ABSTRACT

PT. XYZ was the company which was active in garment field, located in Bandung, Jawa Barat. Products which were produced by the company were school uniforms including shirts, pants, skirts, and specific uniforms. PT. XYZ already had 33 regular customers in Bandung and Cimahi. Aside from those area, PT. XYZ also had other regular customers from Purwakarta, Garut, Sumedang, Cirebon, Pamanikan, Batam, and Palembang.

This study examined VRP to time window characteristic, heterogenous vehicle, multiple product, and multiple trips to minimize transportation cost. Usually, VRP's problem was finished using metaheuristic algorithm such as algorithm genetic with initial population using heuristic algorithm as nearest neighbour which was done by the study.

The result of the study could minimize total shipment distance, optimize the usage of vehicle, minimize the transportation charge, and increase the total of order fulfillment. The result of total distance decreasing 35% from total mileage, total transportation cost was a decreasing equaled 31 %, and increasing order fulfillment from 82,39 % to 94, 89%.