

Input data

Facebook Movement (y)
Facebook Population (P)



Relative deprivation



Population (P_{WP})



Functional urban area
boundaries

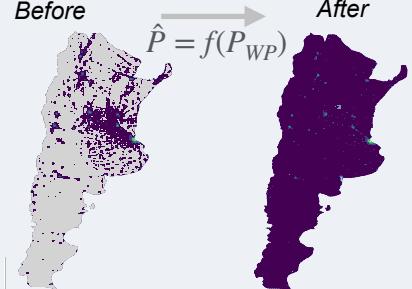


GHS-FUA

1. Mobility data calibration

(i) Facebook population calibration

Before



After

(ii) Facebook mobility calibration

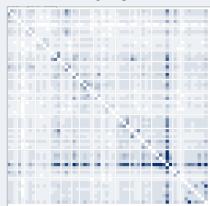
Spatial interaction modelling

$$\hat{y}_{OD} = f(\hat{P}_O, \hat{P}_D, d_{OD}, X)$$

Sparse

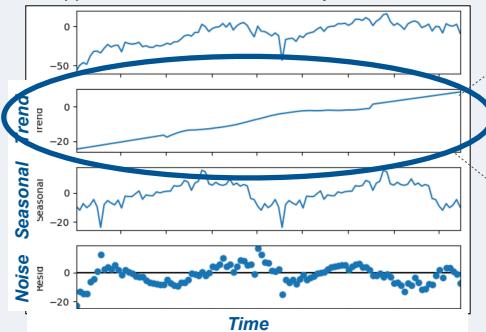


Fuller

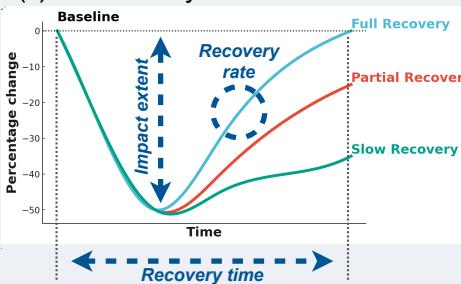


2. Mobility trajectories of recovery

(i) Time series decomposition



(ii) Trend analysis



Trajectories

Population density

Relative deprivation

3. Multilevel modelling

Statistical association



Mobility percentage
change

$$\hat{y}_{OD}^{\%} = f(O, T)$$

Origin attributes

Time unit

Fixed + Random effects

