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SELECTION OF WASTEWATER TREATMENT ALTERNATIVE: SIGNIFICANCE OF CHOOSING MADM METHOD

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Abstract

Five multiple-attribute decision-making (MADM) methods are used to rank the four most commonly used wastewater treatment technologies in India using pre-defined set of criteria and their indicators. Results show that it is difficult to get similar ranking using different MADM methods for equal set of weights. However, for varying weights all MADM methods generated similar ranking. It is found that in wastewater treatment alternative selection problem, it is essential to define set of weights considering priorities of the decision situation. Emphasis on a rational structuring of decision-making problem is more required than searching for more sophisticated MADM methods. TOPSIS is found to be the most suitable MADM method as it considers ideal and non-ideal solutions simultaneously to select appropriate wastewater treatment alternative.

Key words: compromise programming, multiple-attribute decision making, outranking methods, TOPSIS, wastewater treatment

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