OPTIMALISASI RUTE DISTRIBUSI PRODUK ES BATU DENGAN METODE *SAVING MATRIX* DAN *NEAREST NEIGHBOUR* DI CV ALASKA ICE CUBE

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ABSTRAK

CV Alaska Tube Ice merupakan salah satu produsen ice tube yang berlokasi di jl Tampomas Raya, Mayaan, Trihanggo, Kec. Gamping, Kab. Sleman, Daerah Istimewa Yogyakarta. CV alaska merupakan usaha yang bergerak dalam bidang pembuatan dan pendistribusian es batu. Permasalahan dalam proses pendistribusian es batu kepada pelanggan masih terjadi pada CV Alaska. Saat ini pengiriman dilakukan menggunakan mobil box traga ke titik wilayah tertentu melalui 2 rute tanpa memperhatikan jarak tempuh. Pada bulan maret 2025 tepatnya di tanggal 30 mengalami peningkatan permintaan es batu yang biasanya melakukan pengiriman 100 sak meningkat menjadi 124 sak dengan jumlah jarak yang ditempuh yaitu 108. Untuk mengatasi permasalahan ini maka dilakukan penelitian untuk mendapatkan rute distribusi terpendek menggunakan metode *saving matrix* dan *nearest neighbour*, dari kedua metode tersebut yang menghasilkan usulan rute distribusi paling optimal adalah dengan menggunakan metode *nearest neighbour* jika sebelumnya jarak yang ditempuh untuk distribusi sebesar 108 km dan membutuhkan biaya sebesar Rp. 4.374.052, dengan metode *nearest neighbour* jarak yang ditempuh yaitu sebesar 55 km, rute usulan ini lebih pendek 53 km dibandingkan rute awal sehingga perusahaan dapat menghemat jarak sebesar sebesar 49,07 % , sehingga biaya yang diperlukan untuk distribusi adalah sebesar Rp. 3684.870 dengan menghemat biaya distribusi sebesar 690.000 dibandingkan rute sebelumnya sehingga perusahaan dapat menghemat biaya sebesar 15,75%.

Kata kunci : Rute awal, *Saving matrix, Nearest Neighbour*, Biaya distribusi, jarak tempuh

OPTIMIZING ICE CUBE PRODUCT DISTRIBUTION ROUTES USING THE SAVING MATRIX AND NEAREST NEIGHBOR METHODS AT CV ALASKA ICE CUBE

ABSTRACT

CV Alaska Tube Ice is an ice tube manufacturer located on Jl. Tampomas Raya, Mayaan, Trihanggo, Gamping District, Sleman Regency, Special Region of Yogyakarta. CV Alaska is a business engaged in the manufacture and distribution of ice cubes. Problems in the distribution process of ice cubes to customers still occur at CV Alaska. Currently, deliveries are made using Traga box trucks to specific locations via two routes, regardless of distance. In March 2025, on the 30th, demand for ice increased from the usual 100 sacks to 124 sacks, covering a total distance of 108. To overcome this problem, a study was conducted to obtain the shortest distribution route using the saving matrix and nearest neighbor methods. Of the two methods, the most optimal distribution route proposal is to use the nearest neighbor method. If previously the distance traveled for distribution was 108 km and required a cost of Rp. 4,374,052, with the nearest neighbor method the distance traveled was 55 km, this proposed route was 53 km shorter than the initial route so that the company could save a distance of 49.07%, so that the cost required for distribution was Rp. 3,684,870 by saving distribution costs of 690,000 compared to the previous route so that the company could save costs of 15.75%.

Keywords: Initial route, Saving matrix, Nearest Neighbor, Distribution costs, distance traveled

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