

Case Study 2

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Introduction

Data cleaning

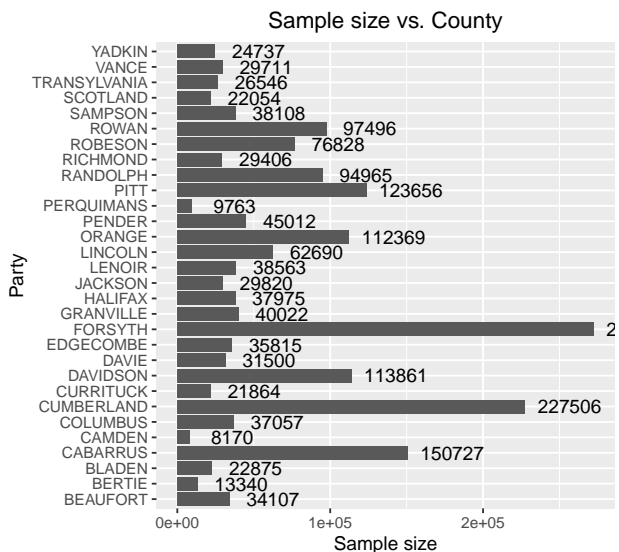
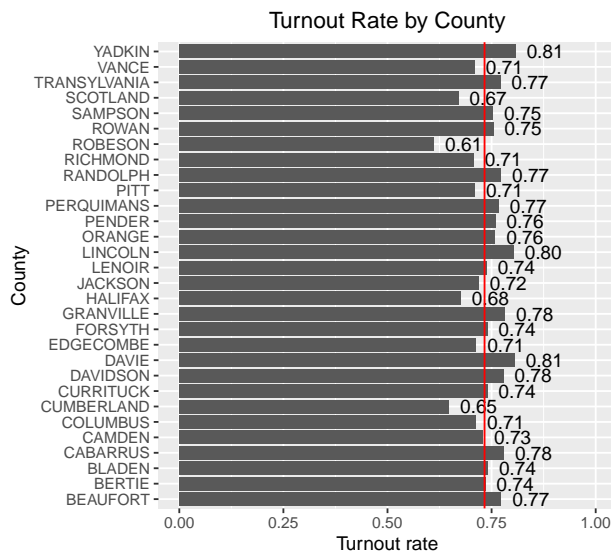
Explanation of abbreviations: https://s3.amazonaws.com/dl.ncsbe.gov/data/layout_ncvoter.txt

EDA

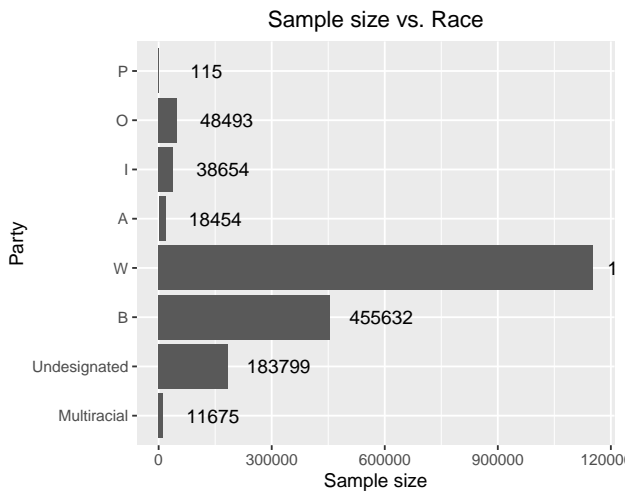
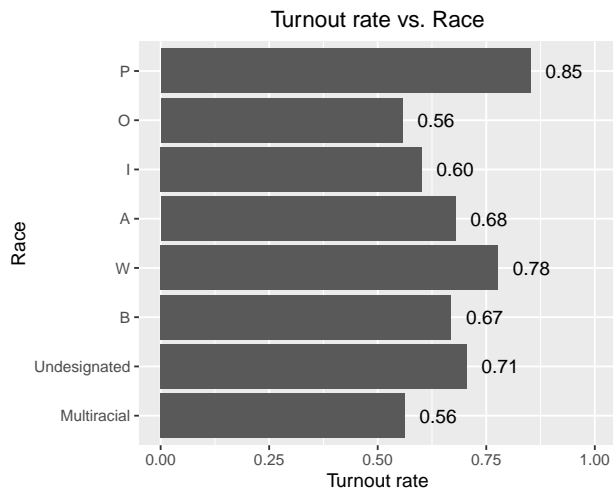
```
##
##      0      1
## 509502 1399405

## group turnout_rate
## 1 Total      0.7330923
```

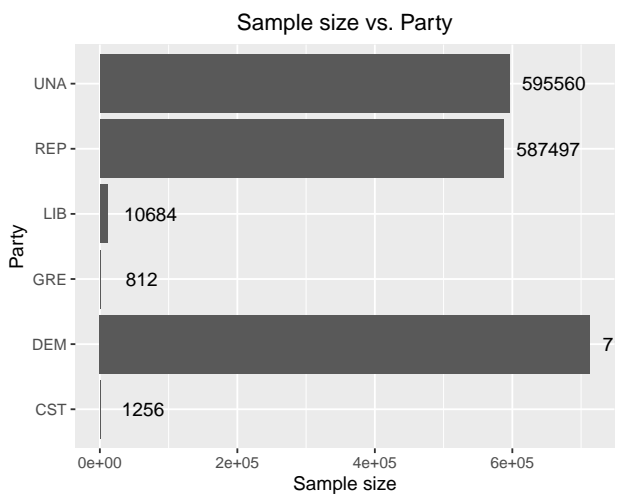
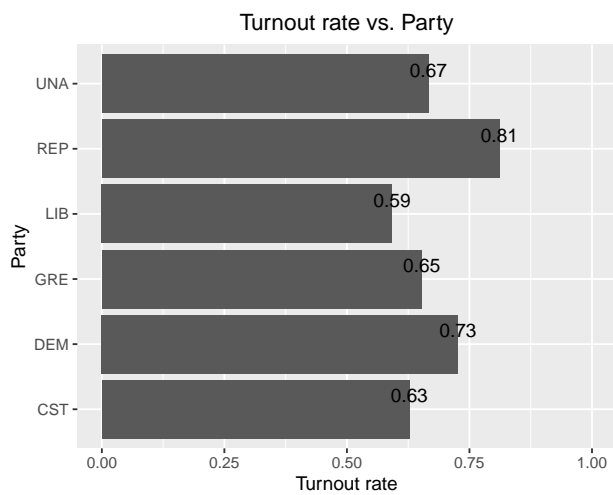
turnout rate



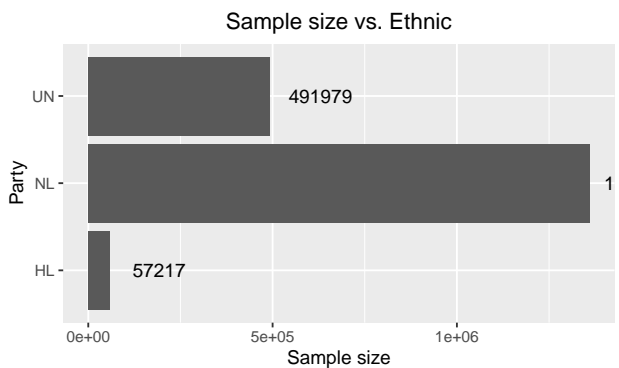
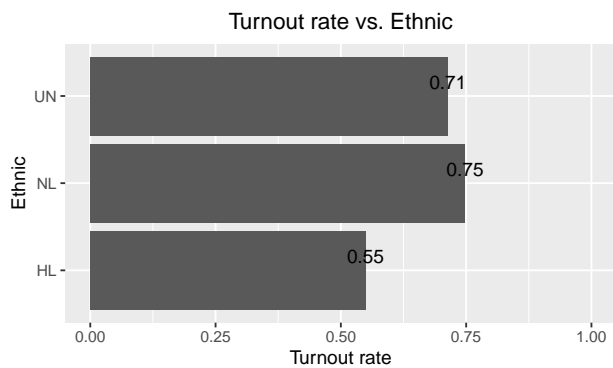
race



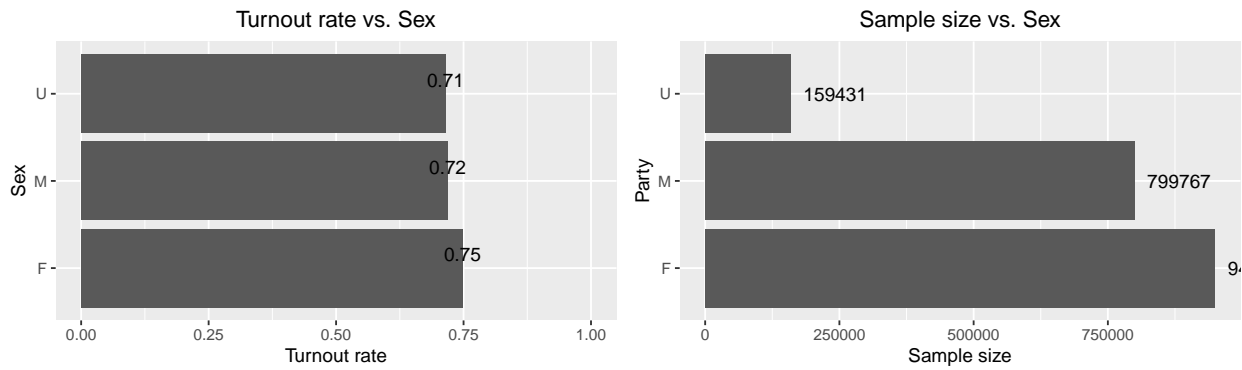
party



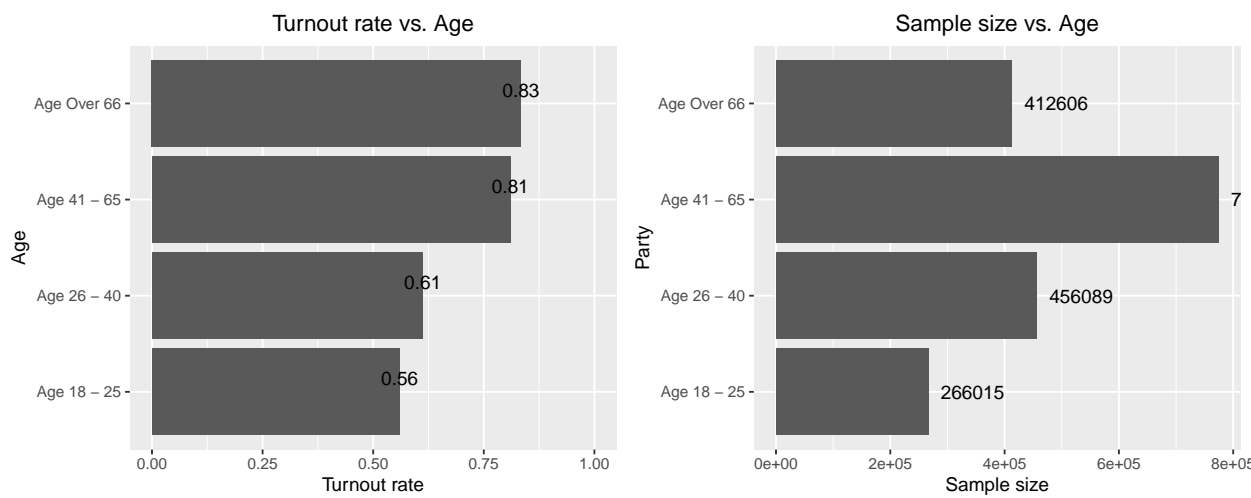
ethnic groups



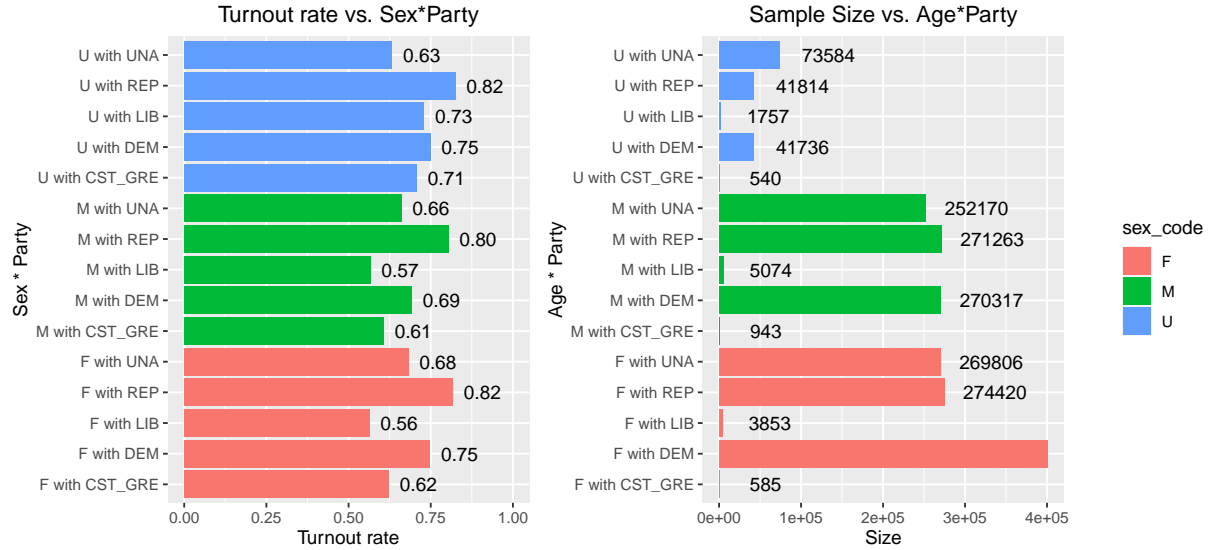
Sex



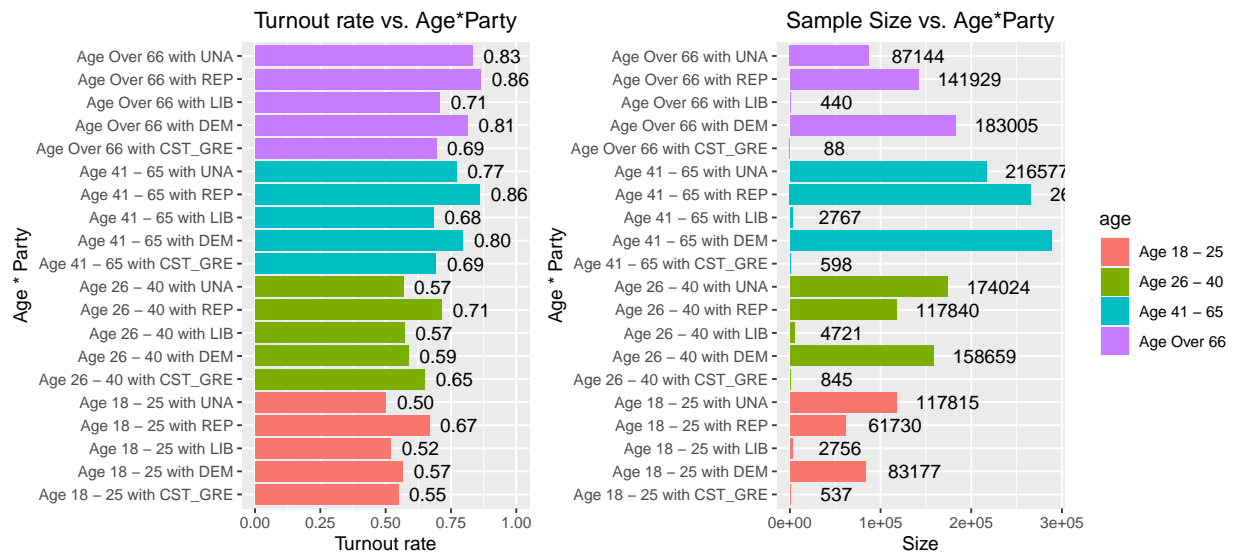
age



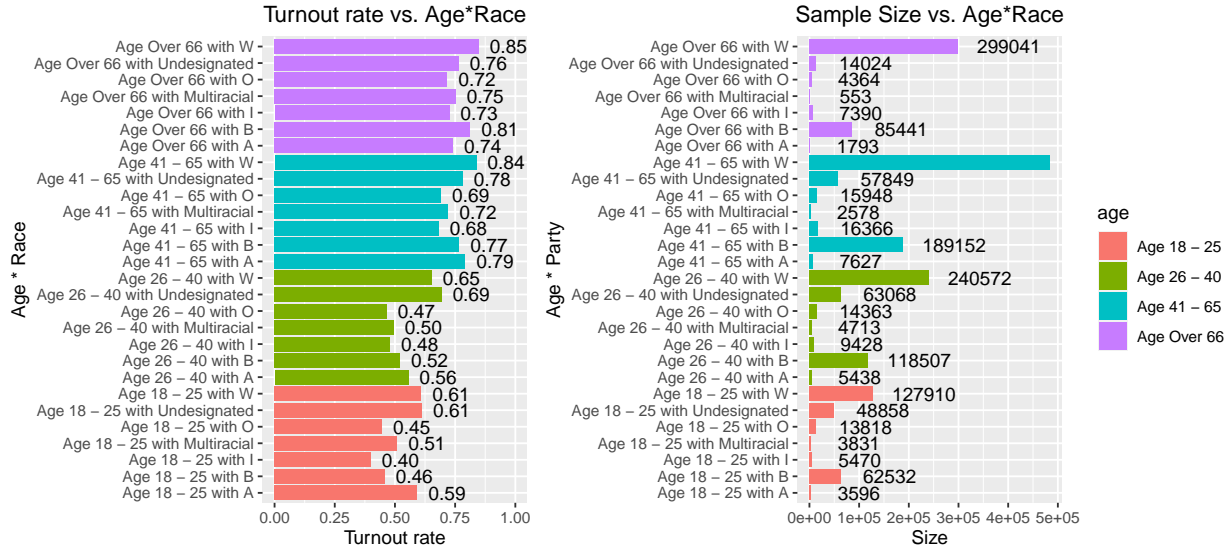
sex & party



age & party



age & race

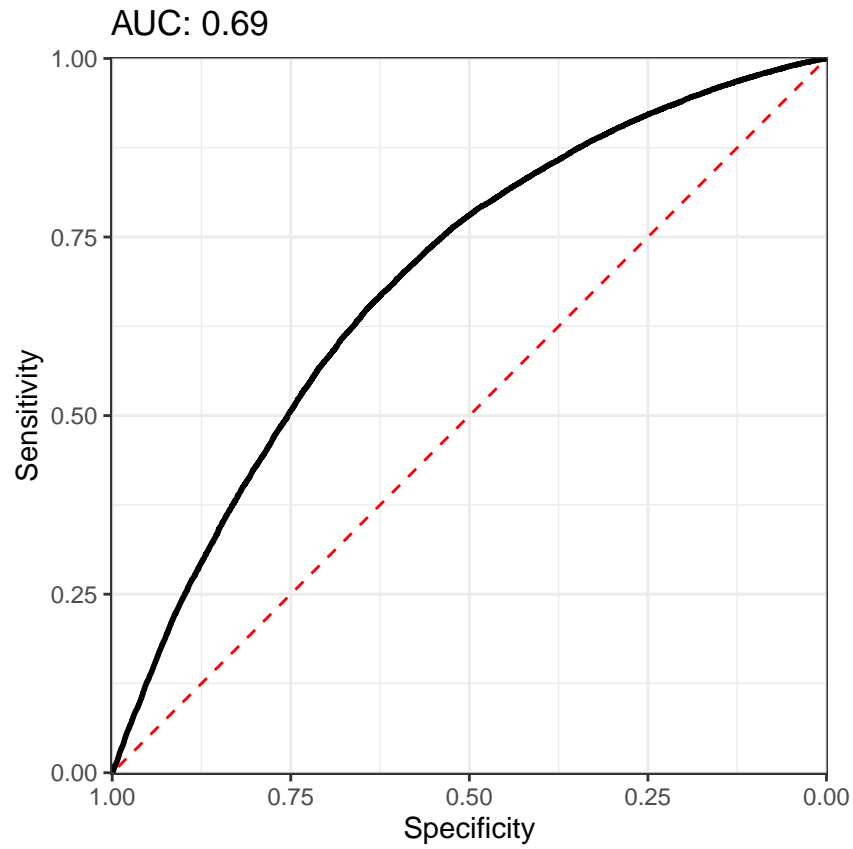


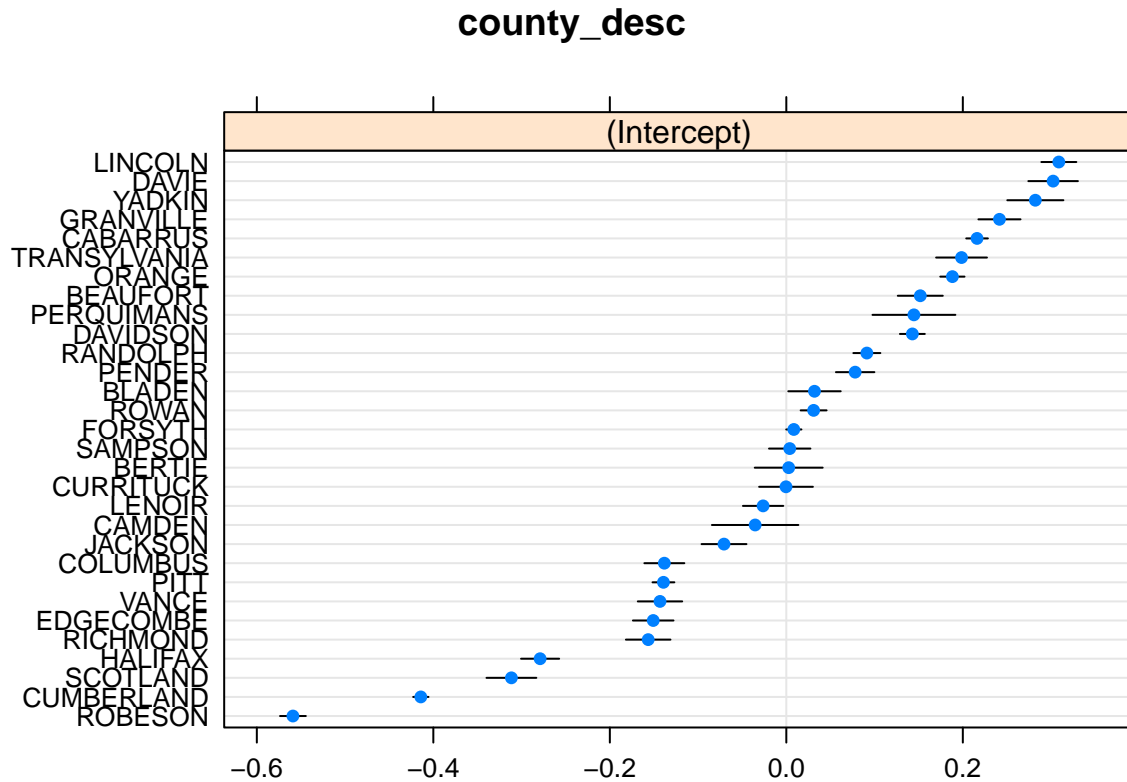
Model

Table 1: Forward model selection

Model	LRT.p.value	AIC	BIC
Base model		96904.01	96988.73
Add race	0	88191.94	88322.86
Add race and ethnic	0	86526.87	86673.20
Without intercept	0	99839.91	99955.43
Add the interaction of sex and party_cd, and age and party	0	83825.28	84125.65
Add the interaction of sex and party_cd, age and party, and age and race	0	79688.45	80127.45

	Estimate	95% CI
(Intercept)	0.544	[0.36, 0.728]
party_cdDEM	0.629	[0.461, 0.797]
party_cdLIB	-0.258	[-0.438, -0.079]
party_cdREP	0.944	[0.775, 1.112]
party_cdUNA	0.246	[0.077, 0.414]
party_cdCST_GRE:sex_codeM	-0.048	[-0.262, 0.165]
party_cdDEM:sex_codeM	-0.277	[-0.288, -0.266]
party_cdLIB:sex_codeM	0.006	[-0.079, 0.091]
party_cdREP:sex_codeM	-0.089	[-0.103, -0.076]
party_cdUNA:sex_codeM	-0.102	[-0.114, -0.09]
party_cdCST_GRE:sex_codeU	0.338	[0.088, 0.589]
party_cdDEM:sex_codeU	-0.021	[-0.045, 0.002]
party_cdLIB:sex_codeU	0.728	[0.604, 0.852]
party_cdREP:sex_codeU	0.048	[0.02, 0.075]
party_cdUNA:sex_codeU	-0.219	[-0.236, -0.201]





Interpretation

Research Questions

- How did different demographic subgroups vote in the 2020 general elections? For example, how did the turnout for males compare to the turnout for females after controlling for other potential predictors?
- Did the overall probability or odds of voting differ by county in 2020? Which counties differ the most from other counties?
- How did the turnout rates differ between females and males for the different party affiliations?
- How did the turnout rates differ between age groups for the different party affiliations?