

ABSTRAK

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Judul : Perbandingan Solusi Optimal Masalah Transportasi Menggunakan Metode *Weighted Arithmetic Mean*, *Stepping Stone*, dan MODI

Penelitian ini bertujuan untuk menganalisis perbandingan solusi optimal dalam penyelesaian masalah transportasi menggunakan tiga metode, yaitu *Weighted Arithmetic Mean* (WAM), *Stepping Stone*, dan *Modified Distribution Method* (MODI). Penelitian ini menggunakan pendekatan kuantitatif dengan data berupa matriks biaya transportasi, permintaan, dan penawaran. Proses penyelesaian dimulai dengan menentukan solusi awal menggunakan metode *least cost* dan WAM, kemudian diuji optimalitasnya dengan metode *Weighted Arithmetic Mean* (WAM), *Stepping Stone* dan MODI. Hasil penelitian menunjukkan bahwa metode MODI lebih unggul dibandingkan metode lain karena mampu memberikan hasil optimal dengan jumlah iterasi lebih sedikit serta biaya transportasi yang lebih minimum. Dengan demikian, penelitian ini memberikan kontribusi terhadap pemilihan metode penyelesaian masalah transportasi yang lebih efisien dan aplikatif dalam bidang distribusi dan logistik.

Kata Kunci: Masalah Transportasi, *Least Cost*, *Weighted Arithmetic Mean*, *Stepping Stone*, *Modified Distribution Method*, Optimasi

ABSTRACT

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Title : Comparison of Optimal Solutions to Transportation Problems Using the Weighted Arithmetic Mean (WAM), Stepping Stone, and MODI Methods

This study aims to analyze the comparison of optimal solutions in solving transportation problems using three methods: Weighted Arithmetic Mean (WAM), Stepping Stone, and Modified Distribution Method (MODI). The research applies a quantitative approach with data in the form of a transportation cost matrix, demand, and supply. The solution process begins with determining the initial feasible solution using the Least Cost and WAM methods, followed by an optimality test using the Stepping Stone and MODI methods. The results of the study indicate that the MODI method is superior to the other methods, as it can provide an optimal solution with fewer iterations and achieve the minimum transportation cost. Therefore, this research contributes to the selection of more efficient and applicable methods for solving transportation problems in the fields of distribution and logistics.

Keywords: Transportation Problem, Least Cost, Weighted Arithmetic Mean, Stepping Stone, Modified Distribution Method, Optimization