Abstract

There is a growing interest in university academic staff selection since the quality of staff has a direct influence on any organization’s effectiveness. The process of selecting suitable academic staff for employment is complex and involves taking multiple criteria into consideration for good decision making. Analytic Hierarchy Process (AHP) is a Multi-Criteria Decision Making (MCDM) model for dealing with decision making problems affected by several conflicting factors. It is useful for selecting the best among alternatives based on certain criteria. However, academic staff selection also contains uncertainties which pose another problem, since the AHP lacks the ability to deal with imprecise and subjective judgment in its pair-wise comparison process. This problem can be overcome by the use of AHP model with fuzzy logic, called Fuzzy AHP model, where triangular fuzzy numbers (TFNs) and linguistic variables are used to achieve better accuracy and consistency in the decision makers’ (DM) judgment. A system architecture is developed for problem solving using this model. This paper uses Chang’s synthetic extent analysis with TFNs to improve human experts’ decision making when recruiting by generating a range of values to incorporate DMs’ uncertainty, instead of a crisp value. Numerical example
using three alternative candidates based on these criteria: work experience, academic background, and individual skill is presented. The result indicates that the alternative with the highest normalized weight is the most suitable candidate to be selected for employment. This work could be very useful to university establishment and to any other organization that may be interested in fair and efficient recruitment exercise.

References


Index Terms

Computer Science
Fuzzy Systems

Keywords

MCDM, Staff Selection Process, Fuzzy AHP, Triangular Fuzzy Numbers & Synthetic Extent Analysis