

ABSTRAK

PT. Sumber Jaya Mojopahit merupakan perusahaan yang bergerak dibidang distribusi barang yaitu distribusi LPG 3kg yang berada di wilayah Kab. Mojokerto. Perusahaan tersebut telah menjadwalkan proses distribusi ke tiap agennya serta menentukan rute kendaraan secara intuisi, maka rute distribusi yang ditempuh oleh kendaraan belum memerhatikan jarak antar agen dan penggunaan kendaraan yang tepat karena memiliki kapasitas kendaraan berbeda-beda, sehingga jarak yang ditempuh menjadi jauh dan kurang optimal dalam sekali perjalanan dan menimbulkan ongkos biaya transportasi semakin tinggi. Permasalahan tersebut diselesaikan dengan model *Heterogeneous Fleet Vehicle Routing Problem* (HFVRP) menggunakan metode *linear programming* menggunakan *software* LINGO 18.0. Hasil dari *solver* LINGO 18.0 yaitu memperoleh total jarak yang optimal sebesar 243850 meter atau sebesar 243,85 km. Rute distribusi hasil optimasi memperoleh total jarak lebih sedikit 10.8 km dibandingkan dengan rute reguler. Total biaya transportasi antara rute reguler dengan rute hasil optimasi memiliki selisih sebesar Rp13.179,56. Perusahaan dapat menghemat biaya sebesar 4% dalam 1 periode pengiriman dengan rute hasil optimasi.

Kata Kunci: *Heterogeneous Fleet Vehicle Routing Problem* (HFVRP), *Vehicle Routing Problem*, Rute , *Software* Lingo, *linear Programming*

ABSTRACT

PT. Sumber Jaya Mojopahit is a company engaged in the distribution of goods, namely 3kg LPG distribution in the Mojokerto regency. The company has scheduled the distribution process to each agent and determines the route of the vehicle intuitively, so the distribution route taken by the vehicle does not pay attention to the distance between agents and the use of the right vehicle because it has different vehicle capacities, so the distance traveled is far and less optimal. in one trip and incur higher transportation costs. This problem is solved by using the Heterogeneous Fleet Vehicle Routing Problem (HFVRP) model using the linear programming method using LINGO 18.0 software. The result of the LINGO 18.0 solver is to obtain the optimal total distance of 243850 meters or 243.85 km. The distribution route optimization results obtained a total distance of 10.8 km less than the regular route. The total cost of transportation between the regular route and the optimization result route has a difference of Rp. 13,179.56. Companies can save 4% costs in 1 delivery period with the route optimization results.

Keywords: *Heterogeneous Fleet Vehicle Routing Problem (HFVRP), Vehicle Routing Problem, Route, Software Lingo, Linear Programming*