

An evaluation model for green and low-carbon suppliers

李欣怡, 康鶴耀, 林俊宇, 吳欣蔚

Technology Management

Management

amylee@chu.edu.tw

Abstract

Under a conventional supplier evaluation, cost, on-time delivery and quality are treated as the most important factors. However, in today's increasingly environmental conscious market with growing demands of green products, more and more firms are aiming to manufacture green products to reduce the damage to the environment and to limit the use of energy and other resources at any stage of its life, including raw materials, manufacture, use, and disposal. Thus, a firm needs to select the right suppliers that not only can satisfy the basic requirements, such as cost and quality, but also can provide green and low-carbon materials. The goal of this research is to construct a green and low-carbon supplier evaluation model. The criteria to evaluate green and low-carbon suppliers are analyzed first, and the most important ones are selected. Fuzzy analytic network process (FANP) model is constructed to evaluate various aspects of suppliers. By applying the model, the manufacturer can find the most suitable suppliers for cooperation. Goal programming (GP) is applied next to allocate the most appropriate amount of orders to each of the selected suppliers.

Keyword : Suppliers: Low-carbon: Fuzzy analytic network process: Fuzzy set.