Cost Analysis on a Fuzzy Inventory Model with Ranking of Circumcenter of the Centroid of Pentagonal Fuzzy Number

K. Sumithra

Department of Mathematics, Auxilium College of Arts and Science for Women, Regunathapuram, India

*Corresponding author: abirishp1986@gmail.com

ABSTRACT

In many applications, a ranking of fuzzy numbers is an important and prerequisite procedure for decision makers. Firstly, in 1976, Jain proposed a method for ranking fuzzy numbers, and then a large variety of methods were developed to rank fuzzy numbers.

Recently Nirmal Kumar Mandal (2012), worked out the fuzzy economic order quantity model with ranking a triangular fuzzy number. In this paper, a fuzzy inventory model with alternative power supply cost (generator cost) is explored. The cost parameters and demand are represented by a pentagonal fuzzy number and also a new method is proposed which deals with the ranking pentagonal fuzzy number using circumcenter of the centroid. Further, this method uses an index of optimism to reflect the decision maker's optimistic attitude and also uses an index of modality that represents the neutrality of the decision maker. The model is worked out through a fuzzy non-linear programming technique.

Keywords: Fuzzy set, Fuzzy numbers, Pentagonal fuzzy number

©2023 Copyright held by the author(s). Published by AIJR Publisher in "Abstracts of the International Conference on Recent Trends in Mathematics and Computer Science 2023" (ICRTMCS-2023), 19-21 October 2023. Organized by the Department of Mathematics and Computer Science, Auxilium College of Arts and Science for Women, Tamil Nadu, India.

DOI: 10.21467/abstracts.158 ISBN: 978-81-965621-0-6 (eBook)