ABSTRACT

Vehicle route selection affects the delivery process to the customer. The existence of a wide range of delivery locations with diverse customer demand is a challenge for PT. Putra Lati Prayogi as a LPG Gas Distribution Center in the Jombang area, agents make deliveries based on the division of each district and without considering the utilization of capacity and number of vehicles. This of course affects the workload and the load of freight that is not evenly distributed and the cost of distribution of the total distance traveled. Proposal to design the optimal route can be done by applying optimization, one type of Route determination is the use of Vehicle Routing Problem Pickup and Delivery. This type of VRP Pickup and Delivery will provide a shorter total route distance by applying the Clark and Wright Saving Matrix Heuristic method. Optimization results can provide cost savings distribution with optimal route selection, the results show there is an efficiency of 55% of the existing conditions. The Total mileage resulted in a difference of 536.7 km, while the resulting cost difference of Rp. 584.556. So that the proposed route determination can provide distribution cost savings through the application of Vehicle Routing problem Pickup and Delivery and provide efficiency in terms of mileage and transportation costs.

Keywords: *Vehicle Routing Problem, Pickup and Delivery, LPG*