

Fuzzy Random Continuous Review Inventory Model with Imperfect Quality

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Abstract

This paper examines the continuous review inventory system with imperfect items under fuzzy random lead time demand and fuzzy annual demand. A fuzzy random model under the fuzzy defective rate is developed. The optimal order quantity which minimizes the total expected cost per year is derived by employing the expectation theory and signed distance method. Moreover, the influence of the fuzzy randomness of the lead time demand and the backorder rate on the optimal order quantity and the average annual total cost is analyzed via numerical examples.

Keywords: Inventory, fuzzy set, fuzzy random variable, imperfect quality, economic order quantity.