

A Risk Averse Model By Integrating TCT and FMEA for Information Technology
Outsourcing: An Empirical Study on Photovoltaic Industry

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Abstract

The outsourcing strategy on information technology (IT) is a key factor to enhance core business operation, however the businesses' practice in IT outsourcing management often results in unexpected risk towards the overall supply chain management. Although Transaction Cost Theory (TCT) is crucial to explain business' outsourcing decisions, it focuses on strategy risk view. On the other hand, Failure Mode and Effects Analysis (FMEA) has been widely used for operational risk assessment in manufacturing, but missing from literature is its application in IT outsourcing. Therefore, the main purpose of this study is to integrate TCT and FMEA into a Risk Averse model based on Quality Function Deployment technique for IT outsourcing decision. In view of the rise of awareness of green energy industry in recent years, an empirical analysis of photovoltaic industry was conducted. By using the questionnaire survey, the results show that TCT can help firms understand strategy risks in IT outsourcing decisions from uncertainty, asset specificity and frequency, and the FMEA further helps clarify the risks by severity, occurrence and detection for IT system operations. Overall, the proposed model provides businesses with helpful guidelines for governance mechanism selections to IT outsourcing risks averse.

Keyword : Keywords: information technology outsourcing, Transaction Cost Theory, Failure Mode and Effects Analysis, governance mechanism, photovoltaic industry