

## Assessing safety risk in electricity distribution processes using ET & BA improved technique and its ranking by VIKOR and TOPSIS models in fuzzy environment

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### Abstract

**Introduction:** Electrical industries are among high risk industries. The present study aimed to assess safety risk in electricity distribution processes using ET&BA technique and also to compare with both VIKOR & TOPSIS methods in fuzzy environments.

**Material and Method:** The present research is a descriptive study and ET&BA worksheet is the main data collection tool. Both Fuzzy TOPSIS and Fuzzy VIKOR methods were used for the worksheet analysis.

**Result:** Findings revealed that overhead low and medium voltage power distribution networks had the highest risk among the other network types of transmission and distribution of electricity. Also, it was found that TOPSIS and VIKOR methods are appropriate to rank the safety risks with somehow similar results.

**Conclusion:** The height and electricity are of the main causes of accidents in electricity transmission and distribution industry which caused the overhead power networks to be ranked as high risk. Application of decision-making models in fuzzy environment minimizes the judgment of assessors in the risk assessment process.

**Keywords:** Safety Risk, ET & BA, Fuzzy VIKOR, Fuzzy TOPSIS, Electrical Industry

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