Performance Evaluation of Biotechnology Medical Device Industry Using Fuzzy Multi-Objective Data Envelopment Analysis

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ABSTRACT

In recent years, because of the fast progress of gene decoding , the array picture of the human genome has already been drawn successfully in 2003, under the government's active promotion, encouragement and investment of the hot twine, progressive biotechnologies day by day make the biotechnology industry of Taiwan growing, which already have embryonic form and effect for the first time, but in technology, developed experiences had disparity of a certain degree with the advanced countries of the world. The paper uses the Fuzzy Multi-objects DEA method and the traditional DEA method to analysis of production efficiency of 13 biotechnology medical device manufacturer in Taiwan from 2005 to 2007. Actual example indicates that, the efficiency of (biotechnology) medical device manufacturers in Taiwan has the sign of soaring year by year, among them it is most obvious to improve with ApexBio and Health & Life .

The paper uses the Fuzzy Multi-objects DEA method to analyze the production efficiency of 13 (biotechnology) medical device manufacturers in Taiwan, and the paper analyzes by slack analysis, efficiency analysis, striving direction in order to improve the future of (biotechnology) medical device manufacturer in Taiwan efficiency.

After the actual example, the Fuzzy Multi-objects DEA method is not only superior to the traditional DEA in calculating but also relatively have discriminability in assessing the result, the paper conclude the fuzzy model has the higher practicability and effectiveness even more than the traditional DEA method .

Keywords : Data Envelopment Analysis、Biotechnology Medical device、Performance Evaluation

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