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ASSESSING THE ENVIRONMENTAL IMPACT OF TRANSPORTATION ACTIVITIES: A CASE STUDY

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Abstract

Pharmaceutical facilities pose several challenges, especially in optimizing logistical operations. As part of our research initiative aimed at restructuring pharmaceutical logistics, our study focuses on the analysis of medication distribution to different hospitals. This involves treating the distribution process as an optimization problem, called Vehicle Routing Problem (VRP), and aiming at searching the most effective vehicle routing which minimizes the routing cost. The problem focuses on green logistics for the distribution routes managed by the central pharmacy in Sfax. Analyzing the results could assist logistics managers in advancing green logistics initiatives by reducing both environmental and transportation costs. This research promotes the utilization of a variant of Vehicle Routing Problem (VRP), called the Green Vehicle Routing Problem (GVRP), which incorporates environmental criteria as a metric to search a vehicle routing plan. In this paper, we propose a linear mathematical modeling to solve this problemandto improve the efficiency of the examined process. The obtained results show the effectiveness of the presented model.

Key words: drug distribution, environmental vehicle routing problem (EVRP), optimization, pharmaceutical logistics, vehicle routing problem (VRP)

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