Scientific Communication, Collaboration and Design in Quantitative Research Using R

R you serious, is R easy?

Torkil Rogneflåten

Inland Norway University of Applied Sciences, Lillehammer, Norway

1 R you kidding me?

This is a text. It explains something important. Combining `code` and text with Quarto is …

R you sure that R is best? Read Wickham et al. (2017) book on R and data science to find out for yourself.

1.1 Showing of R code and output

In the `sim-rawdata.R` file I made a dataset with the following code:

```
# simulating a dataset
rawdata <- data.frame(y = rnorm(100, mean = 5, sd = 2),
                      z = rnorm(100, mean = 10, sd = 3))
```

This is a snippet of what the dataset looks like:

```
# A tibble: 6 x 2
      y     z
  <dbl> <dbl>
1  4.32  7.88
2  8.00 15.9
3  6.06  9.73
4  6.08  9.96
5  4.73  6.63
```

```
6  2.73  5.97
```

This is a “detailed” plot of the data with all t-test info of statistical differences between y and z.

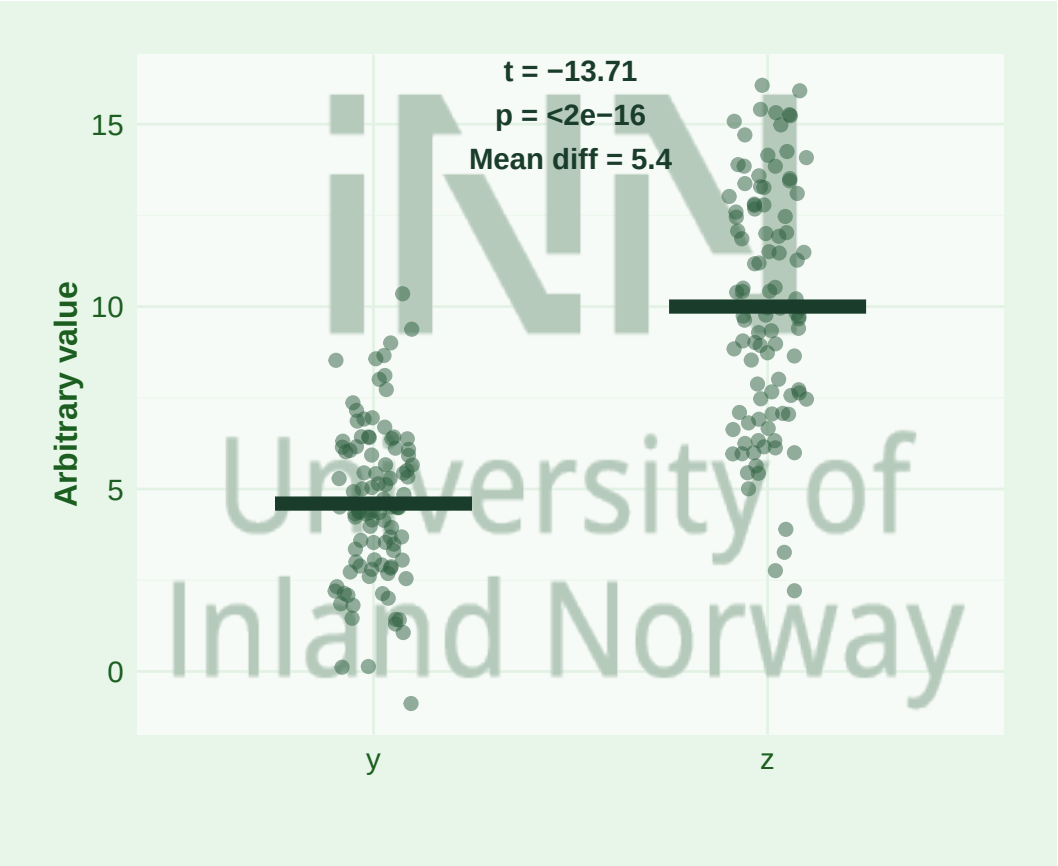

Figure 1. R you sure about this figure? -no. Grey points indicates individual values. Red crossline indicates the group average value.

The code chunk below stores statistical results and data summaries R objects, which is usefull for writing results in quarto text.

```
# import the statistics
stats <- readRDS("data/derived-data/stats.RDS")


# store t test results in text form
test_results <- paste0(round(diff(stats$estimate), 2),
                       " (p = ", format.pval(stats$p.value, digits = 3),
                       ")")




# import summarized data
sum.data <- readRDS("data/derived-data/sum.data.RDS")

# store mean and sd for variable y in text form
y_sum <- paste0(sprintf("%.1f", sum.data[1, 1]),
                  " \u00b1 ",
                  sprintf("%.1f", sum.data[1, 2]))

# store mean and sd for variable z in text form
z_sum <- paste0(sprintf("%.1f", sum.data[1, 3]),
                  " \u00b1 ",
                  sprintf("%.1f", sum.data[1, 4]))
```

This paragraph utilizes the stored text objects above. z's average score of 10.0 ± 3.3 was 5.4 (p = <2e-16) higher than y's average score of 4.6 ± 2.2.

1.2 Basic quarto text syntax

Italic, **Bold**, ***ItalicBold***, ~~Strikethrough~~, `inline code`, $^{\text{superscript}}$, $_{\text{subscript}}$. You can combine formats like ***bold and italic*** or **bold with `code`** or *italic with* $^{\textit{superscript}}$. You can make colored text:red, yellow, blue, green, purple, orange.

References

Wickham, H., Grolemund, G., et al. (2017). *R for data science* (Vol. 2). O'Reilly Sebastopol.