Sets and Indices:

I : Set of all available tasks, $i \in I$

M : Set of all available Workforces, $m \in M$

Parameters:

c_i : Probable financial loss due to task i

p_i : Probable non-financial loss due to task i

T_m : Available time in hours for workforce m

a_{im} : time consumed by workforce m to complete task i

Variables:

y_{im} : is equal to 1 if workforce m is assigned to task i

w_i : is equal to 1 if task i is selected to be performed

Cost function:

$$Max\{\alpha_1 \times F_1 + \alpha_2 \times F_2\}$$

Where:

$F_1 = \sum_{i \in I} c_i w_i$, Cost function of financial loss that if selected, leads to highest financial loss

$F_2 = \sum_{i \in I} p_i w_i$, Cost function of non-financial loss that if selected, leads to loss of reputation

Constraints:

$$w_i = \{0,1\} \quad \forall i \in I$$

$$y_{im} = \{0,1\} \quad \forall i \in I, m \in M$$

To prevent assigning a task to different workforces, and guarantees if an activity is chosen to be fulfilled

$$\sum_{m \in M} y_{im} = w_i \quad \forall i$$

Fact of workforce time limitation; therefore, time to fulfill a task cannot be more than the total available time of each workforce:

$$\max \sum_{i \in I} a_{im} y_{im} \leq T_m \quad \forall m \in M$$