

2.4: Use, advantages and disadvantages of the R

R is used everywhere to work with any kind of data. R is capable to do not only “statistics” in the strict sense but also *all kinds of data analysis* (like visualization plots), *data operations* (similar to databasing) and even *machine learning* and *advanced mathematical modeling* (which is the niche of other software like Python modules, Octave or MATLAB).

There are several extremely useful features of R: *flexibility*, *reproducibility*, *open source* code and (yes!) *command-line interface*. Flexibility allows to create extension packages almost for all purposes. For the common user, it means that almost everything which was described in statistical literature as a method, is available in R. And people who professionally work in the creation of statistical methods, use R for their research. And (this is rare case) if the method is not available, it is possible to write yourself commands implementing it.

Reproducibility allow to repeat the same analysis, without much additional efforts, with the updated data, or ten years later, or in other institutions.

Openness means that it is always possible to look inside the code and find out how exactly the particular procedure was implemented. It is also possible to correct mistakes in the code (since everything made by humans have mistakes and R is not an exception) in Wikipedia-like communal way.

Command-line interface (CLI) of R is in truth, superior way over GUI (graphical user interface) of other software. User of GUI is just like the ordinary worker whereas CLI user is more similar to foreman who leaves the “dirty work” to the computer, and this is exactly what computers were invented for. CLI also allows to make interfaces, connect R with almost any software.

There is also the R “dark side”. R *is difficult to learn*. This is why you are reading this book. After you install R, you see the welcome screen with a `>` prompt, and that is it. Many commands are hard to remember, and there are no of almost no menus. Sometimes, it is really complicated to find how to do something particular.

As a difference from S-Plus, R makes all calculations in the operational memory. Therefore if you accidentally power off the computer, all results not written on disk intentionally, will be lost^[1].

References

1. There is however the SOAR package which overrides this behavior.

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