

A Modified Failure Mode and Effect Analysis

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Abstract

Our paper, investigate the disadvantages as well as advantages of current tools of Failure Mode and Effect Analysis (FMEA). It becomes crucial to keep advantages and overcome the disadvantages of basic FMEA-tool. Firstly, this study based on advantages and disadvantages of FMEA selected tool, Modifies the tool for monitoring risk priority numbers of failure modes with application of multi-approach group decision making. An approach; considering vagueness and uncertainty; utilized in the second phase of this research. Fuzzy set theory is widely suggested for our aimed objective of the second phase of current research attempt. So, FMEA; based on fuzzy set theory; modified in this research for analyzing risk priority number of characteristics in failure modes. In a case-study attempt; to verify the validity of the result of this study; the modified FMEA is compared with the basic FMEA-tools to see the difference in performance.

Keywords

FMEA, Fuzzy set, Risk Priority Number, Vagueness, Uncertainty.

Biography

Shahryar Sorooshian, is senior lecturer in faculty of Technology, Universiti Malaysia Pahang. He earned his B.Sc, M.Sc, and PhD in Industrial Engineering. He has published books, journals and conference papers. He is member of editorial board in some scientific journals and conferences. His research interests include operational management, management engineering, and Business modeling.

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Ali Asghar.A.J was born in Talafer/Iraq in 1971. In 1995, he obtained his B.SC from Musol University/Iraq, Faculty of Computer Science and Mathematics. In 2005, his M.SC from University of Technology/Iraq, Faculty of Applied Science. The PhD obtained from university Malaysia Pahang/ Malaysia in 2012. His interest in Applied Science and Operation Research. He has teaching experience more than 16 years in several universities and Colleges in teaching many subjects under computer science, operation research, Optimization, and Mathematic.