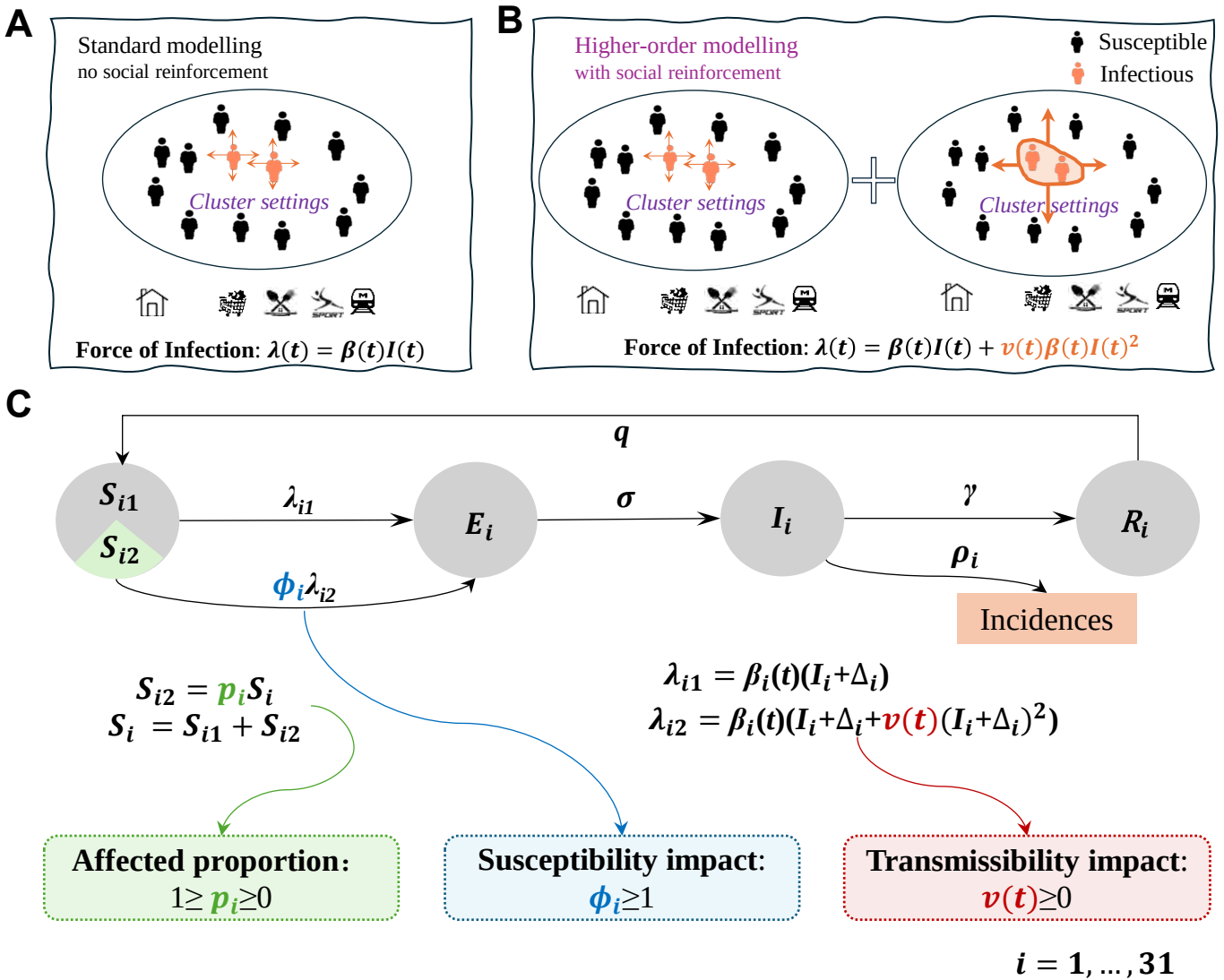
A
Standard modelling
no social reinforcement
Cluster settings
Force of Infection: $\lambda(t) = \beta(t)I(t)$
B
Higher-order modelling
with social reinforcement
Susceptible
Infectious
Cluster settings
Cluster settings
Force of Infection: $\lambda(t) = \beta(t)I(t) + v(t)\beta(t)I(t)^2$
C
q
S_{i1}
S_{i2}
λ_{i1}
E_i
σ
I_i
γ
R_i
ρ_i
Incidences
$\phi_i\lambda_{i2}$
$S_{i2} = p_i S_i$
$S_i = S_{i1} + S_{i2}$
$\lambda_{i1} = \beta_i(t)(I_i+\Delta_i)$
$\lambda_{i2} = \beta_i(t)(I_i+\Delta_i+v(t)(I_i+\Delta_i)^2)$
Affected proportion:
$1 \geq p_i \geq 0$
Susceptibility impact:
$\phi_i \geq 1$
Transmissibility impact:
$v(t) \geq 0$
$i = 1, \ldots, 31$