gss marriage politics analysis*

subtitle

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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). Combinations of figures were created using (Pedersen 2022) 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

The data within this paper was extracted from the 2014, 2016, 2018 and 2021 United States General Social Survey (GSS). This survey is a series of nationally representative cross-sectional interviews that collects data on contemporary American society to explain and monitor trends in attitudes, opinions and behaviours (Davern et al. 2021). It began tracking these trends in 1972, and has primarily used in-person data collection as its method of data collection (Davern et al. 2021). In 2021, the survey moved to an address-based sampling method with a focus on web-based self-administered questionnaires (Davern et al. 2021).

2.3 Sampling

The United States General Social Survey (GSS) samples adults over the age of 18 in the United States who are not currently living in institutional housing (Davern et al. 2021). Table 1 shows the total number of responses collected by the GSS and the total number of responses used in the analysis of this paper, per year.

Table 1: Number of Responses

Year	Total # of Responses	Total # of Responses Used in Analysis
2014	2,538	2,322
2016	2,867	2,641
2018	2,348	2,143
2021	4,032	3,529

2.4 Key Features

This paper explores the estimands, does political affiliation as measured through political views and identification impact marital status' and what influence does generational cohort and sex have. This paper explores these estimands through an analysis of the sample populations described in Table 1 under "Total # of Responses Used in Analysis." Responses were removed to account for unanswered or not applicable responses. I did this to ensure the representative and completeness of all variables analyzed. The variables selected for analysis can be viewed in Table 2 and their measurement levels can be viewed in Table 3. Responses were measured using Likert scales which measure respondents' opinions to questions, and multiple choice questions.

Table 2: Variable Descriptions

Variable	Variable Description
partyid	Self-ascribed belonging to the Republican, Democratic, or Indepedent parties
polviews	Self-ascribed placement on the political spectrum 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 3: 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

It is important to acknowledge that observations and data from the 2014, 2016, 2018, and 2021 US General Social Survey (GSS) may have been influenced by social trends occurring in the world around participants. These could include and are not limited to the deaths of Michael Brown and Eric Garner as a result of police brutality in 2014, the presidential election in 2016, the immigration crisis in 2018, and the continuing COVID-19 pandemic in 2021. However, this is in part, part of the importance of the GSS, to track social trends. This is why I have chosen to compare four years of survey results, to gain a better perspective of these social trends with acknowledgement of the global circumstances in which they are reported under.

One point of bias that does need to be addressed is the difference in surveying techniques. The US General Social Survey (GSS) was conducted in person in the years 2014, 2016, and 2018, however, due to the COVID-19 pandemic, it was changed to being an online survey resulting in a higher rate of non-response. The 2021 GSS controlled for this by adjusting population totals to ensure that the weighted totals closely matched the U.S. Census Bureau's estimates of sex, age, education, race, region, and ethnicity (Davern et al. 2021). Additionally, due to the survey being online, household enumeration was impossible, so households were asked to identity the adult with the most recent birthday (Davern et al. 2021). This is problematic as it may have missed some household residents who were temporarily living abroad, adult children, etc. (Davern et al. 2021). Measures were taken to control for this by conducting tests of significant to look for differences in trend estimates (Davern et al. 2021). Additionally, in the years where the survey was conducted in-person, there may have been instances of variance in how interviewers asked questions which could have led to bias in the results.
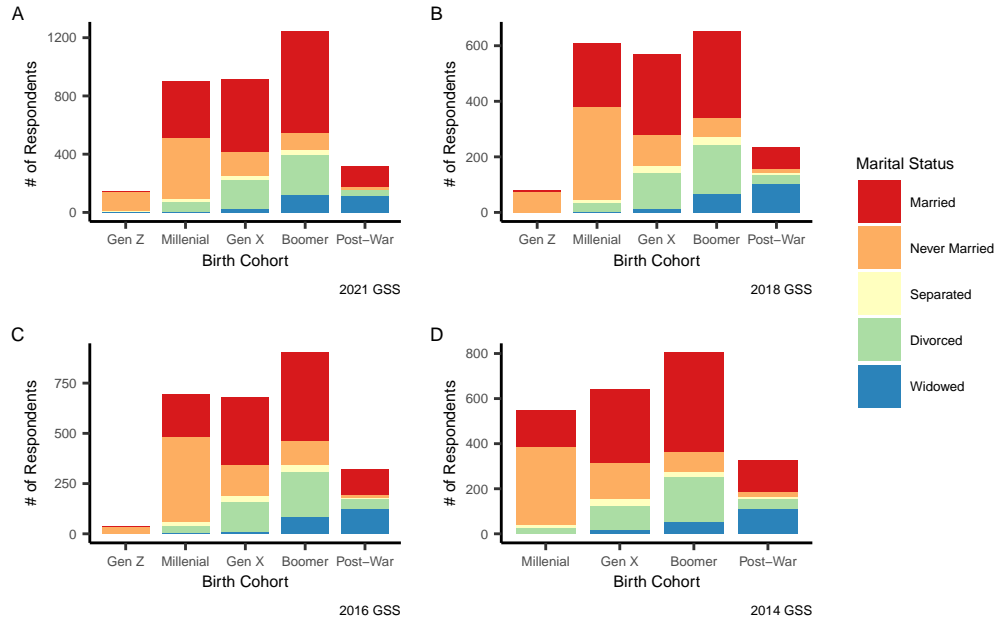
2.6 Marital Status and Cohort

Figure 1: 2014-2021 Comparisons of Birth Cohort Against Respondent Marital Status
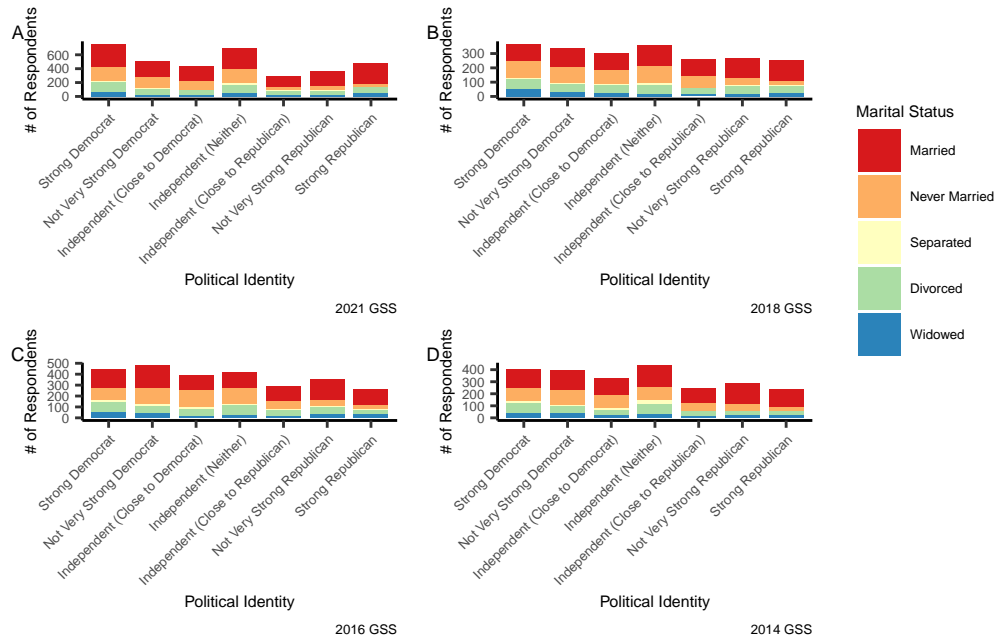
Figure 2: 2014-2021 Comparisons of Political Party Identity Against Respondent's Marital Status

Table 4: Marital Status vs. Self-Ascribed Belonging to Political Parties of 2021 Respondents

Political Identity	Married	Never Married	Separated	Divorced	Widowed
Strong Democrat	330	209	15	139	63
Not Very Strong Democrat	233	159	12	80	25
Independent (Close to Democrat)	216	122	13	64	22
Independent (Neither)	310	203	22	118	47
Independent (Close to Republican)	152	45	10	57	24
Not Very Strong Republican	214	62	6	51	27
Strong Republican	299	49	6	74	51

Table 5: Marital Status vs. Self-Ascribed Belonging to Political Parties of 2018 Respondents

Political Identity	Married	Never Married	Separated	Divorced	Widowed
Strong Democrat	120	116	13	68	50
Not Very Strong Democrat	138	111	8	54	30
Independent (Close to Democrat)	118	97	13	51	24
Independent (Neither)	144	118	18	56	20
Independent (Close to Republican)	113	82	5	42	14
Not Very Strong Republican	139	52	6	52	19
Strong Republican	144	31	6	49	22

Table 6: Marital Status vs. Self-Ascribed Belonging to Political Parties of 2016 Respondents

Political Identity	Married	Never Married	Separated	Divorced	Widowed
Strong Democrat	171	112	18	92	49
Not Very Strong Democrat	206	153	15	64	43
Independent (Close to Democrat)	136	164	17	64	14
Independent (Neither)	150	146	14	86	25
Independent (Close to Republican)	136	74	12	48	18
Not Very Strong Republican	189	59	9	60	36
Strong Republican	146	36	4	43	32

Table 7: Marital Status vs. Self-Ascribed Belonging to Political Parties of 2014 Respondents

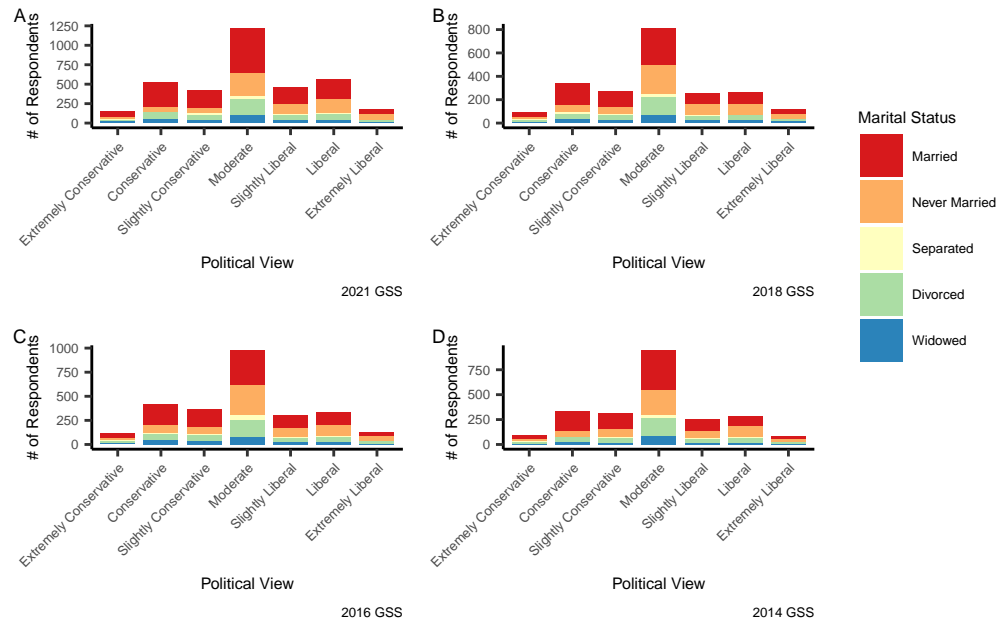| Political Identity	Married	Never Married	Separated	Divorced	Widowed
Strong Democrat	157	111	15	86	37
Not Very Strong Democrat	159	125	13	59	34
Independent (Close to Democrat)	139	113	10	46	19
Independent (Neither)	179	116	25	89	27
Independent (Close to Republican)	127	60	4	40	14
Not Very Strong Republican	167	59	4	35	17
Strong Republican	150	32	4	27	23

Figure 3: 2014-2021 Comparisons of Birth Cohort Against Respondent Marital Status

Table 8: Marital Status vs. Self-Ascribed Placement on Political of 2014 Respondents

Political Spectrum	Married	Never Married	Separated	Divorced	Widowed
Extremely Conservative	76	30	3	24	18
Conservative	332	54	11	91	45
Slightly Conservative	230	76	14	73	31
Moderate	573	300	35	208	98
Slightly Liberal	221	133	9	69	31
Liberal	256	186	11	87	28
Extremely Liberal	66	70	1	31	8

Table 9: Marital Status vs. Self-Ascribed Placement on Political of 2018 Respondents

Political Spectrum	Married	Never Married	Separated	Divorced	Widowed
Extremely Conservative	43	17	4	21	7
Conservative	181	66	11	49	29
Slightly Conservative	133	63	8	44	23
Moderate	318	241	27	156	66
Slightly Liberal	87	94	7	40	22
Liberal	111	86	7	43	22
Extremely Liberal	43	40	5	19	10

Table 10: Marital Status vs. Self-Ascribed Placement on Political of 2016 Respondents

Political Spectrum	Married	Never Married	Separated	Divorced	Widowed
Extremely Conservative	47	25	7	25	10
Conservative	218	74	8	62	49
Slightly Conservative	190	73	5	66	33
Moderate	370	307	50	177	76
Slightly Liberal	131	98	7	47	21
Liberal	133	123	4	57	22
Extremely Liberal	45	44	8	23	6

Table 11: Marital Status vs. Self-Ascribed Placement on Political of 2014 Respondents

Political Spectrum	Married	Never Married	Separated	Divorced	Widowed
Extremely Conservative	50	20	2	16	8
Conservative	197	60	6	49	23
Slightly Conservative	167	78	4	49	19
Moderate	404	246	39	172	87
Slightly Liberal	115	74	9	38	16
Liberal	107	112	11	44	14
Extremely Liberal	38	26	4	14	4

2.7 Marital Status and Self-Ascribed Belonging to Political Parties

2.8 Marital Status and Self-Ascribed Placement on Political Spectrum

3 Model

In this section I briefly describe the **(model(?))** used to investigate the relationship between Political Identity and Marital Status.

3.1 Model set-up

$$\hat{y} = \beta_0 + \beta_1$$

$\hat{y}$ is marital status β_0 is the political party identity β_1 is the placement on the political spectrum.

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Define y_i as the number of seconds that the plane remained aloft. Then β_i is the wing width and γ_i is the wing length, both measured in millimeters.

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

We run the model in R (R Core Team 2022) using the `rstanarm` package of (Goodrich et al. 2022). 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 θ.

Table 12: 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

4 Results

Our results are summarized in Table 12.

5 Discussion

5.1 Weaknesses and next steps

Weaknesses and next steps should also be included.

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