A primer in R for Stata and SPSS users

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Why R?

Pros of Stata, SPSS, SAS

1. User friendly
2. Easy to experiment
3. Big data

Pros of R

1. Access to recently developed research methods
   - nbpMatching package only available with R
2. Reproducibility
3. Customizable plots
4. Availability of source code
5. Free outside academia

Biggest Con of R

- Learning curve of command-line tools
  - RStudio helps

Examining RStudio

Setting the working directory, the default location for reading and writing files

- Session -> Set Working Directory -> Choose Directory...

See: ?setwd, ?getwd

- Panels (RStudio -> Preferences... -> Pane Layout)

1. Source: R script containing code
2. Console: Interactive R session
3. Environment: List of variables and functions
4. History: History of commands from interactive session
5. Files: Built-in file manager
6. Plots: Generated plots
7. Packages: Package management
8. Help: Documentation
9. Viewer: View local web content

Importing Datasets

- Delimited, fixed-width, binary files
  - CSV (Comma separated values) are common
  - Tab-delimited, and others
  - Fixed-width need column widths
  - Options for Stata and SPSS
- Environment pane: Import Dataset
  - Import from file or URL
- Examine column information
- View dataset

R Data Import/Export

Function read.spss can read files created by the 'save' and 'export' commands in SPSS. It returns a list with one component for each variable in the saved data set. SPSS variables with value labels are optionally converted to R factors.

Stata .dta files are a binary file format. Files from versions 5 up to 11 of Stata can be read and written by functions read.dta and write.dta. Stata variables with value labels are optionally converted to (and from) R factors. Stata version 12 by default writes 'format-115 datasets': read.dta currently may not be able to read those.

Variables

- Numbers: numeric
- Strings: character
- Boolean: logical (True and False)
- Datasets: data.frame, matrix
- Vectors and Lists

Functions

- Built-in commands
- User-defined
- Arguments
- Tab-completion

See: ?apropos

- Packages pane: load and install

See: ?library, ?require, ?install.packages, ?update.packages, ?remove.packages

- Help pane: help is available

Example: help(package="foreign")

- Plots pane: export with specified format and size