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Efficient Vehicle Routing Practices for WEEE Collection

Abstract

This chapter explicitly shows how the European Union Directive 2002/96/EC on Waste of Electrical and Electronic Equipments (WEEE) might be transformed into efficient vehicle routing practices for the collection of end-of-life electronic appliances. The chapter presents integer programming formulations and extensions for the problem. Due to the computational complexity of the problem, it is important to develop polinomial time heuristics solution procedures. The chapter analyzes the performance of two algorithms: a savings based algorithm and a GRASP based algorithm. Computational results indicate that the performance of the proposed algorithms to handle a real-life problem in the northwestern Spain is satisfactory. The chapter concludes with a general discussion of vehicle routing practices for the efficient collection of WEEE.
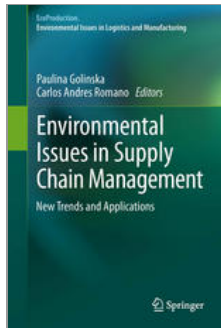
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