

ANALISIS RUTE DISTRIBUSI PRODUK MENGUNAKAN METODE SAVING MATRIX DAN NEAREST NEIGHBOR

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Abstrak

UMKM ABC bergerak di bidang produksi olahan makanan ringan kripik tempe, yang memproduksi 2 kwintal kripik tempe setiap harinya sekaligus sebagai distributor kripik tempe untuk memenuhi permintaan pelanggannya yang tersebar di wilayah Kota Yogyakarta, Bantul, dan Klaten. Masalah yang terjadi pada proses pendistribusian adalah tidak dimaksimalkannya kapasitas angkut armada dalam proses pendistribusian serta rute pendistribusian produk masing-masing armada pengiriman hanya berdasarkan kepada satu titik tujuan saja yang mengakibatkan biaya pengiriman meningkat 50%. Penelitian ini terfokus pada penentuan rute pendistribusian supaya mendapatkan total jarak tempuh dan biaya pendistribusian yang paling minimum. Sebelumnya, perusahaan memiliki 9 rute pendistribusian. Dari hasil penelitian, didapatkan 5 rute pendistribusian optimal tergantung dari banyaknya jumlah permintaan. Analisa dan perhitungan dengan metode *saving matrix* dan *nearest neighbor* menghasilkan total jarak tempuh dan total biaya pendistribusian yang lebih kecil dibandingkan dengan total jarak tempuh dan total biaya pendistribusian yang dihasilkan dengan kebijakan pemilik UMKM saat ini. Pada penelitian ini diketahui bahwa terjadi penghematan jarak tempuh pendistribusian sebesar 42,73% serta penghematan biaya pendistribusian sebesar 42,77% apabila dibandingkan dengan metode pendistribusian *existing* yang dilakukan perusahaan saat ini.

Kata Kunci: Rute Distribusi, *Saving Matrix*, *Nearest Neighbor*

PRODUCT DISTRIBUTION ROUTE ANALYSIS USING THE SAVING MATRIX AND NEAREST NEIGHBOR METHODS

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Abstract

UMKM ABC is engaged in the production of processed tempeh chip snacks, which produces 2 quintals of tempeh chips every day as well as a distributor of tempeh chips to meet the demand of its customers who are spread across the cities of Yogyakarta, Bantul and Klaten. The problem that occurs in the distribution process is that the fleet transport capacity is not maximized and the product distribution route for each shipping fleet is only based on one point of destination which causes shipping costs to increase by 50%. This research focuses on determining distribution routes in order to get the minimum total mileage and distribution costs. Previously, the company had 9 distribution routes. From the research results, there are 5 optimal distribution routes depending on the number of requests. Analysis and calculations using the saving matrix and nearest neighbor methods produce a smaller total mileage and distribution cost compared to the total mileage and distribution cost generated by the current policy of MSME owners. In this study it was found that there was a saving in distribution mileage of 42.73% and a savings in distribution costs of 42.77% when compared to the existing distribution method used by the company at this time.

Keywords: *Distribution Route, Saving Matrix, Nearest Neighbor*

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