COLLABORATIVE LOGISTIC VEHICLE ROUTING PROBLEM AMONG SMALL SHIPPERS: A NEW GENETIC ALGORITHM APPROACH

Vahid Ghomi, School of Business, Penn State Mont Alto, 1 Campus Dr, Mont Alto, PA, 17237, USA, mailto:vxg5152@psu.edu
Sina Shokoohyar, Department of Computing and Decision Sciences, Stillman School of Business, Seton Hall University, South Orange, New Jersey, USA, sina.shokoohyar@shu.edu
Farnaz Ghazi Nezami, Department of Industrial and Manufacturing Engineering, Kettering University, Flint, MI, USA, fghazinezami@kettering.edu

ABSTRACT

This is an extended version of VRPSD to solve collaborative logistics vehicle routing problems with split deliveries (CoVRPSD). The origin of each vehicle route can be one of the suppliers. We assume that the total vehicle capacity in the supply chain is greater than or equal to the total demand. However, the total capacity of each supplier might not cover its own demand, and therefore, we implement collaboration in the supply chain. We performed a series of numerical experiments and utilized a genetic algorithm to determine the position of the proposed model in comparison with the other VRP variants.