Unit 1 - Introduction to R

Flinta* R-Tutorium

WU Wien

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Overview

1. Welcome Round
2. What can you expect?
3. General Intro to R

Welcome round

- Name, pronouns, study program...
- Prior experience with R?
- What are your expectations?

Who am I?

- Hannah Massenbauer (she/her), Economics master (done) & Philosophy (unfinished)
- Research Fellow at Bocconi University
- Research Focus: Applied Econometrics in the fields of inequality, labor and education
- Initially, struggled with R a lot, in the meantime accomplished a research project in R
  $\Rightarrow$ Now I want to make your journey with R more enjoyable :)

What can you expect?

In four units I will cover with you the most important codes.
Semester plan:

1. Unit: Intro and Basics
2. Unit: Descriptives
3. Unit: Graphs
4. Unit: Basic Econometrics (Statistics)

Goal of the tutorium

Give you the tools to find solutions and have success moments

So what is R?

A software in which we analyse data.

Data

Observations about the world and we try to make sense of them

We write *commands*, such that R applies them to the data.

Examples

We want to know the average height of all participants in the classroom

I will show you the most useful codes to start working with data and to get a feeling how R works. You will encounter many errors, but I will try to equip you with the tools necessary to overcome them.

Procedure

1. We look at R
2. I prepared files with the most important code (annotated)
3. We go step-by-step through the code
4. Small exercise for in class

What to do if you struggle?

- Read the error, maybe it is just a tipping error.
- Use ChatGPT
- Read helpfiles
- Ask a friend / neighbour
- Ask me

What else?

- You can also consult me outside the tutorium with any questions
- All materials you can find here: `https://github.com/hmassenb/R-Tutorium`
- I am also here to answer other questions of yours regarding studying, help for other softwares (LaTeX, Stata, Github..), or other questions you have :)

Glossary

- **numeric:** Refers to a data type that represents real numbers (e.g.: -3, 2, 5.8)
- **character:** Refers to a data type that represents text or strings (e.g.: "Hi", "M", "W")
- **integer:** Refers to a data type that represents whole numbers without any decimal places (e.g.: 1,2,3,4)
- **vector:** A data structure that can store a sequence of values of the same data type. E.g. we have two data points $a_{11} = 1$ and $a_{21} = 2$

$$a_{i1} = \begin{pmatrix} 1 \\ 2 \end{pmatrix} \tag{1}$$

- **matrix:** A more-dimensional data structure that consists of multiple columns and rows.

$$A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix} = \begin{bmatrix} 1 & a_{12} \\ 2 & a_{22} \end{bmatrix} \tag{2}$$