An Efficient Heuristic Approach for Solving the Transportation Problem

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Abstract

All algorithms that produce optimal solutions (minimal cost solutions) to the transportation problem require an initial feasible solution (IFS) that is determined heuristically. The better the initial heuristic solution is, the less work that needs to be done by the algorithm that produces an optimal solution. Here, first we demonstrate a deficiency of a recently developed method in obtaining a minimal cost solution to the transportation problem. Then a new heuristic approach of obtaining an efficient IFS (optimum or very near optimum) to this problem is developed, and it is coded using C++ programming language. A comparative study of the new heuristic with the best available ones in the literature on the obtained results of some numerical problems is carried out. This study shows the promising performance of the new heuristic in comparison with them.

Keywords
Heuristic, Initial Feasible Solution, Minimal cost solution

Biography

Mohamed Silmi Juman is currently a fulltime research fellow in department of Mathematics at the University of Brunei Darussalam (UBD), Brunei Darussalam. He earned his first degree B.Sc. (Hons.) in Mathematics from University of Peradeniya, Sri Lanka in 2008. Then he joined to the department of mathematics at the same university where he graduated from as a lecturer and served there for almost two and half years. Then he moved to Brunei Darussalam in January 2011 to work on his Ph.D. in Mathematics (Operations Research) at the University Brunei Darussalam. He has published journal and conference papers. His research interests include Logistics and Supply Chain Management, Heuristic technique (for solving NP-hard Problems) and Production and inventory control, etc.

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