

Title: The Basics of R

Instructor: Georg Krammer

Language: English

Suggested duration: 12 hours (2 days, 9am - 4pm with one hour lunchbreak)

Number of participants: 15 to max. 20

Prerequisites – Participants:

1. No prior knowledge of R is needed.
2. Basis statistical knowledge is welcome.
3. A working understanding of SPSS is welcome.

Prerequisites – IT:

1. PC or laptop per participant with installed
 - a. R (<https://cran.r-project.org/>)
 - b. RStudio (<https://www.rstudio.com/products/rstudio/download/>)
2. Beamer with PC (preferably with Windows) and also both programs installed

Description:

R is a software environment for statistical computing and graphics, which is steadily being advanced. At the moment (8.4.2016), there are 8231 packages available for R, each one providing additional features. To be able to make full use this vastness of features, a basic understanding of the R-language is necessary. Once this R-language is understood, the full power of R with all its features becomes accessible.

The aim of this introductory workshop on the basics of R is to provide a basic understanding of R and its language. At the end of the workshop, the participants will have sufficient understand of R and its language to use R within their respective fields and for their respective applications. No statistical topic will be dwelled into in-depth, so that the focus can rest on the basic understanding of R and its language.

Outline:

1. Introduction and examples of application
 - a. R vs. RStudio
 - b. Helpful links and sources
 - c. The packages of R
 - d. The functions of R
2. Basic operators
3. Types of objects
4. Logic and indexing
5. Descriptive statistics
6. t-Tests
7. Correlations

After the general introduction (1.), the topics will be shown and explained in R. After each topic, an exercise in R will follow (datasets will be provided).