

A Stochastic Analytic Hierarchy Process-Based Methodology for Group Decision Making

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Abstract: A multicriteria group decision making process is bounded by the issues of uncertainty/impresiseness, inconsistency, disagreements/non-consensus, incomplete preference information and preference maximization. This study proposed a stochastic analytic hierarchy process-based methodology that addresses these issues by providing a linear programming model that simultaneously maximizes consistency, consensus and preferences of decision makers, and a reward-penalty system for preciseness/impresiseness and completeness/incompleteness of decision makers' preference information. The proposed methodology was tested on actual business setting. Results of the comparison experiments conducted favor the proposed methodology.

Keywords: *MCDM, MCGDM, AHP, group decision making*