

INTRODUCTION TO

GENERAL DESCRIPTION

This workshop focuses on how to effectively use the R software environment. To do so, this workshop used Rstudio as an integrated development environment (IDE). The workshop focuses on the software environment itself and not on developing data analysis skills. Several lab exercises will allow participants to apply the information learned and practice the procedures presented during the workshop.

OBJECTIVES

- Have a basic knowledge of the characteristics and structure of the R language.
- Acquire basic skills in data manipulation using R
- Ability to perform basic statistical analyses (t-test, linear regression)
- Acquire basic skills in data and model visualization.

At the end of this training, participants will have a good knowledge of the R software package which will allow them to perform simple processing (management, analysis, visualization) on databases.

PRÉREQUIS

A basic knowledge of spreadsheet-type (e.g., Excel) or data analysis (e.g., SPSS, SAS, STATA) software is recommended to get the most out of this workshop. In addition, having already manipulated and analyzed data is essential. A knowledge of the basic principles of fundamental statistical analysis techniques (e.g., linear model, factor analysis) is suggested.

FORMATRICE

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COURSE OUTLINE

DAY 1 General presentation of the R environment

- R packages
- R's environment and structure
- Getting help
- A first glance at Rstudio.

Importing data

- R objects
- Importing external data
- Types of variables

Exporting data

- Exporting a dataset

- Exporting to a document

Data manipulation and management

- Selecting observations and variables
- Transforming and recoding variables

Exercise #1

DAY 2 Data manipulation and management (end)

- Transforming and recoding variables (end)

Summarising and describing data

- Descriptive statistics

Basic data analysis

- Correlations
- t-test
- Linear regression

Basic data visualization

- Simple graphs (x-y plots, histograms)

Exercise #2

ADDITIONAL RESOURCES

A list of references and other educational resources will be provided.