

Risk Prioritization in Tunneling Construction Projects

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Abstract : There are a lot of risks that might crop up as a tunneling project develops, and it's crucial to be aware of them. Due to the unexpected nature of tunneling projects and the interconnectedness of risk occurrences, the risk assessment approach presents a significant challenge. The purpose of this study is to provide a hybrid FDEMATEL-ANP model to help prioritize risks during tunnel construction projects. The ambiguity in expert judgments and the relative severity of interdependencies across risk occurrences are both taken into consideration by this model, thanks to the Fuzzy Decision-Making Trial and Evaluation Laboratory (FDEMATEL). The Analytic Network Process (ANP) method is used to rank priorities and assess project risks. The authors provide a case study of a subway tunneling construction project to back up the validity of their methodology. The results showed that the proposed method successfully isolated key risk factors and elucidated their interplay in the case study. The proposed method has the potential to become a helpful resource for evaluating dangers associated with tunnel construction projects.

Keywords : risk, prioritization, FDEMATEL, ANP, tunneling construction projects

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