

عنوان مقاله:

Retailer's replenishment policy for consumer technology products: a novel piece-wise linear approach

محل انتشار:

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خلاصه مقاله:

An inventory replenishment model for consumer technology products, with a trapezoidal demand pattern, is considered in this paper. An efficient piece-wise linear regression method is introduced to approximate the trapezoidal type demand function. In the proposed method, the demand dataset is divided into three exclusive stages, i.e., initial increase, steady-state, and final decrease. Then, a three-piece linear function is fitted to the trapezoidal type demand rate (a linear function to each stage) in such a way that minimizes the Sum of Square Error. Then, the optimal replenishment decision of each stage is determined so that the retailer's inventory costs (including holding cost and ordering cost) are minimized. Given the sales data, the developed method can enhance the performance of the inventory management system. The obtained results indicate the applicability of the presented approach for managing the finite life cycle of technological products.

کلمات کلیدی:

Consumer technology products, Replenishment policy, Trapezoidal demand, Piece-wise linear regression

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