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Multi-attribute decision-making method based on continuous linguistic Z-number operator.
(Chinese. English summary) [Zbl 07448789]

Summary: Aiming at the multi-attribute decision-making problem in which the decision information is interval hesitant language, a decision-making method based on continuous language Z-Number operator is proposed. First of all, aiming at the problem that the evaluation language is an interval hesitant language variable, a new language scale function is proposed, based on which the language evaluation value can be transformed into a real number. Secondly, considering the hesitation of decision makers in practice, we propose to use continuous linguistic variables to express probability, obtain continuous linguistic Z-Number operator, and establish a nonlinear programming fixed weight model to calculate the attribute weights of indicators. Furthermore, based on the continuous linguistic Z-Number operator and the fixed weight model, a multi-attribute decision-making method is given. Finally, comparative analysis is carried out through calculation examples to verify the effectiveness of the proposed decision-making method.

MSC:

90B50 Management decision making, including multiple objectives
03E72 Theory of fuzzy sets, etc.

Keywords:
multi-attribute decision-making; interval hesitation number; continuous Z-number operator; criterion weight