

Construction tender price estimation standardization (TPES) in Malaysia: modeling using fuzzy neural network

ABSTRACT

Purpose: The pre-tender estimation process is still a hazy and inaccurate process, despite it has been practiced over decades, especially in Malaysia. The methods evolved over time largely depend on the amount of information available at the time of estimation. More often than not, the estimate produced during the pre-tender stage is far more than the tender cost of the project and sometimes, it is perilously underestimated and caused major problems to the client in the monetary planning. The purpose of this paper is to determine the most influential factors on the deviation of pre-tender cost estimation in Malaysia by conducting a survey. **Design/methodology/approach:** Fuzzy logic, combined with artificial neural network method (fuzzy neural network) was then used to develop an estimating model to aid the pre-tender estimation process. **Findings:** The results showed that the model is able to shift the cost estimation toward accuracy. This model can be used to improve the pre-tender estimation accuracy, enabling the client to take the necessary early measures in preparing the funding for a building project in Malaysia. **Originality/value:** To the authors' knowledge, this is the first study on tender price estimation standardization for a construction project in Malaysia. In addition, the authors have used factors from literature for the model, which shows the thoroughness of the developed model. Thus, the findings and the model developed in this study should be able to assist contractors in coming out with a more accurate tender price estimation.

Keyword: Project management; Decision support systems; Estimating; Construction planning; Questionnaire survey