

Probabilistic Fixed Lifetime Inventory Model For Continuous Demand Rate.

This paper deals with the development of expected cost model in a fixed lifetime inventory system. In this type of inventory, items in stock are expected to be used before the expiring date. The system consists of an age-wise profile of items (state space). The size of the space is directly proportional to the life of the items. Consequently, the inventory management is faced with lots of challenges otherwise item will be outdated, additional cost such as holding cost, shortage cost and ordering cost will be incurred. Optimal solutions to the fixed lifetime of perishable inventory problem cannot be realized in practice due to their computational complexity arising from the fact that exact formulation of the problem requires information on the age distribution of the items in inventory and the corresponding quantity of items of each age. Hence there is a gap between theoretical results and practical requirements for computational results. The purpose of this study is to minimize the proposed expected cost model, an interval of the optimal value of inventory level (s) was derived Hence we bridge the gap between theoretical results and practical requirements for computational results. The expected holding cost, expected shortage cost, expected outdates cost, ordering cost were computed and were applied to determine the expected cost for the fixed lifetime inventory system.