Innovation Diffusion Based Inventory Model Under Repeat Purchase Condition

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Abstract

The loyalty to a brand is often reflected when the products are bought repeatedly by the consumer. In such case the concept of repeat purchasing is usually taken into account. The repeated adoption behavior of any product in the market largely affects the demand behavior and hence inventory policies are changed accordingly. It becomes more crucial when the policies are developed for new products. When new products are launched into the market the buyers such as innovators and imitators buy the products according to their timing of purchase. It is often seen that most of the innovators are involved in repeat purchasing of products depending upon their satisfactory dimensions. This paper develops an inventory model to discuss the economic ordering policies where demand function is governed by innovation diffusion process under repeat purchasing environment. The model also incorporates the effect of deterioration and shortages and establishes the relationship of different parameters with the economic ordering policies which are crucial to determine the optimal inventory policies.

Keywords: Economic order quantity; Innovation Diffusion; Deterioration; Shortages; Repeat Purchasers; Coefficient of Innovation; Optimal inventory policy.

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