

A Mixed Expert Evaluation System and Dynamic Interval-Valued Hesitant Fuzzy Selection Approach

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Abstract : In the last decades, concerns about the environmental issues lead to professional and academic efforts on green supplier selection problems. In this sake, one of the main issues in evaluating the green supplier selection problems, which could increase the uncertainty, is the preferences of the experts' judgments about the candidate green suppliers. Therefore, preparing an expert system to evaluate the problem based on the historical data and the experts' knowledge can be sensible. This study provides an expert evaluation system to assess the candidate green suppliers under selected criteria in a multi-period approach. In addition, a ranking approach under interval-valued hesitant fuzzy set (IVHFS) environment is proposed to select the most appropriate green supplier in planning horizon. In the proposed ranking approach, the IVHFS and the last aggregation approach are considered to margin the errors and to prevent data loss, respectively. Hence, a comparative analysis is provided based on an illustrative example to show the feasibility of the proposed approach.

Keywords : green supplier selection, expert system, ranking approach, interval-valued hesitant fuzzy setting

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