

ABSTRACT

Logistics management is the management of the flow of goods, information and other resources including energy and people from supplier to the customer. Transportation cost is the costliest in logistics, followed by inventory cost, warehousing cost, packing cost, management cost, material handling cost and ordering cost. Transportation cost can be reduced by optimizing the sequence of vehicle route. This problem about optimizing vehicle route is generally known as vehicle routing problem. Pollution routing problem (PRP) is an extension of the traditional VRP which consider the transportation impacts to the environment represented by pollution cost.

PRP research based on assumption that pollution emitted by a vehicle depends on vehicle load and speed among other factors. Since it is introduced, some researches have been conducted to see another variant of PRP. This research aims to study the PRP as a variant of VRP with Time Windows constraint (VRPTW) and see the effect of variations of speed to the solutions of PRP. The PRP model are used to solve distribution problem in United Kingdom with sets of single depot and 10 cities involved as the customers.

Keywords: Pollution cost, pollution routing problem, vehicle load and speed