

عنوان مقاله:

Providing a Fuzzy Expert System to Assess the Maturity Level of Companies in Manufacturing Excellence in the Food Industry of Iran

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خلاصه مقاله:

This study seeks to develop a fuzzy expert system to help managers in assessing their effectiveness and position of their business on the manufacturing excellence track. Assessment process is multi-dimensional in nature and there is a relationship between the different variables of the system. In addition, both quantitative and qualitative variables as well as the uncertainty in the statements of experts must be considered in the evaluation process. Fuzzy DEMATEL technique complies with these requirements by respecting the interrelation between the factors and by converting the qualitative judgments into quantitative values for decision. Due to these features, this technique is used in this study as the best technique for developing the decision tool. Evaluation criteria were identified through a literature review and interviews with experts. Multiple pairwise comparisons were performed to determine the weights of these criteria. Then, these weights were used to build If-Then rules of decision system. This reduced the supernumerary rules of the system, and provided a more real If-Then rule base. The decision support tool, presented in this study, enables decision makers to assess manufacturing excellence from different aspects such as External Excellence (EE), Internal Excellence (IE) and Technological Excellence (TE). The results of the implementation of this fuzzy expert system in Zar-Macaron Company (as a case study) were satisfactory

کلمات کلیدی:

Fuzzy Logic, Expert System, F-DEMATEL, Manufacturing Excellence

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