Abstract

Teacher selection is a group decision-making process under multiple criteria involving subjectivity, imprecision, and vagueness, which are best represented by intuitionistic fuzzy sets. An intuitionistic fuzzy set, which is characterized by membership function (degree of acceptance), non-membership function (degree of rejection) and the degree of indeterminacy or
the degree of hesitancy, is a more general and suitable way to deal with imprecise information, when compared to a fuzzy set. The purpose of this study is to develop an intuitionistic fuzzy multi-criteria group making method with grey relational analysis for teacher selection in higher education. Intuitionistic fuzzy weighted averaging operator is used to aggregate individual opinions of decision makers into a group opinion. Eight criteria obtained from expert opinions are considered for selection process. The criteria are namely academic performances, teaching aptitude, research experience, leadership quality, personality, management capacity, and values. Weights of the criteria are obtained by using a questionnaire. The weights of decision makers are considered as equal i.e. their importance are equal. The rating of an alternative with respect to certain criteria offered by decision maker is represented by linguistic variable that can be expressed by intuitionistic fuzzy sets. Grey relational analysis is used for ranking and selection of alternatives to constitute a panel of selected candidates. An educational problem for teacher selection is provided to illustrate the effectiveness of the proposed model.

Reference


Index Terms

Computer Science
Fuzzy Systems
Key words

Intuitionistic Fuzzy sets

Multi Criteria Group Decision-Making

Grey Relational Analysis

Grey System Theory

Grey Relational Coefficient