# VENDOR SELECTION IN THE CONTEXT OF E-MANUFACTURING USING HIERARCHAL FUZZY TOPSIS – ROC ALGORITHM

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## Abstract

E-Manufacturing is the concept, being developed rapidly for the last decade and which differs from traditional manufacturing by its characteristics. As because supplier selection criteria, evaluation supplier will always plays vital role in an organization profits and the problem is identified in the e-manufacturing arena. In the literature, researches have used various Multi Criteria Decision Models (MCDM), AHP, ANP, Fuzzy AHP, Fuzzy ANP, and Fuzzy TOPSIS in the context of traditional manufacturing only. In fact Technique for Order Performance by Similarly to Ideal Solution (TOPSIS) is one of the known classical MCDM which maximize benefit criteria and minimizes cost criteria with its Positive ideal solution. Also Hierarchical Fuzzy TOPSIS (Taghi et al 2008) proposed to evaluate suppliers and criteria. In the proposed work, a framework is  proposed to evaluate criteria and suppliers in the context of E-Manufacturing that is a modification made in Taghi et al 2008, where hierarchical process is converted into elementary clusters using based on the interdependency of one cluster on other and then  Rank Order Clustering(ROC) algorithm is used for ranking the clusters. TOPSIS is then used to find Ideal solution. In the current work decisions of Strategic Sourcing Group (SSG) from industries (differs in Mfg. styles) have taken into consideration while evaluating criteria and analysis is made over Criteria required in the context of E-manufacturing with SSG, also in ranking the criteria.