عنوان مقاله:

A Mathematical Programming for a Special Case of 2E-LRP in Cash-In-Transit Sector Having Rich Variants

محل انتشار:

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خلاصه مقاله:

This article proposes a special case of a two-echelon locationrouting problem (2E-LRP) in the cash-in-transit (CIT) sector. To tackle this realistic problem and make the model applicable, a rich LRP is presented considering several existing real-life variants and characteristics named BO-2E-PCLRPSD-TW, including different objective functions, multiple echelons, multiple periods, capacitated vehicles, distribution centers and automated teller machines (ATMs), different types of vehicles in each echelon, and single-depot with different time windows. Since routing plans in the CIT sector ought to be safe and efficient, the minimization of total transportation risk and cost are considered simultaneously as objective functions. Then, such a complex problem is formulated in mathematical mixed integer linear programming (MMILP). To validate the presented model and the formulation and to solve the problem, the latest version of ε- constraint method namely AUGMECON2 is applied. This method is specially efficient for solving multi-objective integer programing (MOIP) problems and provides the exact Pareto fronts. Results substantiate the .suitability of the model and the formulation

کلمات کلیدی:

Two-echelon locationrouting problem;Mixed integer linear programming; Cash in transit; Multiple objective optimization; Augmented ε-constraint method