Decision support for the even swaps process with preference programming

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Abstract: In this paper, we discuss using computer support and interval methods to facilitate the procedural carrying out of the Even Swaps process. We introduce a new related web-based decision support system called Smart-Swaps. It implements, for example, an approach to support different phases of the process by Preference Programming, which is a framework for modeling incomplete information within multiattribute value theory. In the approach, the Even Swaps process is carried out as usual, but in parallel the evolution of the preferences of the decision maker is modeled with Preference Programming. With this model we can provide information to the Even Swaps process to help identify practically dominated alternatives and to find applicable candidate attributes for the next even swap.

Keywords: multicriteria decision analysis, even swaps, preference programming, trade-offs