

Risk priority evaluation by ANP in failure mode and effect analysis

陳日光, 李友錚

Technology Management

Management

ycl@chu.edu.tw

Abstract

FMEA has been widely adopted and has become standard practice in many manufacturing companies and service industries, even some special domains. Traditionally, to utilize the technology of FMEA to improve the decision is in the order from the bigger Risk Priority Number to the smaller ones, but many scholars questioned the RPN method, and proposed some new methods to improve. However, these methods do not consider the interdependence between the causes of failure and current method of control, and the current method of control may interact with the cause of failure. Therefore, these old methods may decrease the risk of certain failure mode, but may not eliminate the overall risks, even increase it. Hence, the research advances to estimate the weights of severity (S), occurrence (O) and detection (D), and get the new risk assessment data, by which to decide the priority of improvement, then to improve the above shortcomings. At last, the paper proves the method does decrease the overall risk by an actual case, thus to verify the feasibility and effectiveness of the method.

Keyword : RPN; FMEA; ANP