

Presentation only, Zhao Ya-nan will be attending the conference and make a presentation.

EMPIRICAL RESEARCH ON COOPERATIVE INNOVATION ABILITY OF EQUIPMENT MANUFACTURING ENTERPRISES BASED ON FACTOR ANALYSIS

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Abstract: The equipment manufacturing industry is the basic and strategic industry which is related to the long-term interests of the country. Innovation ability is an important symbol to measure the comprehensive competitiveness of a country or region. The State Council promulgated the "Made in China 2025" in 2015, which pointed out that China's equipment manufacturing industry development policy as "innovation-driven, green development", emphasizing the importance of innovation in the development of equipment manufacturing industry. Equipment manufacturing industry is the basic industries of national economic development and national defense technology and equipment. With the increasing progress of science and technology, the complexity and uncertainty of innovation continue to increase for the production cycle is shortening gradually and the market competition is becoming more and more intense. It is becoming more and more difficult to rely solely on the effective innovation within the equipment manufacturing enterprises. Faced with this grim situation, equipment manufacturers began to explore cooperative innovation model to achieve a better level of innovation, more and more enterprises choose to cooperate with other enterprises or universities, research institutes to achieve knowledge sharing or joint research and development. How to improve the capability of cooperative innovation of equipment manufacturing enterprises and enhance the ability of enterprise development has been widely concerned by academia and the business community. Therefore, it is of great practical significance to evaluate the capability of cooperative innovation of equipment manufacturing enterprises objectively in order to promote the development of regional economy and promote the development of regional economy.

The evaluation method selected in this paper has the following advantages. Factor analysis method has a strong objectivity to obtain the weight of the index based on data analysis. There is a strong comparability between indexes because of less cross information. Firstly, this paper constructs the evaluation system of collaborative innovation ability of equipment manufacturing industry from three aspects: innovation input, innovation cooperation and innovation output, and it selects nine indexes related with cooperation innovation ability of equipment manufacturing industry. It employs factor analysis method to comprehensively evaluate. Then, the evaluation model is established by factor analysis method. In the empirical analysis process of the equipment manufacturing enterprises cooperation innovation ability, the panel data of eight industries in China's equipment manufacturing industry from 2009 to 2014 are used as the research sample, and makes a comparative study on the

—This paper is funded by the International Exchange Program of Harbin Engineering University for Innovation-oriented Talents Cultivation. We also acknowledge anonymous IAMOT reviewers whose constructive feedback helped to improve the quality of this paper.

cooperation innovation ability within the equipment manufacturing industry.

Research shows: The R&D Project Internal Expenses has the greatest contribution to the overall operation factor. The amount of research to increase the project funding to improve the scientific awareness of enterprises, increase cooperation between enterprises innovation, production and research cooperation innovation. Combined with the actual situation, equipment manufacturing enterprises should be appropriate to increase the research project funding and the cooperation between enterprises and research cooperation innovation. Through the empirical analysis, it can provide reference for the improvement of Chinese equipment manufacturing enterprise's cooperation innovation ability, and promote the development process of the cooperation innovation of manufacturing enterprises.

Key word : Equipment manufacturing enterprise, Cooperation innovation ability, Evaluation index system, Factor analysis.