

## Incomplete Holistic Comparisons in Value Tree Analysis

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**Abstract:**

The applicability of multicriteria decision analysis can be improved through enhanced possibilities of preference elicitation. In this context, we propose a novel approach where the DM may give not only various kinds of incomplete preference statements about the relative importance of attributes or the alternatives' performance levels, but even incomplete holistic preference comparisons among the alternatives. The resulting incomplete preference information defines sets of feasible parameters from which dominance structures and decision recommendations can be obtained. The potential of holistic preference statements is illustrated by an example, and computational results from a series of simulation studies are also given.

**Keywords:**

Multicriteria decision analysis, hierarchical weighting models, incomplete preference information, decision support systems.