

## The subcontractor selection practice using ann-multilayer

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### Abstrak

The practice of subcontracting selection emphasizes two important goals: the company's strategic goal to maximize profits by partnering with subcontractors and the project's operational goal for obtaining qualified subcontractors. Both goals are achieved by formulating the best multi-criteria weights. This is not easy to implement due to differences in subjectivity, viewpoint, and other consideration of assessors, but prioritizing the criterion weights can reduce these differences. This study presents an ANN (Artificial Neural Network) with the ability to generalize data. The purpose of the study is to develop an ANN model for subcontracting selection and to identify significant criteria related to the company's strategic goal. The initial training of the proposed ANN model utilized 40 subcontractor selection datasets containing data in the form of a subcontractor selection scheme consisting of 20 criteria and 5 major groups. Training of ANN model was successful with MSE learning at  $1.37269e-7$ , MSE validation at 0.07985, and epoch 600 to 800. The quotation price is the significant criterion of the selection, and it has a great outcome for the contractor strategic goal. The interaction between the subcontractor selection practice and the ANN model shows that the ANN has an important role in the subcontractor selection practice.