## ASBTRAK

Peningkatan kebutuhan air minum dalam kemasan di Indonesia menuntut sistem distribusi yang efisien untuk menjamin ketepatan waktu dan meminimalkan biaya. CV. Ie Yadara, salah satu produsen air mineral di Bireuen menghadapi permasalahan rute distribusi yang belum optimal karena masih bergantung pada pengalaman sopir. Penelitian ini bertujuan menentukan rute distribusi optimal dan menghitung penghematan biaya melalui penerapan metode *Nearest Neighbour*. Data primer dikumpulkan melalui observasi, wawancara dan dokumentasi, sedangkan data sekunder diperoleh dari catatan pengiriman perusahaan. Analisis dilakukan dengan membentuk matriks jarak, mengelompokkan rute berdasarkan kapasitas kendaraan dan menghitung biaya distribusi. Hasil penelitian menunjukkan bahwa penerapan metode *Nearest Neighbour* mampu mengurangi jarak tempuh dari 1.784 km menjadi 1.612 km atau berkurang 172 km. Biaya distribusi menurun dari Rp 3.556.407 menjadi Rp 3.410.047, menghasilkan penghematan Rp 146.360. Selain itu, rute optimal yang dihasilkan juga efektif dalam membuat jadwal pengiriman lebih teratur dan waktu tempuh lebih singkat, sehingga meningkatkan ketepatan pengiriman. Temuan ini membuktikan bahwa metode *Nearest Neighbour* efektif dalam meningkatkan efisiensi operasional distribusi CV. Ie Yadara.



**Kata kunci**: *Optimasi Rute, Air Minum Dalam Kemasan, Nearest Neighbour*.

## *ABSTRACT*

*The growing demand for bottled drinking water in Indonesia requires an efficient distribution system to ensure timely delivery while minimizing costs. CV. Ie Yadara, a bottled water producer in Bireuen, faces suboptimal distribution routes as the company still relies on drivers' experience. This study aims to determine the optimal distribution route and calculate cost savings by applying the Nearest Neighbour method. Primary data were collected through observation, interviews, and documentation, while secondary data were obtained from the company's delivery records. The analysis involved creating a distance matrix, grouping routes based on vehicle capacity, and calculating distribution costs. The findings show that applying the Nearest Neighbour method reduced the total travel distance from 1,784 km to 1.612 km, a decrease of 172 km. Distribution costs dropped from IDR 3.556.407 to IDR 3.410.047, resulting in savings of IDR 146.360. Furthermore, the optimized route improved delivery scheduling and shortened travel time, thereby enhancing delivery punctuality. These results demonstrate that the Nearest Neighbour method is effective in improving the operational efficiency of CV. Ie Yadara's distribution process.*



***Keywords**: Route Optimization, Bottled Drinking Water, Nearest Neighbour.*