

**UNIVERSITI TEKNOLOGI MARA**

**SUPPLIER SELECTION DECISION  
SUPPORT MODEL:  
A CASE STUDY OF GIANT  
HYPERMARKET IN SELANGOR**

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## ABSTRACT

Increased global competitiveness in supply chain foresees the significance of supplier selection with radical changes in decision-making process. Uncertain situation in purchasing, such as supplier selection, makes supermarket relies on multiple criteria to make decision. Recent approaches of supplier selection implemented by supermarket are still practicing a traditional decision-making process, using experience and personal judgment to decide on the supplier. Conflict of interest occurred when personal history is influenced by individual decision by decision makers. Hence, there are four types of multi criteria decision-making (MCDM) methods to solve decision problem and one of the decision models under MCDM is analytical hierarchy process (AHP), developed by Saaty (1980), is a tool for decision-making process continuously be the extensively decision-making theory to be employed. AHP has been widely exercised in solving decision problems. However, AHP tools are still lacking in performance and there are issues regarding supplier selection decision-making have been identified. This study introduced a multidisciplinary approach to operational decision support model applied to Giant supermarket to provide the decision maker with a systematic decision making process. The purpose of new decision support model developed is to contribute new knowledge as well as for the improvement of decision-making methods to the industries, especially key player industry. This study presents a conceptual framework to summarize the research framework, comprising five main criteria and 41 sub-criteria, aligned with this study first research objective, to identify preference criteria for supplier selection decision, making process within the context of supply chain management. This is a quantitative approach study, using questionnaire for data collection methods. Self-administered questionnaires were distributed to 13 procurement managers at 13 stand-alone Giant supermarkets located in Selangor. Data were analyzed and compared, using three approaches; statistical approach, AHP approach and AHP-SCOR integrated model approach. The final findings indicated that there were three different results shown in each of the three comparative approaches suggested that the new developed model in this study has imperative significant in supplier selection process. The results amplify the most appropriate decision-making, providing the implication of novelty development of new integrated approach. Finally, this study provides practitioners at personal or professional setting to achieve a success of the holistic approach in future decision support model.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 INTRODUCTION

Interest in supply chain decision has been highly outlined in the context of supply chain efficiency. Local and global organization supply chain member entails on making choices among alternative courses of actions and rapid improvement in supply chain performance. Many literatures have reviewed on the supplier selection problem that discussed on multi criteria decision making method. In contrast, selecting supplier is imperative practice in the industry, including manufacturers, distributors, retailers, and service providers.

The evolution of supply chain interaction underlines that suppliers are required to have an adequate set of competencies to be part of a supply system capable of facing market competition (Esposito and Passaro, 2009). To this effect, customer firms have to be consistent in various actions and strategies, particularly with the assessment processes that are assumed a crucial importance. It represents a compulsory and critical starting point for the achievement of a collaborative customer supplier system (De et al., 2001).

The most crucial action organization should undertake is selection a supplier. The assessment process of supplier selection presents two different stages (De et al., 2001). The first concerns the selection process (selection problem) of new suppliers for inclusion in a supplier list. Selecting the right supplier is a difficult task as suppliers are characterized by strengths and weaknesses which require careful evaluation (Asamoah, Annan & Nyarko, 2012). The supplier's strengths and weaknesses can be compared, using qualitative and quantitative methods of decision making models by comparison of each supplier criteria to a reference (Tahriri, Osman, Ali, & Yusuff, 2008).

Tahriri et al. (2008) discussed criteria in Chen-Tung et al., (2006) study including quality, price, and flexibility and delivery performance that must be considered to determine suitable suppliers. This is generally done through a ranking