A Fuzzy Multi-item Displayed Inventory Model with Generator Cost Using Trapezoidal and Pentagonal Fuzzy Number under Space Constraint

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ABSTRACT

A displayed inventory model with space constraint using nearest interval approximation of triangular fuzzy number has been considered by Roy and Mandal. They have obtained the decision variables order quantity and display inventory level by using fuzzy geometric programming technique. Till now, no literature is available for the Pentagonal fuzzy number. In this Paper, the pentagonal fuzzy number is defined, and its properties are given. Lately, power scarcity is affecting the small-scale industries such as Bakery, Restaurants, Packaged food product companies, Retail showrooms etc. To solve this problem, generators are being installed, it incurs a cost. So that, this paper introduces the cost as 'Alternative power supply cost' (Generator cost). So, the display inventory model by using pentagonal fuzzy number with generator cost has been considered. The parameters involved in this paper are assumed to be imprecise in nature and are represented by trapezoidal and pentagonal fuzzy numbers. The different types of left and right membership functions are taken. The model is then reduced to multi-objective decision-making inventory problem and is solved by fuzzy geometric programming technique.

Keywords: Fuzzy Inventory model, Pentagonal fuzzy number, Fuzzy geometric programming