ANALISIS PERBANDINGAN METODE *ALGORITMA CLARKE AND WRIGHT SAVINGS* DAN *SEQUENTIAL INSERTION* DALAM PENENTUAN RUTE OPTIMAL DAN PENGHEMATAN BIAYA DISTRIBUSI (STUDI KASUS : PABRIK ES CAHAYA KRISTAL TUBE ICE)

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ABSTRAK

Dalam penentuan rute distribusi perlu di ketahui urutan pelanggan yang akan dikunjungi lalu didistribusikan . Dalam penelitian ini, data di ambil dari rute pendistribusian yang telah di catat oleh pihak kasir yang ada di Pabrik Es Cahaya Kristal Tube Ice yang berada pada Jl, Damai Desa Prujakan Tambakan, Sinduharjo, Ngaglik, Sleman Yogyakarta. Kemudian data di oleh menggunakan *Algoritma Clarke and Wright Savings* dan *Sequential Insertion* dengan tujuan memberikan usulan rute terbaik atau efektif kemudian di dibandingkan kedua metode tersebut dengan menghasilkan Jarak Rute Tempuh Perjalanan serta Biaya Distribusi. Rute awal gabungan 95 Km dengan biaya distrbusi Rp.170.000. Usulan menggunakan Algoritma *Clarke and Wright Saving* mendapatkan 2 Rute Kendaraan yang menghasilkan rute gabungan 72Km dengan biaya Distribusi perhari Rp.147.000, Dan untuk Metode Algoritma *Sequential Insertion* Juga mendapatkan 2 Rute Kendaraan yang menghasilkan Rute gabungan 107 Km dengan biaya distribusi perhari Rp.182.000. Dengan demikian dapat di simpulkan bahwa rute yang di bentuk menggunakan Algoritma *Clarke and Wright Savings* lebih efektif dan hemat di bandingkan rute yang di bentuk menggunakan *Sequential Insertion* dan Rute awal.

Kata Kunci : Rute Distribusi, *Algoritma Clarke and Wright Savings*, *Sequential Insertion*.

COMPARATIVE ANALYSIS OF CLARKE AND WRIGHT SAVINGS AND SEQUENTIAL INSERTION ALGORITHM METHODS IN DETERMINING OPTIMAL ROUTES AND SAVING DISTRIBUTION COSTS

(Case Study: Light Crystal Tube Ice Factory)

ABSTRACT

Knowing the sequence of customers to be visited and distributed is essential for determining the distribution route. Data for this study was collected from the sales route recorded by the cashier at the Cahaya Kristal Tube Ice Factory on Jl. Damai, Prujakan Tambakan Village, Sinduharjo, Ngaglik, Sleman Yogyakarta. The data was then analyzed using the Clarke and Wright Savings Algorithm and Sequential Insertion to generate optimal route suggestions. The two methods were then evaluated by calculating the Travel Route Distance and Distribution Costs. The original combined route was 95 km with a Rp 170,000 distribution cost. The proposal, utilizing the Clarke and Wright Savings Algorithm, resulted in 2 vehicle routes that combined for a total route of 72 km with a Rp 147,000 daily distribution cost. The Sequential Insertion Algorithm Method also resulted in 2 vehicle routes totaling 107 km and a daily distribution cost of Rp 182,000. Therefore, it can be inferred that the route created using the Clarke and Wright Savings Algorithm is more effective and efficient than the route formed using Sequential Insertion and the initial route.

***Keywords**: Distribution Route, Clarke and Wright Savings Algorithm, Sequential Insertion.*

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