

ABSTRAK

Sistem rantai pasok bertujuan untuk memaksimalkan nilai (*value*) dan profit yang dihasilkan setiap komponen rantai pasok. PT. PCS sebagai salah satu dari 4 perusahaan penyedia *Food Processing & Packaging Machines* terbesar di Indonesia berusaha memastikan kepuasan pelanggan atas pelayanan distribusi produknya. Tujuan penelitian ini untuk mencari solusi pengaturan rute yang optimal, untuk menekan total biaya pengiriman dan meningkatkan layanan pengiriman ke pelanggan. Objek penelitian ini adalah aktifitas pengiriman barang dagang di PT. PCS yang berlokasi di Jakarta. Penelitian ini dilakukan selama 1 bulan di gudang distribusi PT. PCS dan optimisasi rute pengiriman menggunakan Algoritma *Differential Evolution*. Hasil optimisasi menunjukkan bahwa pengaturan ulang rute pengiriman bisa meminimalkan total jarak tempuh sebesar 25.46% dan pengurangan total biaya pengiriman sebesar 28.43%.

Kata Kunci:

Vehicle Routing Problem, *differential evolution*, optimisasi rute, optimisasi pengiriman



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ABSTRACT

Supply chain system aims to maximize the value and profit generated each component of the supply chain. PT. PCS as one of the 4 largest provider of Food Processing & Packaging Machines in Indonesia is trying to ensure customer satisfaction on its product distribution services. The purpose of this research is to find optimal route regulation solution, to reduce total shipping cost and improve delivery service to customer. The object of this research is the activity of shipping merchandise at PT. PCS located in Jakarta. This research was conducted for 1 month in distribution warehouse of PT. PCS and delivery route optimization using Differential Evolution Algorithm. Optimization results show that re-arrangement of delivery routes can minimize total mileage by 25.46% and total transportation costs by 28.43%.

Key Words:

Vehicle Routing Problem, differential evolution, route optimization, delivery optimization



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