Non-Numeric Method for Pairwise Fuzzy Group-Decision Analysis

In this article, we propose a non-numeric method for pairwise group-decision analysis based on fuzzy preference relations. The proposed method expresses and processes the preference relations non-numerically. The computation processes are relatively simple and fast we apply our method for selecting the most prospective new agro-industries to be implemented by multi-corporate company. Moreover, in the application we develop a procedure consisting of 4 stages: (1) a brain-storming process for alternatives and criteria identifications, (2) a pre-selection of prospective alternatives using modification of fuzzy Delphi method, (3) a pre-selection of the significant criteria by using a non-numeric pairwise fuzzy group-decision analysis. The final results are compared with results obtained by a semi-numeric method. The proposed method is suitable for group-decision making cases in which a full consensus is the most important role in selecting the alternatives.