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Summary: Bidding decision is the primary problem that construction enterprises must face and solve in market competition. Based on the analysis of the bidding risk factors, this paper constructs the TOPSIS bidding decision model according to the characteristics of the bidding risk. Firstly, using AHP and entropy to determine the subjective and objective weights. Then the game aggregation model is used to combine the subjective and objective weights. Secondly, using the TOPSIS method which is close to the ideal solution, the bidding model is constructed to make the bidding decision. Finally, combined with the engineering example and using TOPSIS bidding decision model to optimize the bidding project, we verify the rationality and operability of the model.

MSC:

90B50 Management decision making, including multiple objectives
90C08 Special problems of linear programming (transportation, multi-index, data envelopment analysis, etc.)
91B26 Auctions, bargaining, bidding and selling, and other market models

Keywords:
bidding decision; analytic hierarchy process; information entropy; game aggregation model; TOPSIS method