Abstract:

We extend different group preference aggregation procedures applied in the Analytic Hierarchy Process (AHP) to multiple-issue decision problems. We demonstrate how existing procedures that are specifically developed for single-issue decisions will generally fail to generate Pareto optimal agreements when applied to multiple issues. By relating these procedures to formal concepts of social choice theory, we develop a utilitarian weighted arithmetic mean method of aggregation that ensures efficiency. Our approach thus provides a theoretical basis for designing the AHP to implement social choice functions in practice.