

# R Markdown Document Template

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Abstract for an R Markdown document built with pdfL<sup>A</sup>T<sub>E</sub>X. Styles are similar to the pdfL<sup>A</sup>T<sub>E</sub>X template. We additionally control title styles using {titling}. Many stylistic options are currently controlled globally by the main file's YAML header when they could probably be contained within an include-header argument in an \_output.yml file.

## 1 INTRODUCTION

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### 1.1 ELABORATION ON A FINER POINT

Let's say we wanted to write some pretty math. Let's say we really thought item response theory (IRT) models were beautiful, and we were to write one flavor of IRT model to estimate individuals-within-groups (Caughey and Warshaw 2015):

$$\Pr(y_{ij} = 1) = \Phi[\beta_j(\theta_i - \alpha_j)] \quad (1)$$

$$\theta_i \sim \text{Normal}(\bar{\theta}_{g[i]}, \sigma_{g[i]}) \quad (2)$$

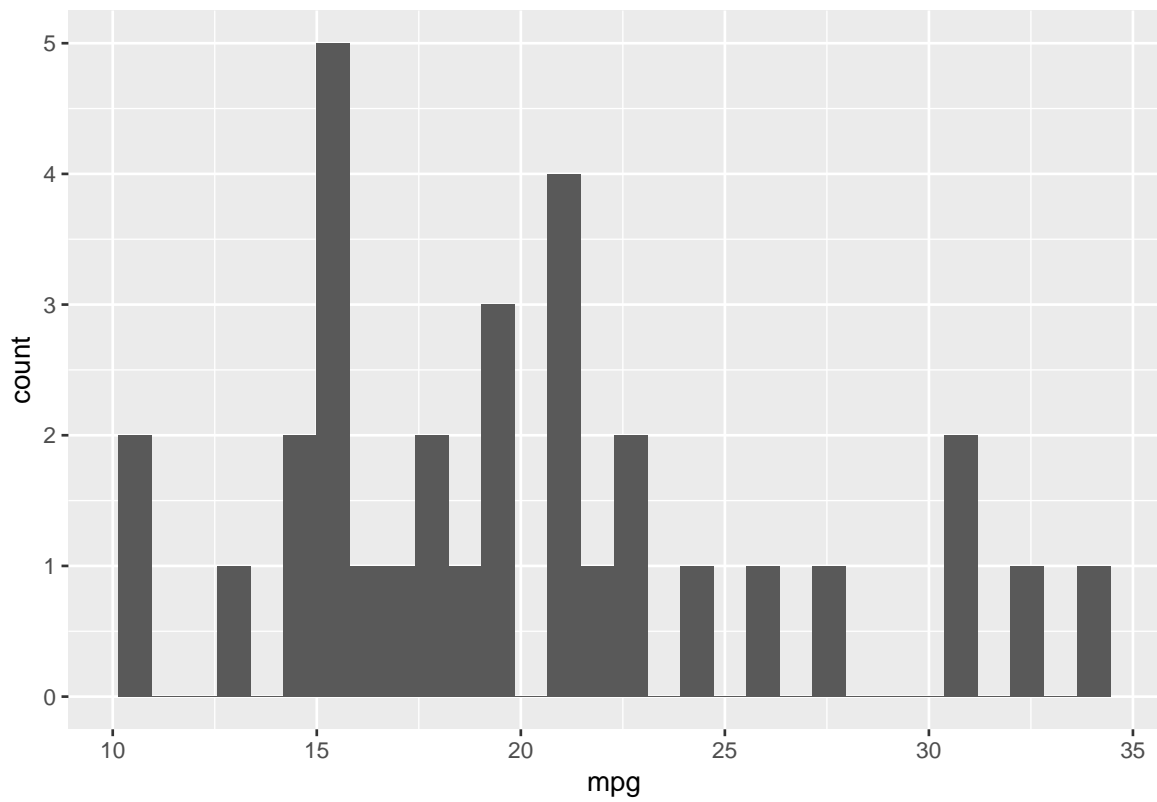
#### 1.1.1 We are Low, Hierarchically

Sub-sub-sections may not be desirable, but we're exploring it.

```
library("ggplot2")
```

```
ggplot(mtcars, aes(x = mpg)) + geom_histogram()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



## REFERENCES

Devin Caughey and Christopher Warshaw. Dynamic estimation of latent opinion using a hierarchical group-level irt model. *Political Analysis*, page mpu021, 2015.