Abstract

Transportation models play an important role in logistics and supply chain management for reducing cost and improving service. In this paper two new fuzzy transportation linear programming models are developed: one with equality constraints and other with inequality constraints using L-R fuzzy numbers. The membership functions of L-R fuzzy numbers of fuzzy transportation cost are consider being linear and exponential. This paper develops a procedure to derive the fuzzy objective value of the fuzzy transportation problem, in that the cost coefficients and the supply and demand are L-R fuzzy numbers. The two models are illustrated with an example. The optimal fuzzy transportation cost for the two models slightly varies when linear membership functions are equal and the optimal fuzzy transportation cost is same in case of different membership functions i. e. , either linear or exponential membership functions defined on L-R fuzzy numbers. Most of the fuzzy transportation problems reviewed in literature have the negative optimal fuzzy transportation cost but in our proposed method we obtain positive optimal fuzzy transportation cost in all most all cases.
Fuzzy Transportation Linear Programming Models based on L-R Fuzzy Numbers

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Index Terms

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Fuzzy transportation problem; Yager’s ranking index; L-R fuzzy numbers; linear programming