Application of a preference relationship in decision-making based on intuitionistic fuzzy soft sets

ABSTRACT

Intuitionistic fuzzy soft set (IFSS) provides more efficient and flexible tool than ordinary fuzzy soft set (FSS) to express decision makers' opinions in real-world decision problems. Until now, different researchers have designed different algorithms for ranking objects in order to select the best option in group decision-making problems under intuitionistic fuzzy soft environment. In this paper, an adjustable algorithm is developed to handle the problem of group decision-making based on a preference relationship of IFSSs. The effectiveness of this approach in comparison with some existing methods is also demonstrated. To achieve the higher level of compatibility with the real-world problems, the proposed algorithm here is extended to the weighted case.