entrepreneurship in the region. The greater the value, the more social innovation and entrepreneurship in the region. Enterprises and research institutes are responsive, and the more likely they are to cultivate new types of companies.

Table 1. The Aba Prefecture Science and Technology Entrepreneurship Evaluation System

	Primary indicator	Secondary indicators	Basic indicator	
Aba Prefecture Science and Technology Entrepreneurship Ecosystem Evaluation Index System	Input indicator	Talent investment	Number of scientific research participants in regional innovation and entrepreneurship projects (person/year)	
			Number of participation in research institutes of regional innovation and entrepreneurship projects (years/year)	
		Funding investment	Government technology grant fee growth rate	
			Financial innovation and entrepreneurship fund growth rate	
		Policy investment	Number of supportive policies for innovative entrepreneurial start-ups (a)	
			Number of incubators introduced by regional innovation and entrepreneurship (a)	
			Regional innovation and entrepreneurship policy awareness rate	
			Regional intellectual property protection, transformation ability satisfaction	
		Output indicator	Output of scientific and technological achievements	Patent evaluation value is more than 100,000
				Number of scientific and technological achievements
	Number of scientific and technological achievements			
	Innovative economic output		Number of high-tech enterprises	
			Value-added rate of industrial enterprises above the scale of high-tech enterprises	
			Number of investment and financing projects	
	Social benefit output		Urban registered unemployment rate decline rate	
			Labor productivity increase rate	
			Startup company registration increase rate	

3. Growth rate of government science and technology appropriation costs: This indicator shows that the more funds are invested in science and technology, the more it can attract a large number of

technology companies and research institutes to participate in local science and technology innovation activities, the more innovative technology and innovative products can be produced. Probability.

4. Growth rate of financial innovation and entrepreneurship funds: This indicator indicates that the more funds are invested in innovation and entrepreneurship, the larger the scale of innovation and entrepreneurship activities, the more comprehensive the service capabilities and the better the service quality.

5. Number of supportive policies for innovative start-ups (individual): This indicator indicates that the more policies the local government gives, the more favorable it is to create a local dual-creation atmosphere, and it is easy to find high-quality projects and provide an entry point for creating new technologies and new products.

6. Number of incubators introduced by regional innovation and entrepreneurship (number): The more the number of incubators, the more comprehensive the subdivision of the incubator industry, indicating that the service function of the region in terms of innovation and entrepreneurship is more comprehensive.

7. Awareness rate of regional innovation and entrepreneurship policy: The awareness rate of innovation and entrepreneurship policy reflects the promotion of entrepreneurship and the evaluation index of policy implementation efficiency in the process of innovation and entrepreneurship development in the current region. The higher the awareness rate, the effective promotion of double-creation work in the region. A good awareness rate makes it easier for local businesses to enjoy government policies.

8. Regional Intellectual Property Protection and Transformation Capability Satisfaction: This indicator is used to indicate whether the current intellectual property protection and achievement transformation capability in the current region is in line with the protection and achievements of intellectual property rights of enterprises and institutions in the region. The demand for transformation is also an important indicator to show the perfect function of the current regional dual-creation service.

9. The value of patent evaluation is more than 100,000: it indicates the number of real and effective results in the region.

10. Conversion of scientific and technological achievements: The higher the index indicates that the region has strong ability to produce results and strong innovation ability.

11. Number of high-tech enterprises: The more high-tech enterprises, the more the proportion of scientific and technological personnel, the investment in research and development of products, and the proportion of science and technology are gradually increasing, indicating that enterprises in the region are gradually approaching technological innovation.

12. Value-added rate of industrial enterprises above the scale of high-tech enterprises: the share of added value of enterprises above the scale of high-tech industries in the value-added enterprises. The greater the value of the indicator, the more value added by the high-tech enterprises in the region, and the higher the level of technological innovation in the region.

13. Number of investment and financing projects: This indicator indicates that in the process of innovation, the new product and new technology output are recognized by the market, the premise of productization can be realized, and it is also the basis for the future development of the region to rely on innovative economy.

14. The rate of decline in urban registered unemployment rate: the ratio of the number of urban registered business personnel and urban unit employed persons, unemployed workers in urban units, individual household heads, urban private owners, individual employed persons, and urban registered personnel. The number of new employed people increases, the better the social economy, and vice versa.

15. Labor productivity increase rate: refers to the average product production per unit time of each employee based on the product value indicator. It is a comprehensive indicator of the production and management level of the enterprise and the technical level and working attitude of the laborers. The higher the value indicates the better the economic development momentum of the region.

16. Increase rate of registration of startups: The more the startups increase, the better the innovation and entrepreneurship in the region, and the more effective the promotion and innovation of the entrepreneurs in the masses.

7. Conclusion

The technology entrepreneurship ecosystem is a complex system. Through analysis and construction of its evaluation index system, it can identify its development bottlenecks, so as to more effectively allocate and share resources and promote the development of regional science and technology entrepreneurship.

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