

A Strategic Facility Location Model for an Integrated Logistics System in a Finite Planning Horizon with Probabilistic Customer/Supplier Participation

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Abstract

This paper has developed a mathematical model that minimizes the total operating and capital cost of an integrated logistics system (reverse and forward logistic system) with facility sharing. The constraints included in the model are the supply and demand limitations, opening, expansion and closing constraints, and capacity constraints. The model has been translated using General Algebraic Modeling Systems (GAMS) modeling language and solved using CPLEX. Hypothetical data are used using two solution methodologies. These are the sequential method and integrated method. The integrated method results to a better solution than the sequential method for non-balance demand and supply parameters.