

Applying fuzzy ISM to FMEA

陳日光, 李友錚

Technology Management

Management

ycl@chu.edu.tw

Abstract

Abstract: Traditionally, the corrective action is in the order from Risk Priority Number (RPN) viewpoint in FMEA, but many scholars questioned the RPN method, and proposed several new methods to improve. However, these methods are only evaluated from the risks viewpoint while ignoring the viewpoint of corrective actions. Implementing the corrective actions just by in sequence or by randomly, it may not obtain the excellent overall effect. Hence, this study aims to develop a Fuzzy Interpretive Structural Model (ISM) to evaluate the structure of hierarchy and interdependence of corrective action, thus sort their order. This method not only taking account of the relationship of hierarchy and even interdependence of the corrective action to fit in with real complicated situation, but also expand the decision making of FMEA from risk viewpoint only to the utility of corrective action viewpoint. Via the case study of Surface Mounting Technology (SMT) process improvement, to verify the feasibility and effectiveness of this method.

Keyword : RPN; FMEA; ISM; Fuzzy.