Augmenting alpha means, in effect, relaxing the last k constraints, so we expect a decrease in the value of the objective function if we raise alpha, until we reach the point where the constraints become inactive and the objective value is independent from alpha.  
We have proceeded to plot some tendencies of the alpha factor to better understand its influence inside our model.

The code was not optimized for speed, as we had no concern about the elapsed time, which was negligible in all cases. We prioritized so to write it in an easier to read way.

The epsilon in the second model makes the second part of the objective function irrelevant, as all the distances are of a 10^0-10^1 order. Thus, the second objective function can be seen as a pure minimax function. If we raised epsilon to a 10^-2 order, we could start seeing a real impact of the epsilon on the objective function, thus building a new objective function which takes in account both the global optimum and the benefices of the worst-served cities.

The idea for the third model is to set a j\_i variable which tells us whether the city i is a hub or not. Afterwards, we have to consider all the x\_i\_j variables as we don’t know where the hub is.

Correlate the PE with the “equality” of the optimum distribution. (regression with Min-Max satisfaction and PE)

Rawls?