

Special Research Studies Title	An Application of Neural Network for Cost Estimation Model of Highway Project
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Abstract

One common problem of cost estimation is inaccuracy since estimators normally use their experience rather than objective evidence to estimate. To reduce this problem, estimators should utilize historical project data to effectively obtain accurate and correct project estimated cost.

The objective of the research is to apply a neural network to develop a cost estimation model of highway projects. Fourteen cases of highway projects in Thailand have been used as the source of cost data. Simplex optimization technique is used to determine weights of neural network. The weights that produced the best cost prediction will make the optimum cost estimation model. This research limits the error of cost data to be equal or less than 1.0 percent. The assumption is that the error between cost estimation from the neural network model and estimated cost should be within -10 percent to +10 percent. This neural network model can be used to estimate cost of future projects. In addition, this research includes the method for testing of the model and results showed that they are acceptable.

Keywords : Cost Estimation / Neural Network / Highway Projects / Model / Weight