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# Collaboration through shared-customers in last-mile urban delivery

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## Abstract

Collaboration has been recently explored in many ways to reduce costs of different transportation systems, or to provide an improved service using the same available resources. In this work, we focus on last-mile delivery when several carriers operate in the same urban area and customers may have demand of service for more than one carrier. Collaboration is considered among carriers for the service of the shared customers to reduce the overall operational costs. First we study the savings that can be theoretical obtained by allowing collaboration. Then, two formulations are proposed and computationally compared. Optimal solutions are analyzed and compared to the case when no collaboration exists. Extensive computational experiments will be presented with different sets of benchmark instances.

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