

Ranking occupations in high-rise construction workshops from the view point of safety culture using FTOPSIS-FAHP model

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Abstract

Introduction: Safety in construction needs not only operating the executive laws and instructions but also the safety culture of all the workers in workshops. Safety culture is a factor by which all the workers are committed to having a positive share in the safety of their coworkers and themselves. Therefore, the aim of this study is identification of safety culture factors and ranking occupations in jobsites in order to improve the safety condition and promote the safety culture of high-rise projects.

Material and Method: In this descriptive-analytical study, first, safety culture criteria in construction projects are identified by a literature review. Then, 8 factors of safety culture are weighted using fuzzy analytic hierarchy process. Finally, 10 different occupations in high-rise workshops are ranked from the point of view of safety culture using fuzzy TOPSIS method.

Result: Results of ranking the criteria show that the most important criteria are safety attitude, supervision, policy of organization and safety training. Moreover, in high-rise construction the site superintendent and supervisor occupations have the highest and laborers have the lowest safety culture.

Conclusion: In this study, after evaluating different construction occupations by hybrid FTOPSIS-FAHP method, the results are compared with the results of previous researches. Here, it was found that the findings are consistent with previous studies. On the other hand, low level of safety culture of construction laborers among the investigated occupations shows weakness in safety training and attitude; hence, the factors such as more safety supervision and training must be considered in order to create a positive safety culture for the workers.

Key words: *Construction Safety, Safety Culture, High-Rise Projects, Fuzzy Analytical Hierarchy Process, Fuzzy TOPSIS*

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