

## **Possibility Programming Application in Analysis of Fuzzy Knapsack Problems**

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### **Abstract**

This paper investigates knapsack problems in which all of the weight coefficients in the objective function and in the constraints are fuzzy numbers. Also, the knapsack's capacity is not known exactly and is represented by a fuzzy number. The approach in this paper for dealing with this kind of problem is based on Buckley's concept. But, instead of trying to obtain the possibility distribution, we try to solve the problem with a given possibility level. As a result, we can compare this approach with distance ranking method that was used for defuzzifying fuzzy knapsack problem by Lin and Yao.

### **Keywords**

Fuzzy number, possibility theory, knapsack problem, multiple choice knapsack problem, Multi constraint 0/1 knapsack problem, Multiple criteria knapsack problem.