In this paper a fuzzy inventory model is developed for deteriorating items with power demand rate. Shortages are allowed and partially backlogged. The holding cost is assumed to be time dependent. The cost components are considered as trapezoidal fuzzy numbers. The objective of this paper is to develop an inventory model in a fuzzy environment, minimize the total cost and thereby derive optimal policies. The total cost is defuzzified using Graded mean representation, and Signed distance methods. The values obtained by these methods are compared with the help of numerical examples. The convexity of the cost function is depicted graphically. The formulated model is tested for sensitivity by studying the effect of change in parameters.

References

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Index Terms

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Keywords

Defuzzification, Deterioration, Graded mean representation method, Optimization, Partial backlogging, Power Demand, Shortages, Signed Distance Method, and Trapezoidal Fuzzy Number.