

عنوان مقاله:

A Balancing and Ranking Method based on Hesitant Fuzzy Sets for Solving Decision-making Problems under Uncertainty

محل انتشار:

ماهنامه بین المللی مهندسی، دوره 28، شماره 2 (سال: 1393)

تعداد صفحات اصل مقاله: 10

نویسندگان:

H Gitinavard - *Department of Industrial Engineering, Iran University of Science and Technology, Tehran, Iran*

S.M Mousavi - *Department of Industrial Engineering, Faculty of Engineering, Shahed University, Tehran, Iran*

B Vahdani - *Faculty of Industrial & Mechanical Engineering, Qazvin Branch, Islamic Azad University, Qazvin, Iran*

خلاصه مقاله:

The purpose of this paper is to extend a new balancing and ranking method to handle uncertainty for a multiple attribute analysis under a hesitant fuzzy environment. The presented hesitant fuzzy balancing and ranking (HF-BR) method does not require attributes' weights through the process of multiple attribute decision making (MADM) under hesitant conditions. For the rating of possible alternatives, firstly, they are defined as hesitant fuzzy terms and then converted into hesitant fuzzy sets. Second, an outranking matrix indicates that a possible alternative overcomes the other alternatives regarding to each chosen attribute. Third, the outranking matrix is triangularized which means that we prepare provisional order of possible alternatives or implicit preordering under hesitant conditions. Eventually, the empirical order of alternatives goes through variant operations of balancing and screening that needs continuous application of a balancing axiom to the advantages-disadvantages table. It links incompatible attributes with pair-wise comparisons of the possible alternatives for the multiple attribute analysis. Finally, we present an application example for the supplier selection to show the applicability and feasibility of the proposed HF-BR method in the hesitant fuzzy setting.

کلمات کلیدی:

Ranking and Balancing Method, Multiple Attribute Decision Making, Advantage and Disadvantage Matrix, Outranking Matrix, Hesitant Fuzzy Sets

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/369331>

