ABSTRACT

A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products and distribution of these finished products to customers. Managing the information, material, services, finance, time, strategy, and people over the supply chain yielding higher customer satisfaction and delight and making profits is Supply Chain Management (SCM). With increasingly competitive global world markets, companies are under intense pressure to find ways to cut production and material cost to survive and sustain their competitive position in their respective markets. Since a qualified supplier is a key element and a good resource for a buyer in reducing costs, lead-time, flexibility, and evaluation, selection of the potential suppliers has become an important component of SCM. As the supplier selection is decided by the attributes, which are affecting supplier selection process, purchase managers are in the position to pay more attention on those attributes. In this regard, numerous work had been carried out on the supplier selection attributes. Prioritization of Attributes that influence the supplier selection is the first and foremost process of procurement.

In the supplier selection literature, works on perceived importance of supplier selection has been found and used widely. No other specific work has been carried out on the actual choice of supplier selection attributes
except Verma et al (1998) in Utah and Arizona State, USA. Contemporary to the supplier selection literature, in India, prioritization of supplier selection attributes and the gap between perceived and actual choice of suppliers have not been carried out yet. This research work is an attempt to find the above in the automobile industries in Chennai, India.

A survey has been carried out among the purchase managers of automobile sector, Chennai. As it is considered as ‘Detroit of India’, this geographic region area has been chosen for this study. Two sets of questionnaire had been formed by brainstorming with industrialists, purchase managers, businessmen, and academicians to evaluate the priorities of supplier selection attributes.

Based on the survey among the purchase managers, importance of supplier selection attributes was found using Analytic Hierarchy Process (AHP). It is one of the Multi Attribute Decision Methods (MADM), since AHP allows for the rational evaluation of pros and cons concerning different alternative solutions to a multi-goal problem. In supplier selection, problem of selecting a vendor may include multi goals like least cost, high product quality, fast delivery, flexibility, etc. The AHP methodology used here is a simple, systematic and logical procedure for decision making. Relative weight was assigned for each attribute using a pairwise comparison matrix through this methodology. Eigen values were arrived at when proceeding the AHP. With these Eigen values, relative weights of the supplier selection attributes were found. These depict the perceived importance of the supplier selection
attributes in the purchase managers’ view, before selecting suppliers. This result is consistent with the past literature in this area.

The second phase of this work includes in determining the actual importance of supplier selection attributes when selecting the supplier using Discrete Choice Experiments (DCE), as it is a behavioral science approach. This approach is based on an econometric model called multi-nominal logit (MNL), which uses a maximum likelihood estimation scheme to maximize the probability of choosing an alternative with given attribute levels. DCA is a systematic approach for identifying the relative weights of attributes. This helps the decision maker to tradeoff when choosing an alternative from a possible set of alternatives. From this, actual importance of supplier selection attributes had been found. This research finding shows that Delivery, Cost, and Production facility are prioritized more than product quality of the suppliers. This shows that industries are keen about penetrating faster in to market. This work would be very beneficial for the managerial implications in future. Application software has been developed to select the vendor based on AHP method. Further, Vendor performance Index (VPI) can be standardized based on the priorities found from the AHP or DCA. This work provides an overall picture of research on supplier selection attributes. This piece of research would be of value to both academicians and practitioners interested in supplier management.