MSQ15

A NOVEL METHOD FOR ADDRESSING THE PREFERENCE DISAGGREGATION PROBLEM IN MULTI-CRITERIA DECISION-MAKING

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Abstract

Preference disaggregation methods in Multi-Criteria Decision-Making often face challenges due to inconsistency and cognitive biases. This paper introduces the Best-Worst Disaggregation (BWD) method, integrating the Best-Worst Method into the disaggregation framework to improve consistency and reliability. BWD employs the "consider-the-opposite" strategy, allowing experts to provide two opposite pairwise comparison vectors, which reduces cognitive load and anchoring bias. An optimization model determines the suitable additive value function, and a consistency analysis is used for quantify and improve the reliability of the judgments. BWD is also extended to interval-valued preferences, enhancing applicability under uncertainty. A logistics case study demonstrates BWD's effectiveness in producing reliable rankings aligned with experts' preferences.

Conference Track

Management Science and Quantitative Methods