

ABSTRACT

One of the activity that can be done to control costs in production activities is by optimizing the level of supply and demand. Dynamic Lot Sizing Model is one method to get a minimum inventory level which in essence can reach the minimum costs that must be incurred by the company. This model seeks to eliminate the assumption that fixed demand level is calculated the same for each period that is commonly used in the EOQ model. This paper consider dynamic lot sizing, stochastic demand, by selecting one supplier, each supplier has quantity discount system and also transportation cost. In this case, backlogs are permitted and the standard normal loss function used to represent the standardized units number of shortage function. By having an objective function and some constraints where the variables can be integer and biner, then solving using MINLP is a good choice for this formulation model, with commercial optimization software. Study case performed in manufacturing, and model can help to determine quantity order to purchase, with specific supplier and for each period. The goal to be achieved is to obtain the minimum costs from the purchase cost, order cost, backloging cost, handling cost and transportation cost.

Keyword : Lot-sizing, Quantity Discount, Inventory Control.