# gss marriage politics analysis*

**subtitle**

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First sentence. Second sentence. Third sentence. Fourth sentence.

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*Code and data are available at: https://github.com/cthierst/marital_status_political_affiliation_gss_analysis.git

# 1 Introduction

# 2 Data

## 2.1 Data Management

This paper uses the R statistical programming language (R Core Team 2022), along with several packages, tidyverse (Wickham et al. 2019), janitor (Firke 2021), here (Müller 2020), and (Wickham et al. 2022). All figures in this paper were created using the packages ggplot2 (Wickham 2016) and the tables were created using knitr (Xie 2023) and kableExtra(Zhu 2021). The color styling of graphs has been created using RColorBrewer (Neuwirth 2022). The model in this paper was created using the rstanarm (Goodrich et al. 2022) package.

## 2.2 Source

## 2.3 Sampling

## 2.4 Key Features

Table 1: Variable Descriptions

| Variable | Variable Description |
|---|---|
| partyid | Self-ascribed belonging to the Republican, Democratic, or Indepedent parties |
| polviews | Self-ascribed placement on a Likert scale from 'extremely liberal to extremely conservative' |
| marital | Marital status of respondent |
| sex | Self-ascribed sex of respondent |
| cohort | Generational cohort that respondent belongs to |

Table 2: Variable Measurements

| Variable | Variable Measurement |
|---|---|
| partyid | Strong Democrat, Not Very Strong Democrat, Independent (Close to Democrat), Independent (Neither), Independent (Close to Republican), Not Very Strong Republican, Strong Republican |
| polviews | Extremely Liberal, Liberal, Slightly Liberal, Moderate, Slightly Conservative, Conservative, Extremely Conservative |
| marital | Married, Never Married, Separated, Divorced, Widowed |
| sex | Female, Male |
| cohort | Post-War, Boomer, Gen X, Millenial, Gen Z |

### 2.5 Bias and Ethics

## 3 Model

The goal of our modelling strategy is twofold. Firstly,…

Here we briefly describe the Bayesian analysis model used to investigate… Background details and diagnostics are included in **?@sec-model-details**.

### 3.1 Model set-up

Define $y_i$ as the number of seconds that the plane remained aloft. Then $\beta_i$ is the wing width and $\gamma_i$ is the wing length, both measured in millimeters.

$$y_i|\mu_i, \sigma \sim \text{Normal}(\mu_i, \sigma) \tag{1}$$
$$\mu_i = \alpha + \beta_i + \gamma_i \tag{2}$$
$$\alpha \sim \text{Normal}(0, 2.5) \tag{3}$$
$$\beta \sim \text{Normal}(0, 2.5) \tag{4}$$
$$\gamma \sim \text{Normal}(0, 2.5) \tag{5}$$
$$\sigma \sim \text{Exponential}(1) \tag{6}$$

We run the model in R (R Core Team 2022) using the `rstanarm` package of (**rstanarm?**). We use the default priors from `rstanarm`.

#### 3.1.1 Model justification

We expect a positive relationship between the size of the wings and time spent aloft. In particular…

We can use maths by including latex between dollar signs, for instance $\theta$.

## 4 Results

Our results are summarized in Table 3.

Table 3: Explanatory models of flight time based on wing width and wing length

| | First model |
|---|---|
| (Intercept) | 1.12 |
| | (1.70) |
| length | 0.01 |
| | (0.01) |
| width | −0.01 |
| | (0.02) |
| Num.Obs. | 19 |
| R2 | 0.320 |
| R2 Adj. | 0.019 |
| Log.Lik. | −18.128 |
| ELPD | −21.6 |
| ELPD s.e. | 2.1 |
| LOOIC | 43.2 |
| LOOIC s.e. | 4.3 |
| WAIC | 42.7 |
| RMSE | 0.60 |

# 5 Discussion

## 5.1 First discussion point

If my paper were 10 pages, then should be be at least 2.5 pages. The discussion is a chance to show off what you know and what you learnt from all this.

## 5.2 Second discussion point

## 5.3 Third discussion point

## 5.4 Weaknesses and next steps

Weaknesses and next steps should also be included.

## References


Firke, Sam. 2021. *Janitor: Simple Tools for Examining and Cleaning Dirty Data*. https://CRAN.R-project.org/package=janitor.

Goodrich, Ben, Jonah Gabry, Imad Ali, and Sam Brilleman. 2022. "Rstanarm: Bayesian Applied Regression Modeling via Stan." https://mc-stan.org/rstanarm/.

Müller, Kirill. 2020. *Here: A Simpler Way to Find Your Files*. https://CRAN.R-project.org/package=here.

Neuwirth, Erich. 2022. *RColorBrewer: ColorBrewer Palettes*. https://CRAN.R-project.org/package=RColorBrewer.

R Core Team. 2022. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. https://www.R-project.org/.

Wickham, Hadley. 2016. *Ggplot2: Elegant Graphics for Data Analysis*. Springer-Verlag New York. https://ggplot2.tidyverse.org.

Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D'Agostino McGowan, Romain François, Garrett Grolemund, et al. 2019. "Welcome to the tidyverse." *Journal of Open Source Software* 4 (43): 1686. https://doi.org/10.21105/joss.01686.

Wickham, Hadley, Romain François, Lionel Henry, and Kirill Müller. 2022. *Dplyr: A Grammar of Data Manipulation*. https://CRAN.R-project.org/package=dplyr.

Xie, Yihui. 2023. *Knitr: A General-Purpose Package for Dynamic Report Generation in r*. https://yihui.org/knitr/.

Zhu, Hao. 2021. *kableExtra: Construct Complex Table with 'Kable' and Pipe Syntax*. https://CRAN.R-project.org/package=kableExtra.