PREPOSITIONING OF WAREHOUSE FOR HUMANITARIAN RELIEF OPERATIONS

Prashant Barsing
Assistant Professor, Narsee Monjee Institute of Management Studies, Navi Mumbai Campus, Kharghar, Navi Mumbai 40 210 Maharashtra India,
Email: prashant.barsing@nmims.edu

ABSTRACT

Over the years, many countries are facing problems with man-made (e.g. terrorist attacks) as well as natural (e.g. earthquake) disasters. It is becoming one of the reasons for the economic slowdown. Effective logistics management is necessary to cope up with these problems. Therefore, humanitarian logistics (HL) is gaining attention from researchers and practitioners. The overall objective of this study is to explore the warehouse location decision problem by considering specific site attributes in the unique context of humanitarian relief operations. It is one of the strategic decisions to be taken at the preparedness phase of the disaster management. Prepositioning of the warehouse is done to pre-stock relief materials and quick dispatch of them to the disaster site. Commercial supply chains do not preposition warehouses; therefore, it is one of the important distinguishing factors. Prepositioning is not much studied in HL literature, in that also, very few studies are focused on developing countries like India. Previous models developed were based on the computerized optimization, ignoring qualitative aspects. In real life, manager's decision is based on experience and intuition. Therefore, this study is to investigate humanitarian prepositioned location decision problem with qualitative attributes based on human judgements. In this study, managerial level officers participate to construct the warehouse location decision attributes and evaluated the warehouse location for prepositioning. Analytic Hierarchy Process (AHP) is to acquire criteria weights and Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) to obtain the final ranking of the warehouse locations. Fuzzy set theory is adopted in the evaluation to deal with the fuzziness of decision-makers preferences in decision making.

Keywords: Humanitarian Logistics, Facility Location, Prepositioning, Disaster Management, Multi- Attribute Decision Making (MADM), Fuzzy AHP-Fuzzy TOPSIS