REPRODUCIBLE RESEARCH WITH R

STATISTICAL ANALYSIS WITH R USING RSTUDIO, GITHUB, KNITR AND SHINY

Maja Založnik



Oxford -19^{th} March 2015

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

- Introduction
- Reproducibility
- RStudio
- GitHub
- knitr
- Shiny

• Reproducibility vs Replicability of research?

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication
 - 1. Re-ask the question

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication
 - 1. Re-ask the question
 - 2. Re-do the experiment

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication
 - 1. Re-ask the question
 - 2. Re-do the experiment
 - 3. Re-analyse the data

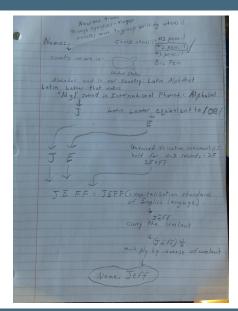
- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication
 - 1. Re-ask the question
 - 2. Re-do the experiment
 - 3. Re-analyse the data
 - 4. Reproduce the analysis

- Reproducibility vs Replicability of research?
- "The confirmation of results and conclusions from one study obtained independently in another" (Jasny et al. 2011)
- "[T]he independent verification of prior findings" (Santer et al. 2011)
- Levels of Replication
 - 1. Re-ask the question
 - 2. Re-do the experiment
 - 3. Re-analyse the data
 - 4. Reproduce the analysis

REPRODUCIBILITY: SHOW YOUR WORK!

imgur user TVsJeff:

"A math teacher took points off for not showing all of my work. The next homework assignment i turned in looked like this. It was 45 pages long."



RSTUDIO

•