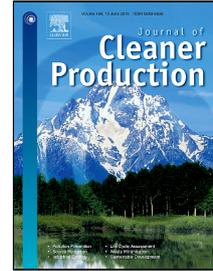


Accepted Manuscript

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PII: S0959-6526(18)31132-6
DOI: 10.1016/j.jclepro.2018.04.105
Reference: JCLP 12686
To appear in: *Journal of Cleaner Production*
Received Date: 24 October 2017
Revised Date: 09 April 2018
Accepted Date: 11 April 2018

Please cite this article as: Huai-Wei Lo, James J.H. Liou, Her-Shing Wang, Yi-Song Tsai, An integrated model for solving problems in green supplier selection and order allocation, *Journal of Cleaner Production* (2018), doi: 10.1016/j.jclepro.2018.04.105

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An integrated model for solving problems in green supplier selection and order allocation

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Abstract

Green purchasing is a critical factor in sustainable enterprise development, and it often affects a company's business performance and environmental protection practices. An enterprise must have an appropriate assessment model to address the complexities of green purchasing. Most green purchasing studies have focused on the use of green criteria in the selection of suppliers to develop sustainable operations. By contrast, there have been few articles on green supply chain management discussing both green supplier evaluation and order allocation. This study proposes a novel model that integrates the best-worst method, modified fuzzy technique for order preference by similarity to ideal solution (TOPSIS), and fuzzy multi-objective linear programming to solve problems in green supplier selection and order allocation. We demonstrated the proposed method using actual data provided by an electronics company. The results indicate that this model can effectively evaluate the performance of green suppliers and can also optimize order allocation for qualified suppliers.

Keywords: green supplier selection, BWM, modified fuzzy TOPSIS, FMOLP, order

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