Tutorials on R and R Studio (Part VI)

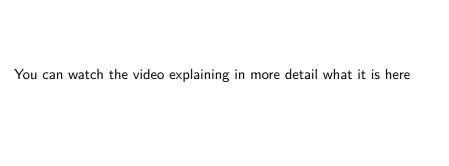
Introduction to R Markdown

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What is R Markdown?

According to RStudio,

"R Markdown is a format that enables easy authoring of reproducible web reports from R. It combines the core syntax of Markdown (an easy-to-write plain text format for web content) with embedded R code chunks that are run so their output can be included in the final document".



Why is R Markdown useful?

Traditional way: Save your analysis from any statistical software, tables or figures. Then copy and paste them into your report.

Why is this not good?

Imagine that your client tell you that they do not want full-sample analysis, instead, they want a sub-sample analysis. Then you have to re-do everything and comb through the whole report to make sure that everything is updated!

- 1. R Markdown is **dynamic**.
- 2. Results are **reproducible** with R Markdown. Everyone having your report could see the results as well as the code producing them.

The idea should be simple enough: 1. interweave narratives with code in a document, 2. knit the document to dynamically generate results from the code, 3. and you will get a report.

This idea was not invented by R Markdown, but came from an early programming paradigm called **Literate Programming** (Knuth 1984).

Where has R Markdown been used?

Xie et al. 2018 R Markdown: The Definitive Guide:

Due to the simplicity of Markdown and the powerful R language for data analysis, R Markdown has been widely used in many areas. https://bookdown.org/yihui/rmarkdown/basics-examples.html

- 1. Airbnb's knowledge repository
- 2. 2017 Employer Health Benefits Survey
- 3. Journal articles
- 4. My slides!
- 5. etc...

Example

Now let's look at an example