

عنوان مقاله:

Higher order hesitant fuzzy Choquet integral operator and its application to multiple criteria decision making

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خلاصه مقاله:

Generally, the criteria involved in a decision making problem are interactive or inter-dependent, and therefore aggregating them by the use of traditional operators which are based on additive measures is not logical. This verifies that we have to implement fuzzy measures for modelling the interaction phenomena among the criteria. On the other hand, based on the recent extension of hesitant fuzzy set, called higher order hesitant fuzzy set (HOHFS) which allows the membership of a given element to be defined in forms of several possible generalized types of fuzzy set, we encourage to propose the higher order hesitant fuzzy (HOHF) Choquet integral operator. This concept not only considers the importance of the higher order hesitant fuzzy arguments, but also it can reflect the correlations among those arguments. Then, a detailed discussion on the aggregation properties of the HOHF Choquet integral operator will be presented. To enhance the application of HOHF Choquet integral operator in decision making, we first assess the appropriate energy policy for the socio-economic development. Then, the efficiency of the proposed HOHF Choquet integral operator-based technique over a number of exiting techniques is further verified by employing another decision making problem associated with the technique of TODIM (an acronym in Portuguese of Interactive and Multicriteria Decision Making).

کلمات کلیدی:

Higher order hesitant fuzzy set (HOHFS), Choquet integral, Multiple Criteria Decision Making

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