

Introduction to R

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Course instructors

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Zoom

- ▶ Please use your preferred name consistently
- ▶ Please mute your microphone when not speaking
- ▶ Feel free to turn off video
- ▶ Feel free to interrupt me any time (unmute first)...
- ▶ ...for instance, if you cannot hear me well...
- ▶ ...but be aware that there might be some delay
- ▶ I might miss things you write in the Zoom chat!

Materials

Materials will be available from GitHub, also mirrored on OSF:

- ▶ <https://github.com/christiandudel/IIPS2021>
- ▶ <https://osf.io/dnm8y/>

What will be covered in this course?

- ▶ Software: R and RStudio
- ▶ First part of the course (CD) will introduce basics
- ▶ Second part (SK) will teach spatial analysis

Prerequisites

- ▶ Basic demographic knowledge (e.g., you know what a 'rate' is)
- ▶ Basic statistical knowledge (e.g., you know what a 'mean' is)
- ▶ First experience using statistical software (Stata, Excel, SAS, SPSS, R, ...)

Exercises

- ▶ There will be some (voluntary!) exercises to solve available on GitHub/OSF
- ▶ Solutions will be available online

What is R?

- ▶ R is an open source statistical programming language
- ▶ First release in 1995
- ▶ Used for data analysis and statistical programming

Why use R?

- ▶ Free, open source
- ▶ Can easily be extended
- ▶ More than 16,000 packages available
- ▶ Commonly used in both science and industry
- ▶ Tons of R-related materials: Books, journals, conferences, forums, tutorials. . .
- ▶ Many methods are already implemented in R

Why use RStudio?

- ▶ RStudio comes on top of R
- ▶ RStudio is a tool to use R more efficiently
- ▶ Features:
 - ▶ Syntax highlighting, code folding
 - ▶ Project management (e.g., GitHub)
 - ▶ Markdown support
 - ▶ ...

Disclaimer

- ▶ RStudio is not the only IDE/editor for R (ESS, RKWward, Tinn-R, ...)
- ▶ R can be used in many different ways
- ▶ Example: base R vs tidyverse vs data.table vs specialized packages
- ▶ I do things in certain ways, and my teaching follows that
- ▶ This does not mean that my solutions are the only or the best way to do things

What do you need to get started?

- ▶ R: <https://cran.r-project.org/>
- ▶ R-Studio: <https://www.rstudio.com/>