

An Inventory Model with Dynamic Advertising Effects

Alok Kumar

Assistant Professor

FORE School of Management

New Delhi – 110016

e-mail: alok@fsm.ac.in

Abstract

The promotional effort in the form of advertising plays a pivotal role in the diffusion of products among the social systems. It has been observed that demand of the products and moreover new products largely depends upon the different kinds of advertising effects. Also, it is experienced that demand of new products is highly dynamic. Therefore, to keep pace with the dynamic behavior of demand of new products it becomes important to make strategy over the level of advertising expenditure. The paper describes an inventory model for new products where demand of the products varies with time under the external influence of dynamic advertising effects. The objective of the paper is to develop an optimal schedule for the inventory model such as the optimal cycle length, the optimal total cost per unit time and the optimum order quantity under the environment as discussed above. A numerical example has been performed to know the effectiveness of the model. A comprehensive sensitivity analysis with respect to different parameters has been shown in the numerical example section.

Key Words: External influence, New products, Economic order quantity, Optimal inventory Policy, Dynamic advertising effects, Promotional efforts.

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