Assessment of Memetic and Genetic Algorithm for a Flexible Integrated Logistics Network

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Abstract : The distribution-allocation problem is known as one of the most comprehensive strategic decision. In real-world cases, it is impossible to solve a distribution-allocation problem in traditional ways with acceptable time. Hence researchers develop efficient non-traditional techniques for the large-term operation of the whole supply chain. These techniques provide near-optimal solutions particularly for large scales test problems. This paper, presents an integrated supply chain model which is flexible in the delivery path. As the solution methodology, we apply a memetic algorithm with a novelty in population presentation. To illustrate the performance of the proposed memetic algorithm, LINGO optimization software serves as a comparison basis for small size problems. In large size cases that we are dealing with in the real world, the Genetic algorithm as the second metaheuristic algorithm is considered to compare the results and show the efficiency of the memetic algorithm.