DESIGNING HEURISTIC ALGORITHM TO SOLVE SWAP-BODY VEHICLE ROUTING PROBLEM

Name : Andre Taufikurrahman Nugroho
NRP : 2510100112
Supervisor : Dr. Eng. Ir. Rusdiansyah Ahmad, M. Eng., CSCP

ABSTRACT

Distribution activities are generally carried out by using the truck as the truck high flexibility and can reach any location without the need for special infrastructure such as trains. However, the main problem is how to make the delivery of goods by truck as efficient as possible. This is because the truck has a smaller capacity than the vessel as well. During its development, the problems grow more complex with the differences in facility size consumer, so the large consumer can be visited by train and trucks, while small consumers can only be visited by a truck. This problem is referred to as the swap-body VRP. This study proposes an algorithm to solve the problem by using two main phases, first phase is determine the begining route using interaction theory, then these routes are combined into a new route to serve all the nodes in the right vehicle division. The ability of the algorithm to produces a low cost tested with several experiments to compare the method with the general theory of the interaction and the results of the algorithm with the usual VRP. The experimental results showed that the algorithm can produce lower costs because fixed costs are also getting reduced.

Keywords: interaction theory, swap-body, VRP
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