

The Integrated Combined Compromise Solution Method and Distance-Based MCDM Model with Application

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Abstract

This research compares the Combined Compromise Solution MCDM Method with some other known Multi-Criteria Decision-Making methods. We also propose an improved form with a new integration function based on a nonlinear optimization programming model with maximum kurtosis to the existing model. We also extend Ye and Li's fuzzy distance base model to include the centered possibilistic variance as one of the essential elements in calculating the relative closeness coefficient for alternatives in the decision-making process. The possibilistic model proposed by Ye and Li deviates in principle from the theory of possibility theory as formulated by Carlsson and Fuller. Towards the end of the paper, we discuss an approach to select the best Covid Vaccine within a pool of various other competitive, equally efficient vaccines.

Keywords

Compromise, Solution, Covid, Vaccine, MCDM