

Optimizing Reusable Packaging Systems (English)

Reusable packaging systems have emerged as a sustainable alternative to single-use packaging, with potential benefits for environmental impact, cost reduction, and supply chain efficiency. This master's thesis aims to investigate the diversity of reusable packaging systems available in the industry, categorize them based on key characteristics, and analyze how these differences might impact the economic and environmental performance of these systems. The student is tasked with creating an extensive list of reusable packaging systems currently employed in various industries and classifying these systems according to their fundamental characteristics. Subsequently, the student should formulate hypotheses concerning how the observed variations in reusable packaging systems might influence the key performance indicators. Finally, these hypotheses should be put to the test by optimizing a small-scale planning scenario.

This thesis requires a basic understanding of mathematical modeling and optimization.