# Optimization of Multi-Objective Decision Making in Reverse Logistics Using Pallet-Renting Industry as Example

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## Abstract

This research's main focus is to develop an optimization model for determining multi-objective
decision-making weights and routes by investigating the pallet-renting business based on reverse logistics.
This model could increase the reliability in terms of recycling information by adopting RFID techniques for
data collection, and by improving inventory visibility through cloud computing in a supply chain. The key
performance indices are meeting clients' demands, better recycling effectiveness and accurate prediction of
shortage for the next cycle. The proposed model incorporates genetic algorithm for route scheduling, cloud
computing for exchange and integration of information, and neural networks for predicting demands. The
model also promises enhancement in competitiveness of enterprises in aiding cooperation of international logistics
businesses.

Keyword：Reverse logistics; RFID; genetic algorithm; multi-objective decision making; vendor management