

A continuous approximation model for locating warehouses and designing physical and timely distribution strategies for home delivery

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Abstract

This article proposes a methodology based on continuous approximation to address the common logistics problems of locating warehouses and designing physical distribution strategies for a delivery firm with short and immediate time windows of different urgency (e.g., 1 or 2 h). An objective function is developed that includes the principal cost factors (warehouse rental, transportation, inventory cost, and wages). The methodology was applied to the real case of a company in Santiago, Chile, generating a demand model and an optimal logistics design that produced satisfactory results in terms of optimal warehouse locations and associated costs.