

Decision-Making using Fuzzy Linguistic Hypersoft Set Topology

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Abstract : Language being an abstract system and creative act, is quite complicated as its meaning varies depending on the context. The context is determined by the empirical knowledge of a person, which is derived from observation and experience. About further subdivided attributes, the decision-making challenges may entail quantitative and qualitative factors. However, because there is no norm for putting a numerical value on language, existing approaches cannot carry out the operations of linguistic knowledge. The assigning of mathematical values (fuzzy, intuitionistic, and neutrosophic) to any decision-making problem; without considering any rule of linguistic knowledge is ambiguous and inaccurate. Thus, this paper aims to provide a generic model for these issues. This paper provides the linguistic set structure of the fuzzy hypersoft set (FLHSS) to solve decision-making issues. We have proposed the definition some basic operations like AND, NOT, OR, AND, compliment, negation, etc., along with Topology and examples, and properties. Secondly, the operational laws for the fuzzy linguistic hypersoft set have been proposed to deal with the decision-making issues. Implementing proposed aggregate operators and operational laws can be used to convert linguistic quantifiers into numerical values. This will increase the accuracy and precision of the fuzzy hypersoft set structure to deal with decision-making issues.

Keywords : linguistic quantifiers, aggregate operators, multi-criteria decision making (mcdm)., fuzzy topology

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