Home
IERC Sessions
Applied Solutions Sessions
Full Author Index
Sponsors
Exhibitors
About/Contact IIE
CD Tech Support

IERC Conference

Back to Session: Analytics

Comparison of Fuzzy AHP and AHP With Statistic Approach

Liyuan Zhang (UNL)

Analytic Hierarchy Process (AHP) is a robust approach for decision making under complex criteria. Unfortunately, decision makers may express their opinions differently and arbitrarily, giving rise to uncertainty in the ranking of alternatives. Fuzzy AHP is developed and then applied under those fuzzy circumstances to reduce the uncertainty. This paper compares Fuzzy AHP with classical AHP by statistic approach. This paper aims at finding out how two critical factors, the pairwise comparison value of AHP and the fuzzy value range of Fuzzy AHP, affect the differences between Fuzzy AHP and AHP. Simulations for the two approaches are performed on the basis of a series of randomly generated data. Then based on the simulation results, three linear regression models using SPSS are conducted for this comparison. Finally, examples are provided to demonstrate the effects of these two factors on the difference.