

A Replenishment Policy with Inventory-Dependent Demand and both Varying Deterioration and Holding Cost under Trade Credit Facilities

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Abstract: In business market situations, a grace period is offered to the customer for increasing the sales. In other words, it helps to reduce the stock-holding charges indirectly. In this study, the demand pattern is stock-dependent, deterioration and storage cost are both linearly dependent on time. Shortages in the completely backlogging case are also allowed to occur. The objective of the proposed research is to examine the effect of the proposed demand pattern under shortages within Economic Order Quantity (EOQ) framework. A user-friendly solution procedure is adopted to compute the decision variables of the problem. The model is validated with the help of a couple of numerical examples. Sensitivity analysis of one of the two numerical examples is carried out to illustrate the model.

Keywords: Backlogging, EOQ, Stock-dependent, Trade Credit, Varying Deterioration

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