Preliminary cost estimation using regression analysis incorporated with adaptive neuro fuzzy inference system

Yusuf Latief, author

Abstrak

Preliminary cost estimates play an important role in project decisions at the beginning of design phase of construction project under a limited definition of scope and constraints in available information and time. This study proposes a new approach of preliminary cost estimation model using regression analysis incorporated with adaptive neuro fuzzy inference system (ANFIS). Regression analysis (RA) is used for determination of the significant parameters as input variables in ANFIS model. Datasets of 55 low-cost apartment projects in Indonesia were compiled to demonstrate the advantage of the proposed method. The mean absolute percent error (MAPE) of testing data of the proposed model is 3.98% whereas the MAPE of RA and neural network (NN) models are, respectively, 6.92% and 10.12%, thus indicating better accuracy performance of the proposed model over the latter ones.