عنوان مقاله:

Supply Chain Scheduling Using a Transportation System Composed of Vehicle Routing Problem and Cross-Docking Approaches

محل انتشار:

نشریه بین المللی مهندسی حمل و نقل, دوره 7, شماره 1 (سال: 1398)

تعداد صفحات اصل مقاله: 19

نویسندگان:

Mohammad Hossein Najian - *MSc. Grad., Department of Industrial Engineering , Semnan University, Semnan, Iran*

Mohammad Ali Beheshtinia - *Associate Professor, Department of Industrial Engineering , Semnan University, Semnan, Iran*

خلاصه مقاله:

This study considers a combination of cross-docking and vehicle routing problem (VRP) approachesto transport raw material and parts in a supply chain. The supply chain is composed of some supplierswhich are spread in different geographical zones and multiple shared vehicles with different speedsand capacities for transporting orders from the suppliers to a manufacturer. After proposing amathematical model of this new problem, a developed version of genetic algorithm based on apsychological theory, named Reference Group Genetic Algorithm (RGGA) is used to solve theproblem. The originality of this research is proposing a new method in integrated production andtransportation scheduling in supply chain by combination of cross-docking and VRP approaches,presenting the mathematical model of the problem and adapting RGGA to solve it. To evaluateRGGA performance, we develop a genetic algorithm proposed for the nearest problem in literatureand compare these two algorithms. Moreover, RGGA results are compared with optimum solutionsby some low size test problems. The result shows the good performance .of RGGA

کلمات کلیدی:

Transportation, Vehicle routing problem, Cross-docking, Scheduling, Supply chain