A Fuzzy-based Risk Model for Construction Project Management

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ABSTRACT

Construction industry involves complex and challenging process associated with the risk of injury, death and property loss. Experts from different departments work together to develop a good management system in order to successfully complete a construction project. This paper presents a model of risk analysis using fuzzy logic to assess the risk involved in construction projects. The uncertainties related to cost, time and quality in the project is handled by the fuzzy logic that is one of the methods dealing with uncertainties in risk analysis. The model was validated using a real project. The test results demonstrated the plausibility of the model for the risk analysis in a real scenario. Using this model, one can prioritize and rank all risk factors in a construction project. Thus, the project managers and leaders can appropriately take precautions to avoid the risk. The proposed model of fuzzy-based risk analysis simplifies the risk management process, which helps the decision makers and the experts to monitor and to control the project, and ultimately, to meet the satisfaction of stakeholders.

KEYWORDS: Component, Construction Project Management, Fuzzy Logic, Risk Analysis, Modeling and Simulation

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