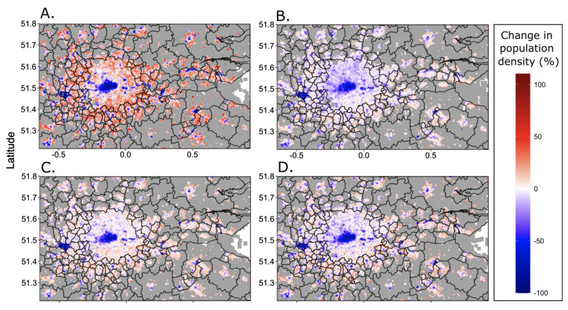
Case studies on spatial demography using Facebook data

In collaboration with the Data for Good programme at Meta, we have explored aggregated, de-identified Facebook population and mobility datasets during crises to understand the spatial distribution and mobility dynamics of populations in response to disease outbreaks and natural disasters. Facebook population datasets show the number of Facebook app users who have enabled Location Services and are observed in a location following a crisis, compared with the pre-crisis baseline period. Facebook mobility datasets show the number of users moving from one area to another, or the range of movement amongst users away from the area where they live. Below are some studies conducted by WorldPop.

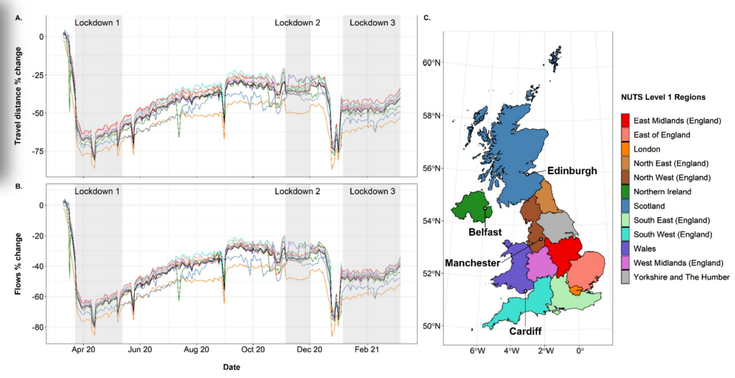
Using Facebook data to understand the effects of social distancing interventions on COVID-19

As partners of the Global COVID-19 Mobility Data Network, we produced regular analyses of population dynamics and movement patterns to support decision-makers across the UK government on how well social distancing interventions are working.



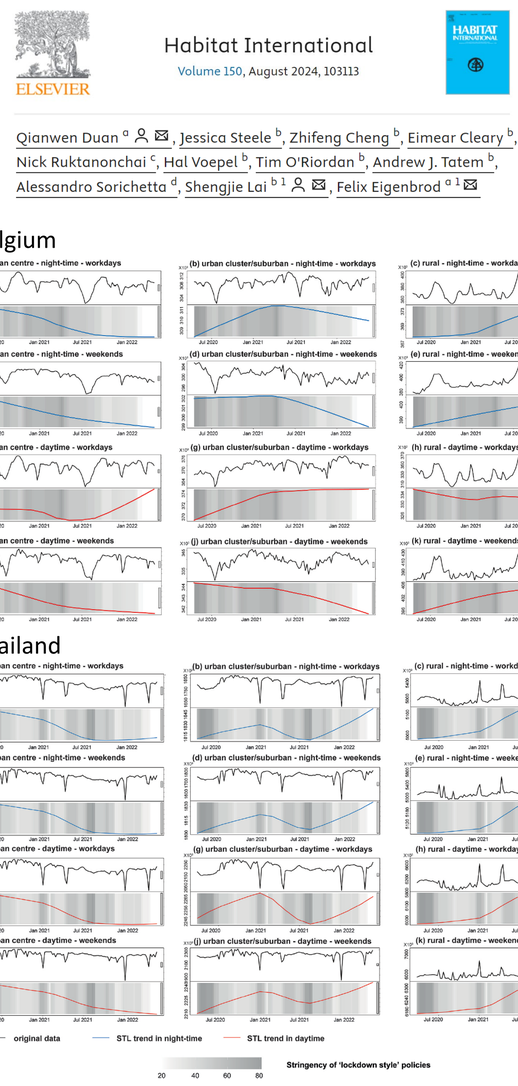
Relative changes in population density of daytime Facebook users within London under different mobility restrictions

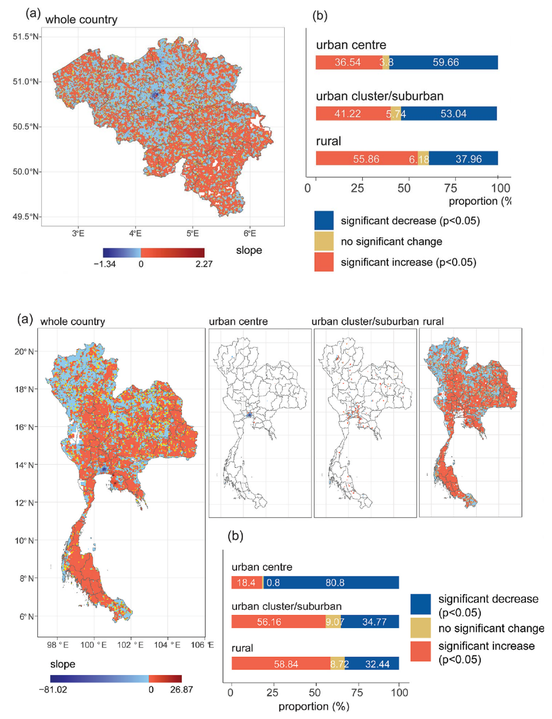
https://www.worldpop.org/covid19/uk_population_mobility/



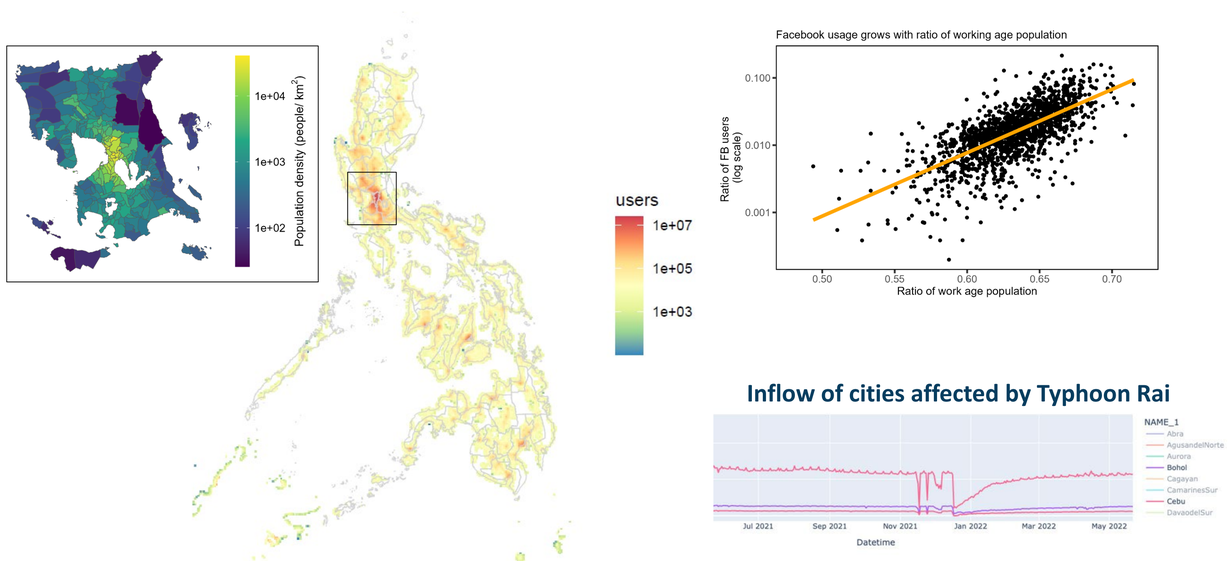
Identifying counter-urbanisation using Facebook's user count data

In Belgium and Thailand, rural residents (night-time user counts) increased by 1.80% and 2.14%, respectively, from March 2020 to May 2022, while urban residents decreased by 3.08% and 5.04%. However, the counter-urbanisation in Thailand appears to be transitory.





Population estimation using Facebook geolocated user data in Philippines



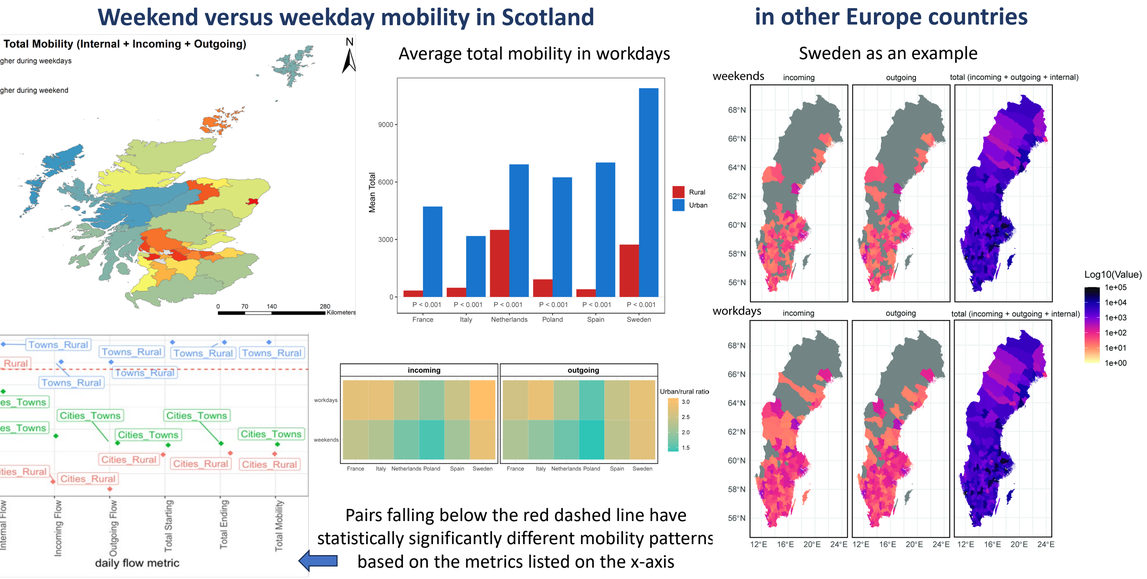
Jun H, Andrich P et al (in preparation)

Both the inflow & outflow shows similar trend (Bohol, Cebu, Surigao del Norte) - Sudden drop and gradual increase

Defining urban-rural mobility and connectivity in Europe for the GRANULAR project

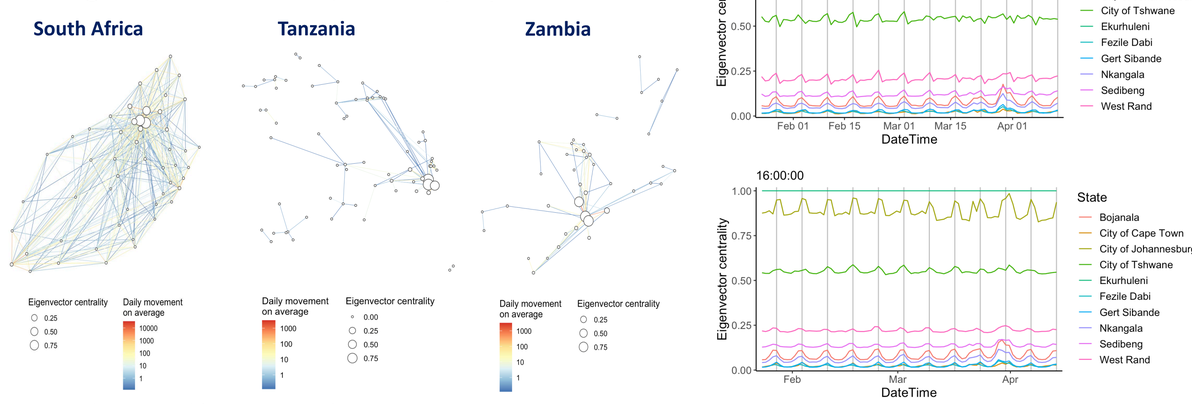
GRANULAR is generating new datasets, tools and methods to better understand rural areas in Europe. We are using Facebook user movement and activity space data to describe and predict human mobility and connectivity between rural, peri-urban, and urban areas across Europe.

Digital platform: data and tools at different granularity.



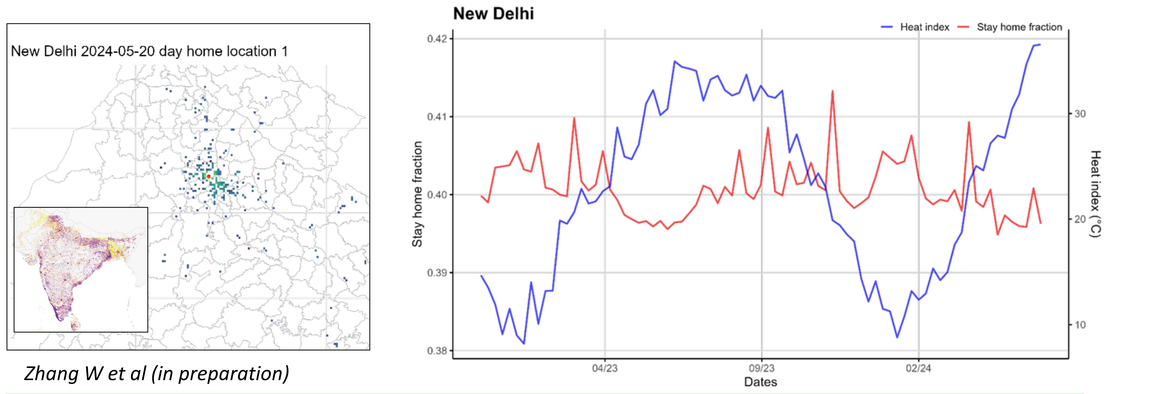
Exploring mobility patterns and activity spaces during disease outbreaks and natural disasters

The weighted degree (flow of absolute number of people) for major cities is higher on weekdays than weekends. Eigenvector centrality and PageRank are higher at weekends, January-April 2024.



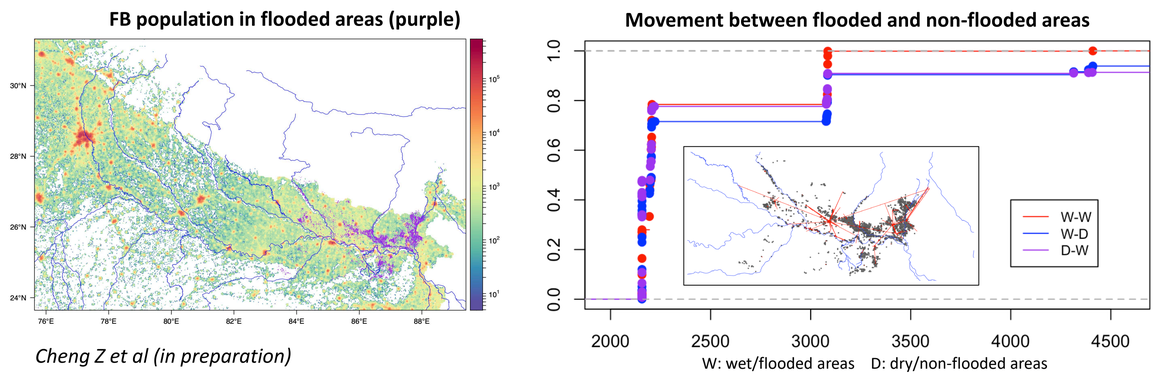
Steel J, Cheng Z et al (in preparation)

Exploring population activity space changes under heat waves in India



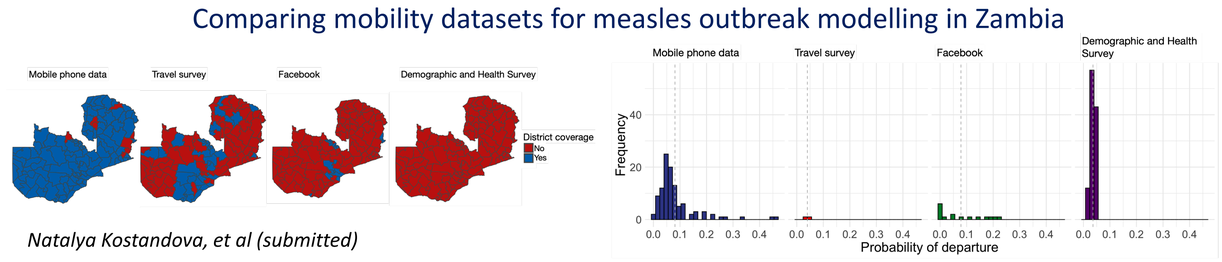
Zhang W et al (in preparation)

Extracting flood-affected population and mobility data during the 2023 monsoon season in India



Cheng Z et al (in preparation)

Comparing mobility datasets for measles outbreak modelling in Zambia



Natalya Kostandova, et al (submitted)