

INSTALLING R AND RSTUDIO INTO YOUR SYSTEM

R is a free statistical package that can be downloaded and installed from the website: <http://www.r-project.org>. Once you get to the website, click on [download R](#). You will be directed to a webpage titled "CRAN Mirrors". You should click on the URL representing the location that is close to you, which will direct you to a page with download links to R for Linux, MacOS X and Windows.

INSTALLING R

IF YOU ARE A PC USER, FOLLOW THESE STEPS:

(Note: If you have a Windows emulator on your Mac machine, such as VMware Fusion, you may also install the Windows version on your Mac computer.)

1. Select a mirror site (US, or anywhere you want)
2. Click on "Download R for Windows"
3. Select the "R-3.1.2-mavericks.pkg" if you have the most recent version of Mac-OS 10.9 or higher
4. Click on Download R 3.1.2 for Windows, which will allow you to select the .exe file to download the current release (check for the most recent update, if any)
5. Save the .exe file on your desktop/download folder
6. Click on the .exe file to install the software and keep the default settings for the installation
7. Select "Finish" once the R program has completed installation.

IF YOU ARE A MAC USER, FOLLOW THESE STEPS:

1. Select a mirror site (US, or anywhere you want)
2. Click on "Download R for MacOS X"
3. Click [R-3.1.2.pkg](#) (OR latest version) to download the installer package file to your download folder.
4. Once the installer package file is downloaded, double click on the file and you will see a installation window titled "Install R 3.1.2 for Mac release 10.9 and above"
5. Click "continue" then "continue" then "agree" to the terms of the software license agreement, then click "Install" and verify the password for your laptop
6. Wait for the message "Install Succeeded," and go to your application folder, you should be able to double click the R logo and open the "R Console" window.

INSTALLING RSTUDIO

1. Go to: <http://www.rstudio.com/> and click on "download now". Follow the prompts for your system.

Note for Mac Users: if you don't have OS 6+, let me know. I did find a copy on an old server.

PROPENSITY SCORE PACKAGES:

For propensity score matching, we will install several packages written in R. Some of them are:

1. **Matchit:** MatchIt preprocesses data by selecting approximate matched samples of the treated and control groups with similar covariate distributions, drawing on a large variety of matching methods. After preprocessing data with MatchIt, whatever standard parametric technique one might have used without preprocessing can be used, but the results will be far less model dependent.
2. **Matching:** Matching also contains several routines that can be used for propensity scores matching. It adds some routines not included in Matchit (for example, to estimate matching estimators) that we will use
3. **Optmatch:** Functions for optimal matching, including full matching.
4. **Rbounds:** sensitivity analysis in Propensity scores
5. **Zelig:** Zelig is an easy-to-use program that can estimate, and help interpret the results of, an enormous range of statistical models. It literally is "everyone's statistical software" because Zelig's simple unified framework incorporates everyone else's (R) code. We also hope it will become "everyone's statistical software" for applications and teaching, and so have designed Zelig so that anyone can easily use it or add their programs to it. Zelig also comes with infrastructure that facilitates the use of any existing method, such as by allowing multiply imputed data for any model, and mimicking the program Clarify (for Stata) that takes the raw output of existing statistical procedures and translates them into quantities of direct interest. We'll use Zelig for post-matching regression analysis.

ADDITIONAL PACKAGES

If not installed with the default installation:

Knitr: A general-purpose tool for report generation in R, which can be used to deal with any type of (plain text) files, including HTML, Markdown, reStructuredText, AsciiDoc, and Word. `install.packages("knitr")`

Markdown: companion to knitr. `install.packages("markdown")`

Mass: Functions and datasets to support Venables and Ripley, 'Modern Applied Statistics with S' (4th edition, 2002). `install.packages("Mass")`

Psych: descriptives and correlation coefficients. Also, psychometrics that you may use (e.g., Cronbach's alpha, factor analysis, etc)

Foreign: Functions for reading and writing data stored by statistical packages such as Minitab, S, SAS, SPSS, Stata, Systat, ..., and for reading and writing dBase files. `install.packages("foreign")`

If needed, we might install some other packages:

Note: You will need Internet access in order to install all of the add-on packages for R

- FAQ for R for Windows: <http://cran.r-project.org/bin/windows/rw-FAQ.html>
- R for Mac FAQ: <http://cran.r-project.org/bin/macosx/RMacOSX-FAQ.html>