Literature Review on the Evaluation System of Agricultural Science and Technology Innovation Ability

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Keywords: Agricultural Science and Technology Park, Innovation Ability, Evolution System

Abstract: Since 2001, Relevant Research on the Evaluation of Agricultural Science and Technology Innovation Capability in China Has Been Widely Concerned by Agricultural Enterprises and Researchers At All Levels. with the Implementation of a Series of Research and Development Funds and r&d Projects in Agricultural Science and Technology Parks .the Supportive Policy, Agricultural Science and Technology Parks Have Developed Very Rapidly in Terms of Quality and Quantity, and Have Attracted Extensive Attention from Scholars At Home and Abroad, But At the Root of It, Compared with Agricultural Science and Technology Parks in Developed Countries, China's Agricultural Science and Technology. the Park Started Late, the Level of Agricultural Science and Technology Modernization and Scientific and Technological Innovation Ability is Slightly Weak. the Article Takes the Agricultural Innovation Ability as the Research Object, and the Main Research Methods for the Literature Review and Collation of Domestic and Foreign Literature, Based on the Policy of Realizing the Agricultural Modernization Strategy. Background and Related Theoretical Support, through the Construction of Agricultural Science and Technology Innovation Index System, Summed Up the Relevant Theory on the Evaluation of Innovation Ability of Agricultural Science and Technology Parks.

1. Introduction

According to Statistics of 1513 Agricultural Science and Technology Innovation Policies Issued by the National People's Congress and Its Standing Committee, the State Council and the General Office of the State Council, the Ministry of Agriculture, the Ministry of Science and Technology, the Ministry of Finance and Other Departments between 1978 and 2015, It Can Be Seen That the State Attaches Great Importance to the Agricultural Science and Technology Innovation System. However, the Introduction of These Policies Has Different Degrees on the Income, Patents and Papers of Agricultural Scientific Research Institutions the Number of Achievements and the Transformation of Scientific and Technological Achievements Have Had Different Degrees of Positive Impact [1]. Therefore, the Transformation of Agricultural Science and Technology Innovation Mode Has Come into Being: the Original Agricultural Science and Technology Innovation Mode Has Changed from the Government Led, the Basic Research of Science and Technology as the Source of Science and Technology Application and Promotion, to the Interactive Influence of the Two Forces of Government Led and Public Welfare Demand, Taking into Account the Social Public Welfare Demand and Market Demand, and the Basic Research of Agriculture and the Development of Applied Technology Innovation Mode [2]. in View of the Changes of the Innovation of Agricultural Science and Technology System in China, This Paper Summarizes the Process of the Evaluation of the Innovation Ability of Agricultural Science and Technology System by Collecting Research Literature At Home and Abroad, Hoping to Provide Theoretical Basis for the Evaluation of the Innovation Ability of Agricultural Science and Technology System in the Future.

  DOI: 10.25236/iwass.2019.290

2. Policy Background of Agricultural Science and Technology Innovation Ability

2.1 The Rural Revitalization Strategy

To realize the modernization of agricultural science and technology is to realize the changes of rural social economy and culture. However, to realize the changes, “innovation” plays an important role. Shi Pu believed that the construction of “three parks” is actually to promote the strategy of rural revitalization, improve the supply structure of agricultural elements, and become urban and rural the master of integrated development [3]. In the future research, based on the background of Rural Revitalization Strategy, new requirements are put forward for the research of agricultural science and technology innovation ability in China.

2.2 Agricultural Supply side Structural Reform

“Agricultural supply side structural reform” is to correctly handle the relationship between “plus” and “minus”, which means to adjust the supply structure of agricultural products and change the situation of overcapacity; “plus” can be regarded as the development of agricultural industrialization management mode, through scientific and technological innovation and institutional innovation to improve agricultural efficiency and quality. As an essential achievement transformation platform in agricultural science and technology innovation, agricultural science and Technology Park can represent the “plus” part. Ling Lei It is considered that the agricultural science and technology park is an important breakthrough in the reform of agricultural supply side structure in China. Taking the relevant scientific and technological innovation capacity of Shaanxi Province as the main research object, the entropy weight method and the advantages and disadvantages distance method are used to evaluate it [4].

3. The Related Theories of Agricultural Science and Technology System Innovation

3.1 Growth Pole Theory

Yanlei Xia used the growth pole theory to analyze the polarization effect, comprehensive effect and diffusion effect index system of the park respectively, so as to explore whether the National Park in the Yangtze River delta formed the agricultural economic growth pole and produced demonstration and driving effect on the surrounding agricultural related areas [5].

3.2 Industrial Agglomeration Theory

Relevant scholars apply the theory of industrial agglomeration to the research of innovation ability of agricultural science and Technology Park. Through literature review and practice, it is found that in the region of industry, capital and technology agglomeration, it has a positive effect on the improvement of innovation ability of agricultural science and Technology Park in this region [6].

The construction of evaluation indexes of innovation ability of agricultural science and technology parks and the summary of empirical analysis methods of evaluation of innovation ability of agricultural science and Technology Parks

This paper summarizes the index system types of agricultural science and Technology Park and the empirical analysis methods of innovation ability evaluation of agricultural science and Technology Park, which are AHP, patent analysis, fuzzy AHP, factor analysis, production function model and other types.

3.3 Ahp

Ran Li divides the comprehensive evaluation of agricultural science and technology innovation capacity of Hebei Province into: government management, ecological environment, social benefits, driving capacity, human resources and park development, and calculates the comprehensive score of the park by using the analytic hierarchy process [7].

3.4 Production Function Model

Yanlei Xia uses the production function model to compare the impact of traditional factors and innovation factors on regional economic growth, and sets the dependent variable as the total output, which changes automatically The quantity is traditional factor input (capital and labor input) and innovation factor input (leading enterprise) [8].

3.5 Patent Analysis 3.3 Patent Analysis

Liyuan Xin took the agricultural science and Technology Park in Beijing, Tianjin and Hebei as the research object, collected 1868 patents applied by three academies of Agricultural Sciences from 2012 to 2014 through the patent inquiry and retrieval platform of the State Intellectual Property Office, and analyzed the number of patent applications, development trend and IPC analysis by using patent map [9].

3.6 Fuzzy Analytic Hierarchy Processes

Jianxiang Fu constructs the index system from the perspective of building these five general indexes, and adopts the fuzzy AHP to Qingdao, Shandong Province The agricultural science and Technology Parks in Weihai, Weifang and Weihai are compared horizontally, and the different development and management conditions of different parks are comprehensively evaluated [10].

3.7 Factor Analysis Method

Huaqiang Zhou based on the relevant perspectives of the three functions of agricultural science and technology park (innovation leading function, innovation incubation function and demonstration driving function), extracted common factors by factor analysis method and achieved the purpose of simplifying the index system [11].

3.8 Other Types

Angela Rocío Vásquez-Urriago studied the impact of science and technology parks on innovation cooperation. Will influence factors to the overall company characteristics, innovation in the field of technology, innovation activities as the perspective of the company divides the total 12 indexes, use a tendency index method for regression analysis of the geographical location of the park innovation and cooperation level, through the regression analysis, the 12 indicators to estimate in the park under the influence of geographical position and the possibility of business cooperation, as well as the enterprises brought by the cooperation with the park how productive efficiency [12].

4. Conclusion and Outlook for the Future

According to the above review and summary of domestic and foreign literatures, it can be seen that fuzzy hierarchical analysis is the most widely used method for evaluating the innovation ability of agricultural science and technology parks. Although this method has a strong interpretation of indicators, this evaluation method is too subjective. Mentioned above the body of the collaborative innovation can be divided into colleges and universities and research institutions, science and technology park, enterprise, government and farmers this several parts, and this a few independent innovation main body is not the social entity unit, but there are interaction relationship of the main body, form a cooperative innovation system dynamic factors, clear their main body positioning, ensure the function, is the necessary way to realize the cooperative innovation of science and technology. According to relevant studies, the number of Chinese provinces with a large range of agricultural science and technology innovation ability ranking is small, and most of the provinces remain basically the same. However, how to break this situation? Further discussion is needed on how to evaluate agricultural science and technology parks more accurately and scientifically.

In today's scientific and technological innovation environment, due to the influence on seasonal agricultural products, and the large number of market supply main body now, competition is intense, in the moment of the multilateral market environment using closed innovation already can’t adapt to the current market needs, and for agricultural scientific research institution, Relying solely on

closed innovation can not only meet the financial needs of research and development , also can ‘t adapt to the current market environment, so in the future in the study of the innovation system of agricultural science and technology park, this paper argues that based on from the perspective of open innovation, use the feedback mechanism of the system dynamics, This paper makes a systematic analysis of the interaction among the five subjects of scientific and technological innovation, and establishes a causal relationship model in the hope of providing a practical basis for the study of relevant theories.

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