

EFFECTIVENESS OF THE MULTI OBJECTIVE LINEAR PROGRAMMING MODEL UNDER TWO FUZZY ENVIRONMENTS

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Transportation planning and related decision making are quite difficult tasks with actual data. In such instances, multi objective fuzzy linear programming models with fuzzy objective functions and constraints may be useful to determine the optimal compromise solution. This study is conducted to find the effectiveness of the Multi Objective Linear Programming (MOLP) model under two fuzzy environments: (a) when the model has fuzzy objective functions with crisp constraints (b) when the model has fuzzy objective functions and fuzzy constraints. Our objective is to investigate how effectively the model behaves under these two environments. For this purpose, a transportation planning decision problem is chosen to minimize the total production transportation costs, the total delivery time subject to available supply, machine usage at each source and forecast demand and warehouse space at each destination.

In the first model the objective functions, total production and transportation costs and total delivery time as fuzzy objective functions will be in consideration and in the second model the above two fuzzy objective functions with fuzzy supply and fuzzy demand constraints will be assessed. The optimal compromise solution obtained by these two models will be analysed to find the effectiveness of the model under each environment.