Examining Supplier Risk Profiles and Supply Networks using Bayesian Network with Uncertainty

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Abstract: This paper addresses the risk assessments of suppliers' risk by using Bayesian networks. The purpose of this article is to identify the risk events and risk categories, examine the risk profiles of supply networks under uncertainty, and to improve the methodologies of identifying risk events. The Bayesian network is the risk assessment model used to evaluate the risks of each supplier within the supply network. An unknown probabilistic entity was included in the risk analysis for the vendor's profiles. Monte Carlo simulation was utilized for this purpose to determine the revenue impact of each supplier under uncertainty.

Keywords: supplier selection; Bayesian Belief Network; Monte Carlo simulation; Supply chain risk management