ANP應用於建設方案評選模式建構之初探

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摘要

Due to the impact of economic condition in recent years, the construction business is becoming a high-risk and low-profit industry, and the selection of construction projects is the key factor leading to the success or failure for a construction firm. Therefore, how to select the best project is one of the most important issues for the industry development. A construction project involves many elements, such as design, cost and finance, and these elements have impact to each other. As a result, the selection of a construction project is a multi-attribute decision making problem. In the past, the construction project selection was generally done by the decision makers based on their past experience and intuitive judgment, but such a decision process lacked an objective basis. Therefore, this research bases on the demand of the market and the specialized field of the company and uses the analytic network process (ANP), which can consider both quantitative and qualitative information and study the interrelationship among factors, to solve the construction project selection problem. The framework of this research is to build a project selection model based on the model proposed by Cheng & Li (2005) to consider the current internal operation of a firm, and use the benefits, opportunities, costs and risks (BOCR) merits proposed by Saaty (1996) as the basic criteria of network. The results shall show that the involvement of managers in related departments in decision making will lead to a more objective and superior decision than by the traditional way when the decision is made solely by one person. In addition, the proposed model that applies ANP and BOCR merits will be efficient in evaluating alternatives in related industries.

關鍵字：Construction projects, BOCR, ANP, Multi-criteria decision making problem.