For the Quadratic Knapsack (Standard by G.Gallo, defined in the article *Quadratic knapsack problems*, 1977):

- Concept of **matrix of profit**
- Profit (and synergies) are **random numbers** between [1,100]
- Synergies are equal to 0 with **probability p**
- Costs are **random numbers** between [1,50]
- Capacity is a **random number** between [50, Sum(costs)]

For the Robust Knapsack (Standard by F.Taniguchi, defined in the article *Heuristic and exact algorithms for the max-min optimization of the multi-scenario knapsack problem*, 2006)

- Independent and uniform random integers
- Profit (nominal) are **random numbers** between [1,100]
- Costs are **random numbers** between [1,100]
- A **positive parameter d** is defined in order to obtain lower and upper costs as [(1-d) p , (1+d) p]
- The parameter d (on this experiment) has been set to 0.3, 0.6 and 0.9.
- The capacity is obtained as **sum(costs)/m**, where m is either 2, 3 or 4.

N.B: consider that the second article (Taniguchi) was meant to solve a slightly different problem on respect to our robust one (there were possible scenarios s, and the aim was maximizing the profit in the worst scenario) –> probably we just considered directly the worst one, while there they also had to establish which was it.