

$$\begin{aligned}
& \max \quad \sum_{i=1}^n \left[ 1 - \prod_{j=1}^{w_i} (1 - P_{ij}) \right] \\
& \text{s.t.} \quad P_{ij} = \alpha \cdot S_{ij} + \beta \\
& \quad S_{ij} = \frac{C_i}{(d_{ij} + h_i) E_i} \\
& \quad C_i = \left( P_0 \cdot \frac{1}{1 + a \cdot MD_i} \cdot \frac{1}{1 + b \cdot TD_i} + H_i \right) E_i \\
& \quad \sum_{i=1}^n C_i \leq 57707.5 \\
& \quad a > 0 \\
& \quad b > 0 \\
& \quad P_0 > 0 \\
& \max \quad \sum_{i=1}^{n'} \left[ 1 - \prod_{j=1}^{w'_i} (1 - P_{ij}) \right] \\
& \text{s.t.} \quad P_{ij} = \alpha \cdot S_{ij} + \beta \\
& \quad S_{ij} = \frac{C'_i}{(\min_{1 \leq k \leq m_i} d_{i_k j} + \sum_{k=1}^{m_i} h_{i_k} + m_i - 1) E_i} \\
& \quad C'_i = \sum_{k=1}^{m_i} C_{i_k} \cdot \frac{\min_{1 \leq k \leq m_i} d_{i_k j} + \sum_{k=1}^{m_i} h_{i_k} + m_i - 1}{\sum_{k=1}^{m_i} (d_{i_k j} + h_{i_k})} \\
& \quad C_{i_k} = \left( P_0 \cdot \frac{1}{1 + a \cdot MD_{i_k}} \cdot \frac{1}{1 + b \cdot TD_{i_k}} + H_{i_k} \right) E_{i_k}, \\
& \quad i \in \{1, \dots, n'\}, \quad k \in \{1, \dots, m_i\} \\
& \quad \sum_{i=1}^{n'} C'_i \leq 57707.5 \\
& \quad a > 0, \quad b > 0, \quad P_0 > 0
\end{aligned}$$