

## On Disaggregation and Consolidation of Imperfect Quality Shipments in an Extended EPQ Model

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**Abstract :** For an extended EPQ model with random yield, the existent study revealed that both the disaggregating and consolidating shipment policies for the imperfect quality items are independent of holding cost, and recommended a model with economic benefit by comparing the least total cost for each of the three models investigated. To better capture the real situation, we generalize the existent study to include different holding costs for perfect and imperfect quality items. Through analysis, we show that the above shipment policies are dependent on holding costs. Furthermore, we derive a simple decision rule solely based on the thresholds of problem parameters to select a superior model. The results are illustrated analytically and numerically.

**Keywords :** consolidating shipments, disaggregating shipments, EPQ, imperfect quality, inventory

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