

RETAIL OPERATIONS WITH PRODUCT RETURN: PROMOTION, ASSORTMENT, INVENTORY, AND PRICING

STATEMENT OF RESEARCH PROJECT

In the burgeoning landscape of e-commerce, the prevalence of product returns has emerged as a pivotal concern, influencing purchasing behaviors and operational strategies. Despite the salience of this issue, contemporary models remain unattuned to the profound impact of returns on customer decision-making. This project seeks to bridge this gap by formulating an integrated approach that encapsulates the nuances of e-commerce returns, advertising strategies, and the consequent implications on supply chain and inventory management.

We have the following four objectives:

1. **Redefine Models:** Explore how the possibility and cost of returns affect customers' purchasing decisions, particularly in the e-commerce sector.
2. **Strategizing Assortment and Pricing:** Utilizing the revised model, devise optimal strategies for product assortment and pricing that account for potential returns and their associated costs.
3. **Decipher the Promotion Conundrum:** Analyze the interplay between promotion and product returns. Does increased demand from promotion inherently result in a surge in returns, and if so, what are the net implications on sales and profitability?
4. **Comprehensive Multi-Product Strategy:** Delve into the complexities arising from the spillover effects of promoting multiple products simultaneously. Develop strategies that cater to inventory decisions for multiple products.

Anticipated Approach:

This research endeavor will amalgamate qualitative analysis, quantitative modeling, and empirical validation. Data-driven insights will be sourced from real-world companies, complemented by theoretical constructs like machine learning and robust optimization. The synthesis of these diverse methodologies aims to culminate in a holistic strategy that addresses the multifaceted challenges of e-commerce returns, promotions, and inventory management.

SCOPE OF WORK FOR SELECTED PHD STUDENT

The selected PhD student will immerse in a rigorous academic endeavor, one that straddles the worlds of e-commerce, operations, logistics, and transportation. The student will be at the nexus of theory and practice, developing models, testing them in real-world scenarios, and contributing to the broader academic community's understanding of e-commerce dynamics in the era of easy returns. The journey promises intensive learning, ample challenges, and the satisfaction of contributing significantly to a rapidly evolving field.