

# LOCKER FACILITY ALOCATION FOR DELIVERY OF GOODS IN THE E-COMMERCE BUSINESS

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## ABSTRACT

In urban logistics, long distance shipments from warehouses to consumer are becoming difficult with continued e-commerce growth. This requires complex planning and scheduling to minimize global travel costs, but often experiences challenges such as lowering the economies of scale in the transportation system, including high levels of load fragmentation and low use of vehicle load compartments. In this study, we propose allocation of locker facilities for delivery point of goods in the e-commerce business. Automatic lockers are spread out at the location determined from the model developed in this study. This locker serves as an effective alternative solution to a gathering point of goods sent by the seller, as well as a gathering point for end customers who take items purchased from the e-commerce. We specifically discuss the set covering problem by considering the population density in each region. We attempt to optimize the location facilities by providing several options of the scope to cover the maximum customer. This problem is applied to a 42-node census tract representation of city center of Gresik.

**Keywords:** Locker allocation, e-commerce, city logistics, set covering problem.