



Research School for Operations
Management and Logistics

Exact and heuristic solution methods for routing problems with service level requirements

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Service level requirements are common practice of distribution logistics but have received little attention in the academic literature on optimizing distribution problems. In this research project we develop solution methods for routing problems with profits and we incorporate some of the most commonly-used KPIs currently present in the Dutch cash supply chain. Our models generalize classical problems in the research stream of vehicle routing with profits since service levels may be present either in the objective functions or in the constraints part of the researched problems. Our solution methods include exact approaches based on integer programming techniques and hybrid heuristics which are tested on challenging synthetic instances coming from the literature and on real-life instances coming from the Dutch cash supply chain.