

Green Supplier Selection under Risk Assessment

Emre Çalışkan and Erdem Aksakal

Department of Industrial Engineering

Gazi University

Ankara, TURKEY

ecaliskan@gazi.edu.tr, eaksakal@gazi.edu.tr

Abstract

Rising population and increasing industrial development began to affect our world's environment in negative way. In order to avoid the effect of this negative situation "being sensitive to the environment" has begun to be an important issue. In this sense the green concept has become very popular in recent years because green is associated with vivacity and life in most of the countries. The green concept is also very popular and important for the manufacturing firms on behalf of the sustainability of them. With increasing concern toward environmental protection and the sustainability of the manufacturing firms, Green Supply Chain Management (GSCM) found as one of the approaches in solving related issues. As a subcomponent of GSCM, green supplier selection is a new, developing and easy to apply concept that can be used by all size of firms. In this study, a comprehensive evaluation model is constructed to select a suitable green supplier selection for a manufacturing firm in Turkey under supply chain risk factors. The model incorporates DEMATEL method and mathematical modelling. DEMATEL method is used for determining the weights of risks which will be a constraint in model and mathematical model is used for selection process.

Keywords

Green Supplier Selection, Risk, DEMATEL, Mathematical Modelling

Biography

Emre Çalışkan is a Dr. Research Assistant at Gazi University, Ankara, Turkey. He earned B.S. in Industrial Engineering from Gazi University, Turkey, Masters in Industrial Engineering from Gazi University, Turkey and PhD in Industrial Engineering from Gazi University. He has published journal and conference papers. His research interests include supply chain management, logistics and optimization.

Erdem Aksakal is a Research Assistant in Engineering Faculty at Gazi University, Ankara, Turkey. He earned B.S. in Industrial Engineering from Çankaya University, Turkey, Masters in Industrial Engineering from Gazi University, Turkey and still PhD student in Industrial Engineering at Gazi University. He has published journal and conference papers. His research interests include work study, ergonomics, human resource management and Multi-Criteria Decision Making.