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Optimal Retail Price, Replenishment Time and Payment Scenario Under Biddable Two-Part Trade Credit for Price-Sensitive Trapezoidal Demand

Nita H. Shah[1], Digeshkumar B. Shah[2] and Dushyantkumar G. Patel[3]

[1]Department of Mathematics,
Gujarat University, Ahmedabad-380009, Gujarat, India

[2]Department of Mathematics
L.D. Engg. College, Ahmedabad- 380015, Gujarat, India

[3]Department of Mathematics
Government Polytechnic for Girls, Ahmedabad- 380015, Gujarat, India

[1]nitahshah@gmail.com, [2]digeshshah2003@yahoo.co.in, [3]dushyantpatel_1981@yahoo.co.in

Abstract. The most of the articles available in literature on inventory modeling under two-part trade credit assume that the buyer either pays for all the procured items within a shorter allowable credit period and avails a cash discount or settles the account due for all the purchased items within a long allowable credit period at the regular price. Here, we analyze the decision policy when buyer may pay any fraction of purchase cost within an allowable shorter credit period and receives a cash discount and then the remaining balance is paid within the long allowable credit period. The demand rate of item is considered to be price-sensitive trapezoidal. A decision policy is worked out for the buyer to determine the optimal retail price, cycle time and payment scenario. It is observed that the buyer is advantageous under biddable two-part trade credit than from the extreme payment plan in the available literature.

Keywords. Inventory, price-sensitive trapezoidal demand, two-part trade credit financing, biddable payment

AMS (MOS) subject classification: 90 A, 90 B

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