عنوان مقاله:

A two-objective location-routing model for logistics planning in response to a disaster

محل انتشار:

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خلاصه مقاله:

Natural and technological disasters, which are caused by human factors, have always threatened human life and imposed many damages and losses on it. The complexity and unpredictability of these incidents require current communities to make plans for coping and mitigating thedestructive effects. The purpose of this study is to present a two-objective location-routing problem, whose focuses on the logistics aspect of the response phase of a possible disaste r. The formulated model takes into account two contradictory objective functions, including maximizing the delivery speed and minimizing the relief operational costs, to optimize location, allocation, and routing decisionssimultaneously. Due to the lack of sufficient information on the required data in disastrous situations, uncertainty into parameters such as demand, access to routes, time and cost of travel, and the number of available vehicles is considered in the proposed model. For solving the proposed multiobjective model, the improved version of the augmented ε- constraint method (AUGMECON2) is utilized. Moreover,several sample problems have been designed and solved in order to validate the proposed model. The computationalresults obtained from solving the model show its satisfactory performance for timely delivery of relief items to the victims

کلمات کلیدی:

Humanitarian Logistics, Location-Routing, Multi-objective Optimization, Stochastic Programming