An algorithm for detecting ERP components using the grand average waveform as a template

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Author Note

Author Notes go here.

The authors made the following contributions. Sven Lesche: Conceptualization, Writing - Original Draft Preparation, Writing - Review & Editing.

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Abstract

One or two sentences providing a **basic introduction** to the field, comprehensible to a scientist in any discipline.

Two to three sentences of **more detailed background**, comprehensible to scientists in related disciplines.

One sentence clearly stating the **general problem** being addressed by this particular study.

One sentence summarizing the main result (with the words "**here we show**" or their equivalent).

Two or three sentences explaining what the **main result** reveals in direct comparison to what was thought to be the case previously, or how the main result adds to previous knowledge.

One or two sentences to put the results into a more **general context**.

Two or three sentences to provide a **broader perspective**, readily comprehensible to a scientist in any discipline.

Keywords: keyword, more keyword, crazy keyword

Word count: X

An algorithm for detecting ERP components using the grand average waveform as a template

Method

The Method section is usually a good place to start embedding your data-child documents

Describe your method here. You can embed pictured and reference their label (see Figure 1). You need to call `\@ref(TYPE:CHUNK-NAME)` to embed reference the output of an r chunk.

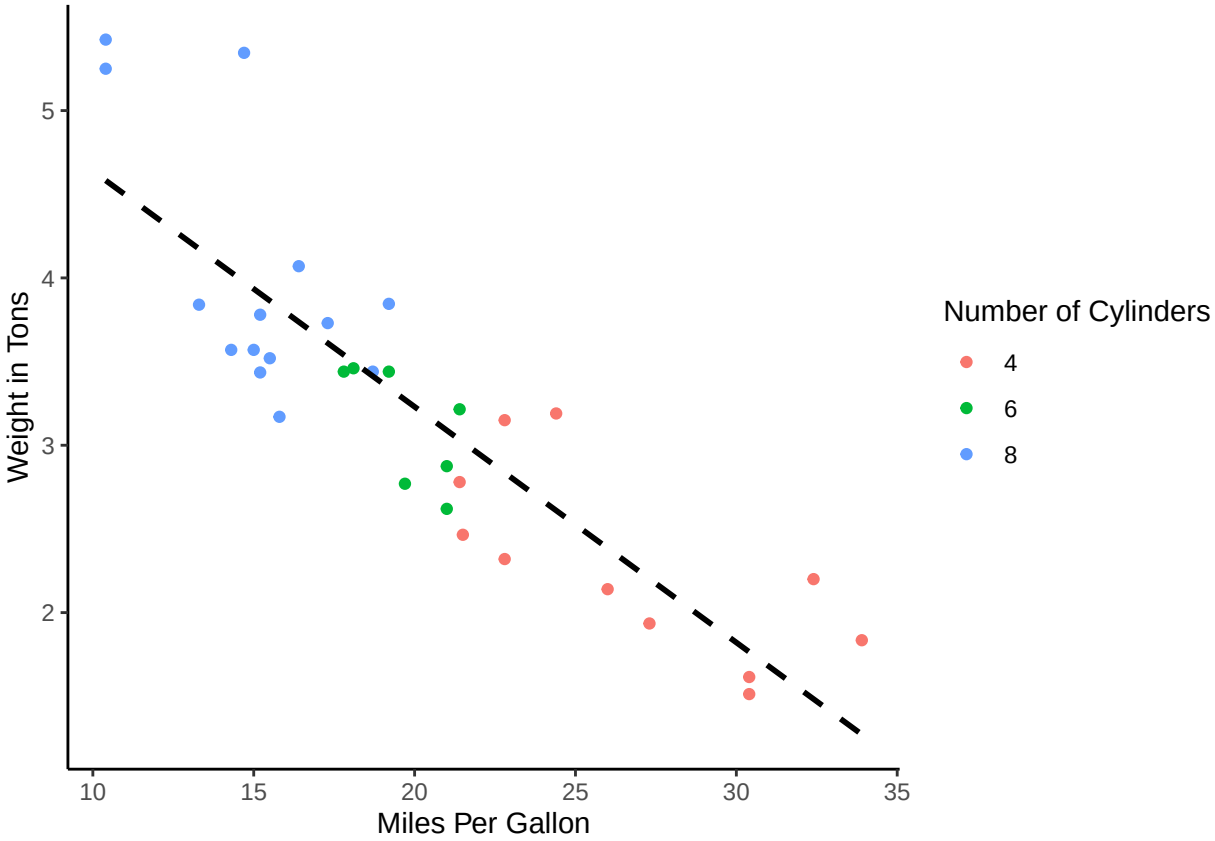

Figure 1

Plot of mpg over wt

You can also refer in inline code to data objects. We used the dataset `mtcars` for our analysis. It consists of data of 32 cars. The syntax "r command" in backticks will

Table 1

The top five cars by Miles Per Gallon (MPG)

car	mpg	disp
Pontiac Firebird	19.20	400.00
Hornet Sportabout	18.70	360.00
Merc 450SL	17.30	275.80
Merc 450SE	16.40	275.80
Ford Pantera L	15.80	351.00

Note. This table was generated using papaja::apa_table()

evaluate the command using your R-engine.

Results

Write your results here. You can add chunks for additional analysis. But to ensure readability, I would recommend conducting all anaylsis inside the appropriately named children.

You can cite R-packages used by calling the object `r_citiations`. If you want to only cite R itself within your text, but refer to all packages used in a footnote, call `r_citations$r` in text and `r_citations$pkgs` after the end of the sentence. This report was generated using R [Version 4.1.3; R Core Team (2022)][1].

You can print tables using the wonderful `apa_table` command provided to you by `papaja` (see Table 1). Here it is best to set the caption using the `caption` argument provided by `apa_table()`.

[1] We, furthermore, used the R-packages *knitr* (Version 1.44; Xie, 2015), *papaja* (Version 0.1.2; Aust & Barth, 2022), and *tidyverse* (Version 2.0.0; Wickham et al., 2019).

As you can see, the best car is Pontiac Firebird.

Discussion

Here you can discuss your results.

References

Aust, F., & Barth, M. (2022). *papaja: Prepare reproducible APA journal articles with R Markdown*. https://github.com/crsh/papaja

R Core Team. (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/

Wickham, H., Averick, M., Bryan, J., Chang, W., McGowan, L. D., François, R., Grolemund, G., Hayes, A., Henry, L., Hester, J., Kuhn, M., Pedersen, T. L., Miller, E., Bache, S. M., Müller, K., Ooms, J., Robinson, D., Seidel, D. P., Spinu, V., ... Yutani, H. (2019). Welcome to the tidyverse. *Journal of Open Source Software*, *4*(43), 1686. https://doi.org/10.21105/joss.01686

Xie, Y. (2015). *Dynamic documents with R and knitr* (2nd ed.). Chapman; Hall/CRC. https://yihui.org/knitr/

Table A1

Best car only

car	mpg	disp
Pontiac Firebird	19.20	400.00

Appendix A

Talking about appendices

First-level headers create appendix-sections labelled A-Z. You can print tables here aswell and refer to them in your main part. They will receive a prefix to their Table/Figure Number based on the appendix section they are in (see Table A1).

Appendix B

Another section

this creates another appendix section