

Correcting biases in mobile-phone mobility data: the DEBIAS framework

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What you need before the course starts

! Important

Please do this before the first session. We will not have time during the course to help everyone complete software installation, and we will begin the practical work immediately.

You will need a laptop with the software below installed and working before the first session. Please make sure everything is installed and opens correctly in advance so you can take part in the practical work from the start. You should install:

- [R](#)
- [RStudio Desktop](#)
- [Quarto](#)

After installing these, please check that RStudio opens successfully and detects your R installation, and that Quarto is installed and available to RStudio.

R package dependencies

The course uses several R packages for data manipulation, spatial analysis, mapping and modelling. To install them, open RStudio, find the Console pane, copy and paste the code below into the Console. Then, press Enter and wait for the installation to finish.

```
install.packages(c(
  "tidyverse",
  "sf",
  "tmap",
  "viridis",
  "ggthemes",
  "spData",
  "gstat",
  "lubridate",
  "broom",
  "scales",
  "spdep",
  "spatialreg"
))
```

Two additional packages appear in the workshop materials but usually do not need separate installation because they are distributed with R:

- MASS
- grid

If a required package is missing on your machine, R will output an error message when you try to run the code.

Useful references: [Installing packages in R](#), [sf package](#), [ggplot2 documentation](#), [spdep package](#) and [spatialreg package](#).