Bi-TODIM METHOD AND ITS APPLICATION IN URBAN LAND USE

EFFICIENCY EVALUATION

ZHANG LEI

Department of Management Science and Engineering, Nanjing University of

Aeronautics and Astronautics, Nanjing, China

ABSTRACT

Considering that some multiple indicator evaluation problems have three characteristics: indicators interact with each other, the value of the indicator is in a bipolar interval, and the psychological behavior of evaluator will have an impact on evaluation results. On the basis of the TODIM method and bi-capacity theory, the Bi-TODIM method was constructed. The bi-capacity of the indicator (set) is taken as the weight, and then the dominance degree and comprehensive dominance degree of each alternative are calculated. Moreover, the properties of comprehensive dominance degree are discussed. Finally, based on the Bi-TODIM method, the land use efficiency of 13 cities in Jiangsu Province was evaluated, and the effectiveness of the method was proved.

KEYWORDS: Bi-Capacity, Bi-TODIM Method, Interactions Between Indicators, Psychological Behavior & Evaluation of Urban Land Use Efficiency