

TFT-LCD SUPPLIER SELECTION BY DOWNSTREAM MANUFACTURER USING FUZZY MULTI-  
CHOICE GOAL PROGRAMMING

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Abstract

A good supply chain relationship is essential for a company to survive and to acquire reasonable profit in today's highly competitive global environment. Only very few large companies can and are willing to vertically integrate from the design stage to the final distribution of the entire supply chain. Most companies focus on their specialized functions and to cooperate with upstream or downstream companies. As a result, supplier selection is important for maintaining a certain degree of strategic alliance. This paper aims to develop a fuzzy multi-choice goal programming (FMCGP) model to help downstream companies to select thin film transistor liquid crystal display (TFT-LCD) suppliers for cooperation. First, fuzzy analytic hierarchy process (FAHP) is applied to analyze the importance of multiple factors by incorporating experts' opinion. Next, multi-choice goal programming is used to consider the limits of various resources and to formulate the constraints. From the experimental design and examination, we shall testify that the proposed model not only can consider multi-choice goals, decision making behavior and limit of resources, but it can also allocate the purchase among the selected supplier(s).

Keyword : Supplier selection, Performance, TFT-LCD, Multichoice goal programming, Fuzzy analytic hierarchy process