## Positive effects

$$z_{i,p+} = \sum_{j,j\neq i}^{N} (1 - \gamma_i) \left( x_{ij}^{(t)} \ m_{ij}^{(t)} \right) + \gamma_i \theta_i$$

## **Negative effects**

$$z_{i,p-} = \sum_{j,j\neq i}^{N} (1-\gamma_i) \left[ \left( x_{ij}^{(t)} \pm \varepsilon_{ij} \right) \left( v_{ij}^{(t)} \delta_{ij} \right) \right] + \gamma_i \theta_i$$