I want to maximize G given below:

$$G=\frac{\sum_{i=1}^{m}\sum_{j=1}^{n}C_{j,i}\beta_{i0}w_j}{\sum_{i=1}^{m}\sum_{j=1}^{n}C_{j,i}\beta_{i0}}$$

where

$$C_{j,i}=T_{j,i}\left(\frac{1-\alpha_{j,i}}{\alpha_{j,i}}\right)$$

$$T_{j,i}=M_{F,j}\delta_{Fi}\alpha_{j,i}+\alpha_{j,i}\sum_{k=1}^{m}T_{j,k}\left[\left(\frac{1-\alpha_{j,i}}{\alpha_{j,i}}\right)\beta_{ki}+\delta_{ki}\right]$$

$M_{F,j}$, m, and n are known. The parameters, α, β, and δ, should be chosen in a way that G becomes maximized.

There are a number of constraints for this optimization problem that are given below:

$$\sum_{i=1}^{m}\delta_{Fi}=1$$

$$\sum_{i=1}^{m}\delta_{ki}+\delta_{k0}=1$$

$$\sum_{i=1}^{m}\beta_{ki}+\beta_{k0}=1$$

$$0\le(\delta,\beta)\le 1$$

$$0\le\alpha_{ji}\le 1$$