

ANALISIS CAPACITATED VEHICLE ROUTING PROBLEM (CVRP) UNTUK MEMINIMALKAN JARAK PENGIRIMAN BARANG DENGAN METODE SAVING MATRIX DAN GENERALIZED ASSIGNMENT DI PT.X

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Abstrak

PT. X adalah industri peralatan dapur yang memasok ke berbagai bisnis usaha makanan dan minuman nasional dan bertindak sebagai eksklusif agen, dan produksi peralatan dapur sesuai pesanan pelanggan. Sistem transportasi PT. X ini mempunyai sistem berdasarkan *time schedule* dengan rute yang tidak pasti. Permasalahan tersebut dapat dikategorikan sebagai *Capacitated Vehicle Routing Problem* adalah salah satu jenis permasalahan penentuan rute terdekat yang dibatasi dengan kapasitas kendaraan angkut. Beberapa metode atau pendekatan yang telah diajukan sebagai alternatif pemecahan masalah CVRP diantaranya adalah *Saving Matrix* dan *Generalized Assignment*. Metode *Saving Matrix* bekerja dengan membuat suatu matriks yang disebut matriks penghematan, matriks ini berisi daftar penghematan yang diperoleh jika menggabungkan dua pelanggan atau lebih dalam satu kendaraan. Metode *Generalized Assignment* bekerja dengan menentukan seed point atau titik tengah kendaraan Hasil perbandingan memperlihatkan bahwa Metode *Generalized Assignment* menghasilkan rute distribusi yang optimal serta jarak yang minimum daripada Metode *Saving Matrix*

Kata Kunci: Capacitated Vehicle Routing Problem, Generalized Assignment, Saving Matrix

**CAPACITATED VEHICLE ROUTING PROBLEM (CVRP) ANALYSIS
TO MINIMALIZE COMMODITY DELIVERY'S DISTANCE WITH
SAVING MATRIX METHOD AND GENERALIZED ASSIGNMENT AT
X COMPANY**

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Abstract

X Company is a kitchen set company industry which supplies to many national food and beverages enterprises, acting as exclusive agent and produce kitchen sets as per customer's orders. The transportation system of X Company has a system based on time schedule with uncertain routes. This issue, categorized as Capacitated Vehicle Routing Problem, is a kind of closest-route arrangement problem which limited by transport vehicle's capacity. Some methods or approachment that has been submitted as CVRP problem solving alternatives are Saving Matrix and Generalized Assignment. The Saving Matrix method works by making a matrix called saving or thrift matrix, filled with saving list obtained with combining two or more costumer's goods in one vehicle. Generalized Assignment method works by determining seed point or vehicle's middle point in distance. The comparison result shows that the Generalized Assignment method comes up with optimal distribution route and minimum distance if compared with Saving Matrix method.

Key Words: Capacitated Vehicle Routing Problem, Generalized Assignment, Saving Matrix