World Academy of Science, Engineering and Technology
International Journal of Industrial and Systems Engineering
Vol:12, No:05, 2018

Model of Transhipment and Routing Applied to the Cargo Sector in Small and Medium Enterprises of Bogotá, Colombia

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Abstract : This paper presents a design of a model for planning the distribution logistics operation. The significance of this work relies on the applicability of this fact to the analysis of small and medium enterprises (SMEs) of dry freight in Bogotá. Two stages constitute this implementation: the first one is the place where optimal planning is achieved through a hybrid model developed with mixed integer programming, which considers the transhipment operation based on a combined load allocation model as a classic transshipment model; the second one is the specific routing of that operation through the heuristics of Clark and Wright. As a result, an integral model is obtained to carry out the step by step planning of the distribution of dry freight for SMEs in Bogotá. In this manner, optimum assignments are established by utilizing transshipment centers with that purpose of determining the specific routing based on the shortest distance traveled.

Keywords : transshipment model, mixed integer programming, saving algorithm, dry freight transportation
Conference Title : ICDEDA 2018 : International Conference on Decision Engineering and Decision Analysis
Conference Location : Paris, France
Conference Dates : May 17-18, 2018