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Product Damaged Recovery Model for Supply Chain System to Maximize Profit

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Abstract: Supply chain disruptions are expensive and it is critical that decision makers (DM) take appropriate actions to decrease the negative effects to the supply chain system. During each stage of the supply chain the yield is different, because of the disruption during transit that will lead to random yield at the retailer. This research paper focuses on recovery of products that are damaged in transit. For the cost effective recovery of damaged products, different recovery models by considering all types of damage has been developed. Also, the application of these models in a network that recovers the damaged product in two- stages in the supply chain network is also detailed. A methodology for determining the cost effective recovery model to ensure maximum profit and meet the demand has been developed. A case study is used to demonstrate the effectiveness of the proposed methodology. Our results specify that the way of recovering the damaged product can lead to very different expected profits.

Keywords: Damage Recovery, Transportation Disruption, Damage Cost, Supply Chain Risk