

Application of Fuzzy Analytical Hierarchical Process in Evaluation Supply Chain Performance Measurement

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Abstract : In modern trends of market, organizations face high-pressure environment which is characterized by globalization, high competition, and customer orientation, so it is very crucial to control and know the weak and strong points of the supply chain in order to improve their performance. So the performance measurements presented as an important tool of supply chain management because it's enabled the organizations to control, understand, and improve their efficiency. This paper aims to identify supply chain performance measurement (SCPM) by using Fuzzy Analytical Hierarchical Process (FAHP). In our real application, the performance of organizations estimated based on four parameters these are cost parameter indicator of cost (CPI), inventory turnover parameter indicator of (INPI), raw material parameter (RMPI), and safety stock level parameter indicator (SSPI), these indicators vary in impact on performance depending upon policies and strategies of organization. In this research (FAHP) technique has been used to identify the importance of such parameters, and then first fuzzy inference (FIR1) is applied to identify performance indicator of each factor depending on the importance of the factor and its value. Then, the second fuzzy inference (FIR2) also applied to integrate the effect of these indicators and identify (SCPM) which represent the required output. The developed approach provides an effective tool for evaluation of supply chain performance measurement.

Keywords : fuzzy performance measurements, supply chain, fuzzy logic, key performance indicator

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