A look into Kamala Harris' polls in the upcoming 2024 US Presidential Election*

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The 2024 US election has been seen as a close race between the Democratic nominess Kamala Harris, and the Republican Nominee Donald Trump, with each candidate holding down key states and matching each other in battleground states such as Pennsylvania and Georgia. This paper looks at the polling as of late October 2024 to see how Kamala Harris fares as the election draws near.

1 Introduction

The 2024 US Presidential race has been closely contested since incumbent president, Joe Biden, announced his exit from the race. The race is primarily between current VP, Democratic Party candidate Kamala Harris (with running mate Time Walz), and former president, Republican Party candidate Donald Trump (with running mate J.D. Vance). Polls across the country have conflicting reports on who will come out on top, with some sources suggesting an unheard-of tie in the electoral college vote (269-269 vote distribution) (Lopez 2024).

To get a better grasp of nationwide and state opinons going into the election, a predictive model was created in this report. The model utilises data from fivethirtyeight.com, which hosts a dataset of diverse and reputable polls taken across the country. Using this data, we (INSERT WRANGLING DONE TO DATASHEET). Then we constructed a generalized linear model, predicting (INSERT PREDICTOR), using (INSERT PREDICTEES) as predictors. The results from the model show (INSERT RESULTS FROM MODEL)

Section 2 will outline the source of this data. Section 3 covers the model and it's parameters. Section 4 is where discussion will be made about the models predictions and how realistically they line up with current affairs. Finally, section 4 discusses any weakness and limitations that can be considered for another report.

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*Code and data are available at: https://github.com/Veyasan1/2024USElectionModel

2 Data

The dataset provided by fivethirtyeight contains over 15000 observations across 50 variables. Each observation is an individual poll done on the topic of the 2024 US presidency.

2.0.1 Key Variables

2.0.1.1 `poll_score:`

```
#### Plot data ####
base_plot <- ggplot(just_harris_high_quality, aes(x = end_date, y = pct)) +
  theme_classic() +
  labs(y = "Harris percent", x = "Date")

# Color by pollscore
base_plot +
  geom_point(aes(color = factor(pollscore))) +
  geom_smooth() +
  theme(legend.position = "bottom")
```
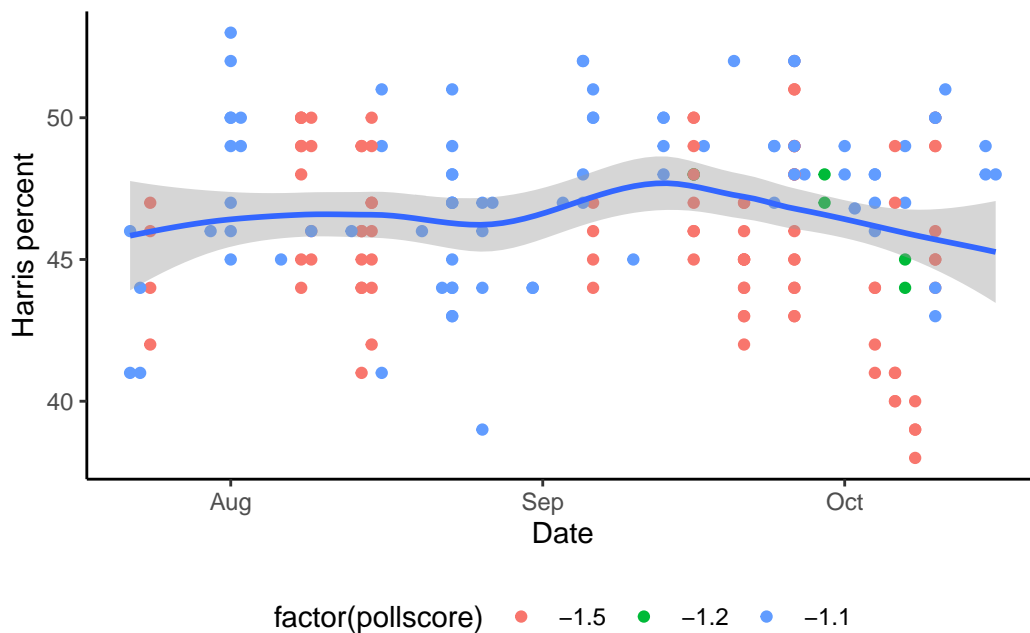
```r
#### Plot data ####
base_plot <- ggplot(just_harris_high_quality, aes(x = end_date, y = pct)) +
  theme_classic() +
  labs(y = "Harris percent", x = "Date")

# Plots poll estimates and overall smoothing
base_plot +
  geom_point() +
  geom_smooth()
```
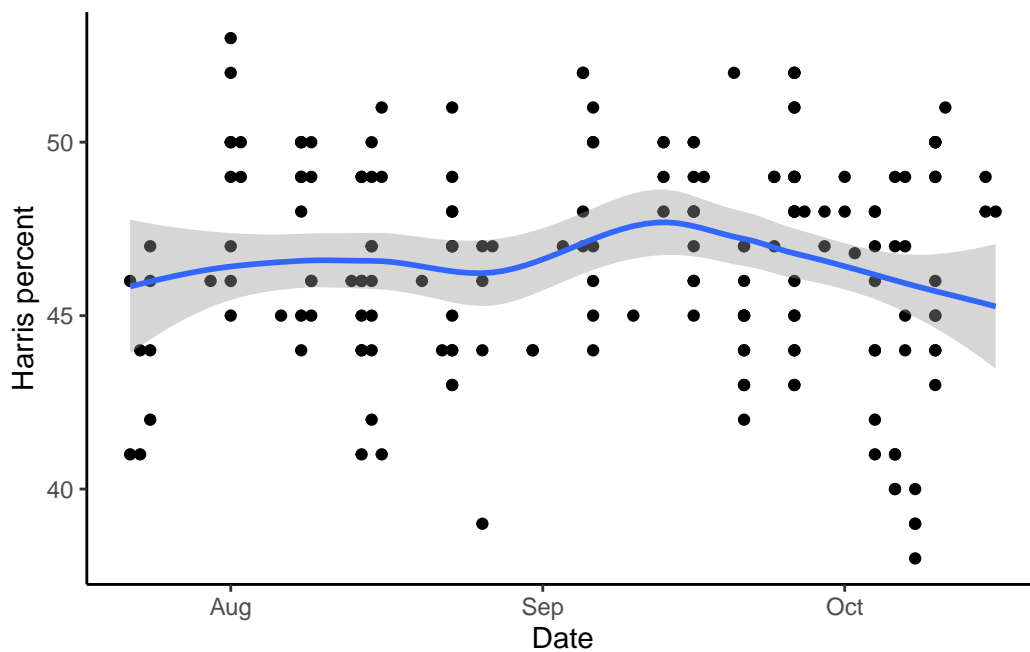


```r
# Color by pollster
# This gets messy - need to add a filter - see line 21
base_plot +
  geom_point(aes(color = pollster)) +
  geom_smooth() +
  theme(legend.position = "bottom")
```

arquette Law School ● Siena/NYT ● YouGov ● YouGov/Center f
cCourtney Institute/YouGov ● The Washington Post ● YouGov Blue

```
# Facet by pollster
# Make the line 21 issue obvious
# Also - is there duplication???? Need to go back and check
base_plot +
  geom_point() +
  geom_smooth() +
  facet_wrap(vars(pollster))
```
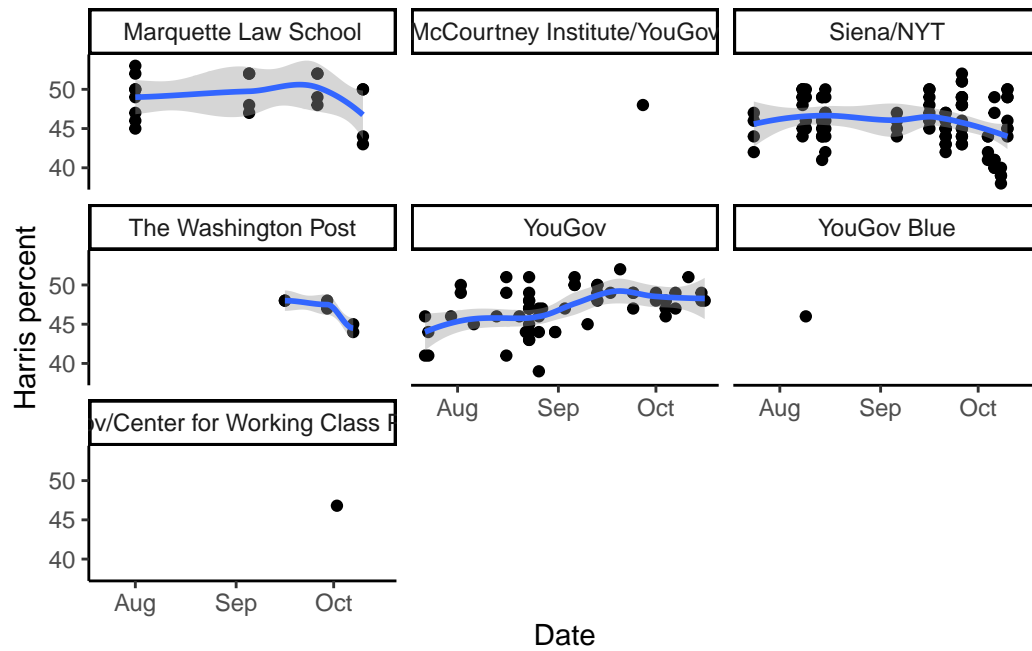
```
# Color by pollscore
base_plot +
  geom_point(aes(color = factor(pollscore))) +
  geom_smooth() +
  theme(legend.position = "bottom")
```
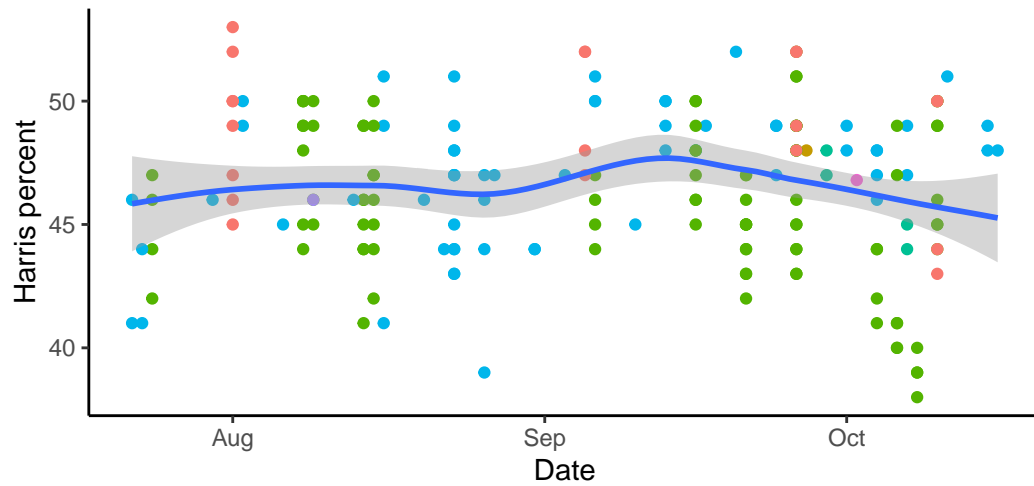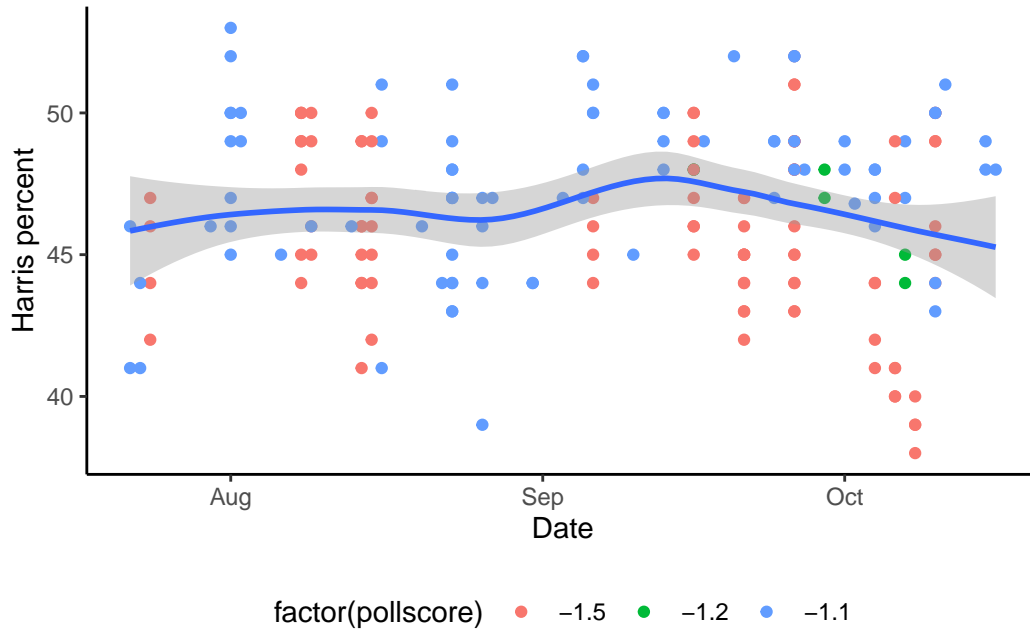
3 Measurement

The dataset comes from fivethirtyeight.com, a statistical analysis website dedicated to US sports and elections (**fivethrityeight?**). Fivethirtyeight takes polls conducted on a particular topic (in this case the 2024 US presidency), and aggregates them in one dataset.

Election polls are used to gauge pulic opinion about candidates, political topics, voter angagement, and public opinion of the election process.Election polls also serve as key insight to political organisations representing candidates, polls can show potenital weak poiints are low support in areas and popoulations.

Election polls are simil;arly to regular polls, they involve asking a sample population a series of questions via a delivery method. The key distinction is that election polls typically try to target *voters*, or people who are most likely to vote in the election cycle being investigated. This is a key chalenge to pollsters, as there are many subgroups of voters, such as people who seldom vote or almost never vote. There may also be cases when repondents of a poll saying they wil/will not vote change their mind come election day.

Election polling has exploded in recent times according to Pew Research. They suggest that double thre are double the amount of active pollsters in 2022 compared to 2000. One reason mentioned is the advent of online polling, which is simple, cheap, and can easily reach US citizens across the country. As a result, while the diversity of pollsters has increased dramatically, this also means there are as many amateur polls being conducted.

Errors in election polling have been an issue in the last two cycles of presidential elections. Between the 2016 and 2020 elections, there has been a trend of pollsters not fully capturing Trump's support. For example in 2020, despite BIden winning the election, there were reports from the American Associate for Public Opinion Reseach that national polls overstated his victory over Trump by 3.9 percentage points.

Fivethirty eight tries to mtigate the influx of pollsters and the potential for errors by routinely checking up on pollsters as they produce reports, wther they have an established track record, or if they are just new to data presentation, There are 2 types of checks fivethirtyeight uses: Methodology and Ethics.

Methodology refers to the scientific rigor exhibited by the pollster, when conducting the poll, and in the presentation of the results. Fivethirtyeight requires each poll to have or easily obtain the following:

- Pollster Identity
- Survey Dates
- Population Sample (Size and other distinct attributes)
- Polling Method (How was the poll conducted?)
- Sponsors (Identity and Amount

Even if these conditions are met, fivethirtyeight may refuse to include certain polls in their data, due to flaws in methodology. Some examples include:

- Polls with inappropriate sample for target population
- Polls based upon predictive models
- Polls that implement recontact with participants (potential for bias to creep into the sample)
- Polls done by amateur/non-professional pollsters
- Polls with an "informed ballot" (when information about a candidate is given to the participant before they are asked who they would vote for)

The second check fivethirtyeight implements is ethical standard, adapted from the American Association for Public Opinion Research's Code of Professional Ethics and Practices . Fivethirtyeight may refuse to include polls that:

- Fabricate or falsify data
- Are associated with the betting industry
- Refuse to disclose their methodology, either in their findings, or after being contacted for clarification

- Misrepresent their true purpose (being part of campaign analysis or done for a particular party or candidate)

- Disclose errors that come about from their work, and rectify them as best as possible

- Utilize methods that will give misleading results

Fivethirtyeight will conduct an initial check on pollsters, seeing if their methodology and ethics are publicly available, and are in agreement with fivethirtyeight's checks. If unclear, fivethirtyeight will do a more thorough investigation of the pollster, and ask the organizers questions about their methodology and ethics if none were visible in the public report. If there are any violations in ethics, the severity on consequences will vary on wjat the offence is. If there is evidence of falifyin data or engaging in betting, the pollster is blacklisted from their data, any polls that come out of this pollster are extremely dubious and not trustworthy to build a model or report on. Otherwise, pollsters are given a chance to fix ethical issues presented by fivethirtyeight. Failiure to do so results in the pollster and any of its polls being taken off the dataset, but if the pollster shows it has updated its ethics policies and applied them to recent reports, they may be allowed back in.

Partisan polls are a small subset of polls that are made with the backing or organizations affiliated with one or more political organizations. Fivethirtyeight will allow these polls into their data, but they will be marked as "Partisan", and extra checks are put in place to ensure the polling data hasn't been influenced unethically by the pollster or it's affiliated organizations.

4 Model

The model contains 4 parameters. They are pollster, state, sponsors, and methodology.

Pollster is the operator of the observed poll. Pollster provides a relatively easy way to identify trends in certain polls, depending on who is conducting them.

State tells us where the poll was conducted. Across the United States, ther are states that traditionally vote Democrat (New York, California), some that traditionally vote Republican (Texas, Florida), and 'swing states' (Michigan, Pennsylvania). Swing states in particular are the most interesting states to watch as votes from these states tend to win a candiate the US presidency.Knowing where the polls have been taken also lets us understand if their choice was one bound by the state's culture.

Sponsors are organizations that fund or otherwise assist the pollster in operating the poll. Sponsors carry the risk of bias with them, potentially influencing the pollster, and thus the polls to skew in a direction the sponsor favors preferably. Knowing who these sponsors are potemntially lets us make informed predictions on the outcome of polls.

Methodology is the way the poll was conducted. Sometimes the composition of the poll influences peoples votes, so this is an interesting parameter to track. This also lets us see if certain methods yield better or worse predictions.

5 Results
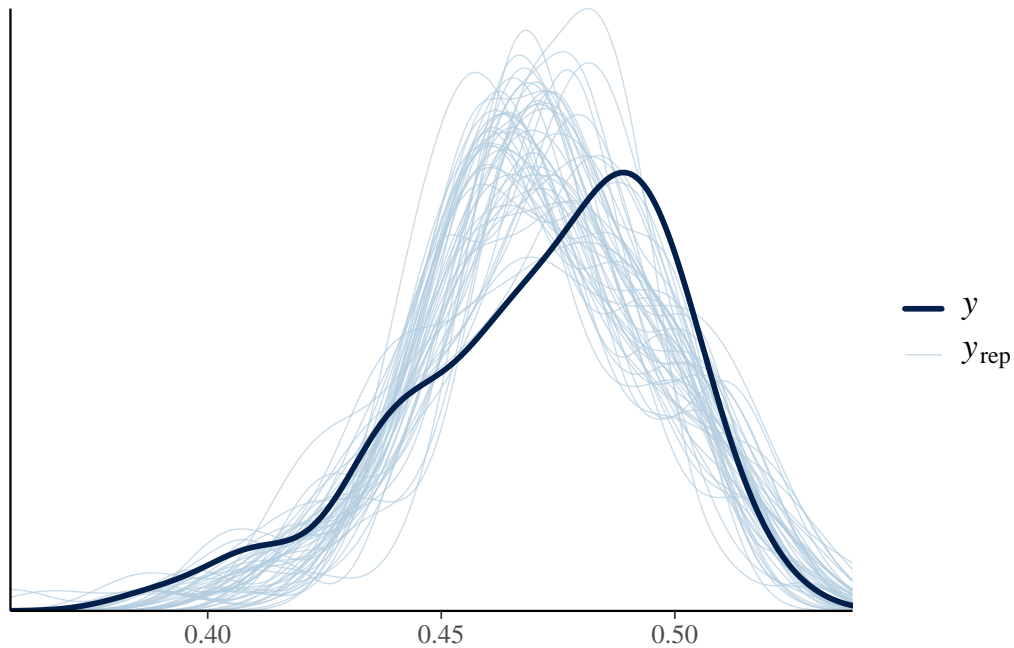

```
Model Info:
 function:     stan_glmer
 family:       binomial [logit]
 formula:      cbind(num_harris, sample_size - num_harris) ~ (1 | pollster) +
       (1 | state) + (1 | sponsors) + (1 | methodology)
 algorithm:    sampling
 sample:       4000 (posterior sample size)
 priors:       see help('prior_summary')
 observations: 63
 groups:       sponsors (11), state (9), pollster (4), methodology (2)

Estimates:
                                                        mean    sd
(Intercept)                                             -0.1    0.3
```

```
b[(Intercept) sponsors:Carolina_Forward]                               0.0    0.1
b[(Intercept) sponsors:CATO_Institute]                                 0.0    0.1
b[(Intercept) sponsors:CBS_News]                                       0.2    0.0
b[(Intercept) sponsors:Economist]                                      0.0    0.0
b[(Intercept) sponsors:Institute_for_Global_Affairs]                  -0.1    0.1
b[(Intercept) sponsors:Jacobin]                                        0.0    0.1
b[(Intercept) sponsors:Saint_Louis_University]                        -0.1    0.1
b[(Intercept) sponsors:The_Philadelphia_Inquirer]                      0.0    0.1
b[(Intercept) sponsors:The_Times_of_London_|_SAY24]                   -0.1    0.1
b[(Intercept) sponsors:University_of_Texas]                            0.0    0.1
b[(Intercept) sponsors:Yahoo_News]                                     0.0    0.0
b[(Intercept) state:Arizona]                                           0.0    0.0
b[(Intercept) state:Georgia]                                           0.0    0.0
b[(Intercept) state:Michigan]                                          0.0    0.0
b[(Intercept) state:Missouri]                                          0.0    0.0
b[(Intercept) state:National]                                          0.0    0.0
b[(Intercept) state:North_Carolina]                                    0.0    0.0
b[(Intercept) state:Pennsylvania]                                      0.0    0.0
b[(Intercept) state:Texas]                                             0.0    0.0
b[(Intercept) state:Wisconsin]                                         0.0    0.0
b[(Intercept) pollster:Siena/NYT]                                      0.0    0.1
b[(Intercept) pollster:YouGov]                                         0.0    0.1
b[(Intercept) pollster:YouGov_Blue]                                    0.0    0.1
b[(Intercept) pollster:YouGov/Center_for_Working_Class_Politics]       0.0    0.1
b[(Intercept) methodology:Live_Phone]                                  0.0    0.3
b[(Intercept) methodology:Online_Panel]                               -0.1    0.3
Sigma[sponsors:(Intercept),(Intercept)]                                0.0    0.0
Sigma[state:(Intercept),(Intercept)]                                   0.0    0.0
Sigma[pollster:(Intercept),(Intercept)]                                0.0    0.1
Sigma[methodology:(Intercept),(Intercept)]                             0.2    0.5
                                                                       10%    50%
(Intercept)                                                           -0.4   -0.1
b[(Intercept) sponsors:Carolina_Forward]                              -0.1    0.0
b[(Intercept) sponsors:CATO_Institute]                                -0.1    0.0
b[(Intercept) sponsors:CBS_News]                                       0.1    0.2
b[(Intercept) sponsors:Economist]                                      0.0    0.0
b[(Intercept) sponsors:Institute_for_Global_Affairs]                  -0.1   -0.1
b[(Intercept) sponsors:Jacobin]                                       -0.1    0.0
b[(Intercept) sponsors:Saint_Louis_University]                        -0.2   -0.1
b[(Intercept) sponsors:The_Philadelphia_Inquirer]                     -0.1    0.0
b[(Intercept) sponsors:The_Times_of_London_|_SAY24]                   -0.1   -0.1
b[(Intercept) sponsors:University_of_Texas]                           -0.1    0.0
b[(Intercept) sponsors:Yahoo_News]                                     0.0    0.0
```

```
b[(Intercept) state:Arizona]                                           -0.1   0.0
b[(Intercept) state:Georgia]                                            0.0   0.0
b[(Intercept) state:Michigan]                                           0.0   0.0
b[(Intercept) state:Missouri]                                          -0.1   0.0
b[(Intercept) state:National]                                           0.0   0.0
b[(Intercept) state:North_Carolina]                                     0.0   0.0
b[(Intercept) state:Pennsylvania]                                       0.0   0.0
b[(Intercept) state:Texas]                                              0.0   0.0
b[(Intercept) state:Wisconsin]                                          0.0   0.0
b[(Intercept) pollster:Siena/NYT]                                      -0.1   0.0
b[(Intercept) pollster:YouGov]                                         -0.1   0.0
b[(Intercept) pollster:YouGov_Blue]                                    -0.1   0.0
b[(Intercept) pollster:YouGov/Center_for_Working_Class_Politics]       -0.1   0.0
b[(Intercept) methodology:Live_Phone]                                  -0.3   0.0
b[(Intercept) methodology:Online_Panel]                                -0.4   0.0
Sigma[sponsors:(Intercept),(Intercept)]                                 0.0   0.0
Sigma[state:(Intercept),(Intercept)]                                    0.0   0.0
Sigma[pollster:(Intercept),(Intercept)]                                 0.0   0.0
Sigma[methodology:(Intercept),(Intercept)]                              0.0   0.1
                                                                        90%
(Intercept)                                                             0.2
b[(Intercept) sponsors:Carolina_Forward]                                0.1
b[(Intercept) sponsors:CATO_Institute]                                  0.0
b[(Intercept) sponsors:CBS_News]                                        0.2
b[(Intercept) sponsors:Economist]                                       0.1
b[(Intercept) sponsors:Institute_for_Global_Affairs]                    0.0
b[(Intercept) sponsors:Jacobin]                                         0.1
b[(Intercept) sponsors:Saint_Louis_University]                          0.0
b[(Intercept) sponsors:The_Philadelphia_Inquirer]                       0.1
b[(Intercept) sponsors:The_Times_of_London_|_SAY24]                     0.0
b[(Intercept) sponsors:University_of_Texas]                             0.0
b[(Intercept) sponsors:Yahoo_News]                                      0.1
b[(Intercept) state:Arizona]                                            0.0
b[(Intercept) state:Georgia]                                            0.0
b[(Intercept) state:Michigan]                                           0.0
b[(Intercept) state:Missouri]                                           0.0
b[(Intercept) state:National]                                           0.1
b[(Intercept) state:North_Carolina]                                     0.0
b[(Intercept) state:Pennsylvania]                                       0.0
b[(Intercept) state:Texas]                                              0.0
b[(Intercept) state:Wisconsin]                                          0.1
b[(Intercept) pollster:Siena/NYT]                                       0.2
b[(Intercept) pollster:YouGov]                                          0.1
```

```
b[(Intercept) pollster:YouGov_Blue]                                        0.1
b[(Intercept) pollster:YouGov/Center_for_Working_Class_Politics]           0.1
b[(Intercept) methodology:Live_Phone]                                      0.4
b[(Intercept) methodology:Online_Panel]                                    0.2
Sigma[sponsors:(Intercept),(Intercept)]                                    0.0
Sigma[state:(Intercept),(Intercept)]                                       0.0
Sigma[pollster:(Intercept),(Intercept)]                                    0.1
Sigma[methodology:(Intercept),(Intercept)]                                 0.7


Fit Diagnostics:
            mean    sd    10%   50%   90%
mean_PPD 630.2     3.3 626.0 630.2 634.3


The mean_ppd is the sample average posterior predictive distribution of the outcome variable


MCMC diagnostics
                                                                         mcse Rhat
(Intercept)                                                               0.0  1.0
b[(Intercept) sponsors:Carolina_Forward]                                  0.0  1.0
b[(Intercept) sponsors:CATO_Institute]                                    0.0  1.0
b[(Intercept) sponsors:CBS_News]                                          0.0  1.0
b[(Intercept) sponsors:Economist]                                         0.0  1.0
b[(Intercept) sponsors:Institute_for_Global_Affairs]                      0.0  1.0
b[(Intercept) sponsors:Jacobin]                                           0.0  1.0
b[(Intercept) sponsors:Saint_Louis_University]                            0.0  1.0
b[(Intercept) sponsors:The_Philadelphia_Inquirer]                         0.0  1.0
b[(Intercept) sponsors:The_Times_of_London_|_SAY24]                       0.0  1.0
b[(Intercept) sponsors:University_of_Texas]                               0.0  1.0
b[(Intercept) sponsors:Yahoo_News]                                        0.0  1.0
b[(Intercept) state:Arizona]                                              0.0  1.0
b[(Intercept) state:Georgia]                                              0.0  1.0
b[(Intercept) state:Michigan]                                             0.0  1.0
b[(Intercept) state:Missouri]                                             0.0  1.0
b[(Intercept) state:National]                                             0.0  1.0
b[(Intercept) state:North_Carolina]                                       0.0  1.0
b[(Intercept) state:Pennsylvania]                                         0.0  1.0
b[(Intercept) state:Texas]                                                0.0  1.0
b[(Intercept) state:Wisconsin]                                            0.0  1.0
b[(Intercept) pollster:Siena/NYT]                                         0.0  1.0
b[(Intercept) pollster:YouGov]                                            0.0  1.0
b[(Intercept) pollster:YouGov_Blue]                                       0.0  1.0
b[(Intercept) pollster:YouGov/Center_for_Working_Class_Politics]          0.0  1.0
b[(Intercept) methodology:Live_Phone]                                     0.0  1.0
```

```
b[(Intercept) methodology:Online_Panel]                          0.0  1.0
Sigma[sponsors:(Intercept),(Intercept)]                          0.0  1.0
Sigma[state:(Intercept),(Intercept)]                             0.0  1.0
Sigma[pollster:(Intercept),(Intercept)]                          0.0  1.0
Sigma[methodology:(Intercept),(Intercept)]                       0.0  1.0
mean_PPD                                                         0.1  1.0
log-posterior                                                    0.2  1.0
                                                                 n_eff
(Intercept)                                                      1057
b[(Intercept) sponsors:Carolina_Forward]                        3675
b[(Intercept) sponsors:CATO_Institute]                          2260
b[(Intercept) sponsors:CBS_News]                                1801
b[(Intercept) sponsors:Economist]                               1779
b[(Intercept) sponsors:Institute_for_Global_Affairs]            2664
b[(Intercept) sponsors:Jacobin]                                 3099
b[(Intercept) sponsors:Saint_Louis_University]                  2119
b[(Intercept) sponsors:The_Philadelphia_Inquirer]               3338
b[(Intercept) sponsors:The_Times_of_London_|_SAY24]             3061
b[(Intercept) sponsors:University_of_Texas]                     2310
b[(Intercept) sponsors:Yahoo_News]                              1793
b[(Intercept) state:Arizona]                                    3497
b[(Intercept) state:Georgia]                                    4801
b[(Intercept) state:Michigan]                                   3925
b[(Intercept) state:Missouri]                                   2186
b[(Intercept) state:National]                                   2422
b[(Intercept) state:North_Carolina]                             3719
b[(Intercept) state:Pennsylvania]                               3689
b[(Intercept) state:Texas]                                      3501
b[(Intercept) state:Wisconsin]                                  2260
b[(Intercept) pollster:Siena/NYT]                               2528
b[(Intercept) pollster:YouGov]                                  1953
b[(Intercept) pollster:YouGov_Blue]                             2369
b[(Intercept) pollster:YouGov/Center_for_Working_Class_Politics] 2291
b[(Intercept) methodology:Live_Phone]                           1177
b[(Intercept) methodology:Online_Panel]                         1128
Sigma[sponsors:(Intercept),(Intercept)]                         1617
Sigma[state:(Intercept),(Intercept)]                            1438
Sigma[pollster:(Intercept),(Intercept)]                         1854
Sigma[methodology:(Intercept),(Intercept)]                      1315
mean_PPD                                                        3720
log-posterior                                                    949

For each parameter, mcse is Monte Carlo standard error, n_eff is a crude measure of effective
```
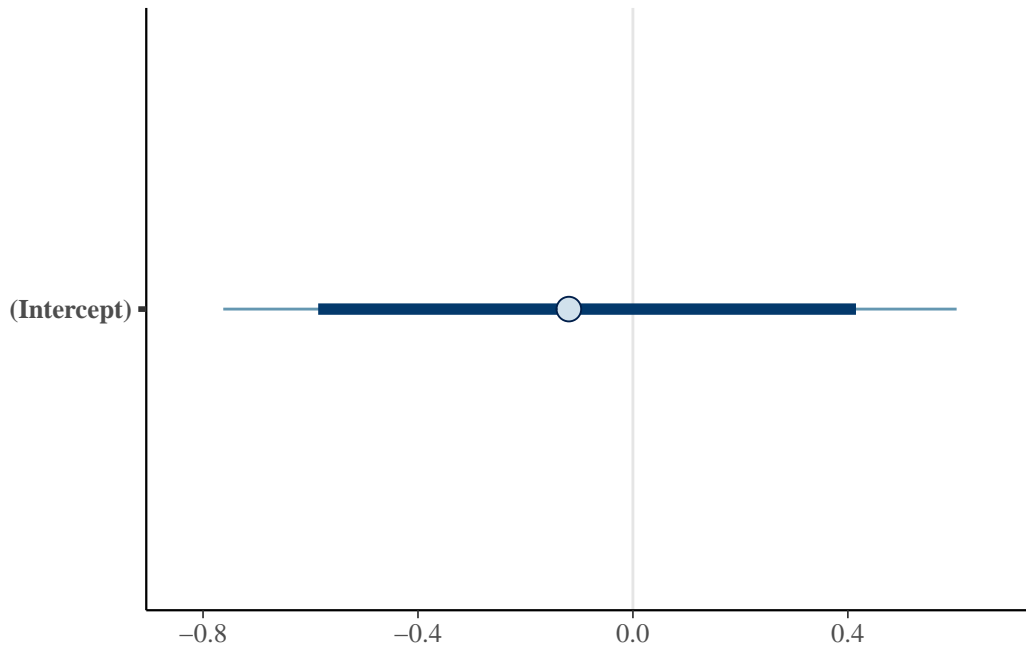
```
Model Info:
 function:     stan_glm
 family:       gaussian [identity]
 formula:      pct ~ ns(end_date_num, df = 5) + pollster + state + sponsors +
      methodology
 algorithm:    sampling
 sample:       4000 (posterior sample size)
 priors:       see help('prior_summary')
 observations: 69
 predictors:   28

Estimates:
                                               mean   sd  10%   50%   90%
(Intercept)                                    43.5  4.5 37.7  43.5  49.3
ns(end_date_num, df = 5)1                       0.5  1.7 -1.6   0.5   2.7
ns(end_date_num, df = 5)2                       6.0  1.7  3.8   6.0   8.1
ns(end_date_num, df = 5)3                       2.6  1.3  0.9   2.6   4.2
ns(end_date_num, df = 5)4                       5.5  2.5  2.3   5.5   8.8
ns(end_date_num, df = 5)5                       2.6  1.3  0.9   2.6   4.2
pollsterYouGov                                 -0.8  3.5 -5.4  -0.8   3.7
pollsterYouGov Blue                             0.8  4.1 -4.5   0.9   6.0
pollsterYouGov/Center for Working Class Politics -0.5  4.0 -5.7  -0.5   4.5
```

```
stateGeorgia                                        -0.8    2.3 -3.7  -0.8    2.1
stateMichigan                                        1.6    1.9 -0.8   1.6    3.9
stateMissouri                                       -1.2    3.8 -6.1  -1.1    3.7
stateNational                                        2.7    1.7  0.6   2.7    4.8
stateNorth Carolina                                  0.8    4.1 -4.5   0.9    5.9
statePennsylvania                                    1.4    1.9 -1.0   1.4    3.7
stateTexas                                           0.2    3.7 -4.5   0.2    4.9
stateWisconsin                                       3.9    1.9  1.5   3.9    6.4
sponsorsCATO Institute                               0.6    2.2 -2.2   0.7    3.4
sponsorsCBS News                                     3.2    1.9  0.7   3.3    5.8
sponsorsEconomist                                   -0.6    2.0 -3.1  -0.6    2.0
sponsorsInstitute for Global Affairs                -1.9    2.4 -5.0  -1.9    1.3
sponsorsJacobin                                     -0.6    4.0 -5.6  -0.6    4.5
sponsorsSaint Louis University                      -1.2    3.9 -6.2  -1.3    3.8
sponsorsThe Philadelphia Inquirer                    0.6    4.0 -4.5   0.5    5.7
sponsorsThe Times of London | SAY24                 -0.7    2.5 -3.9  -0.7    2.5
sponsorsUniversity of Texas                          0.2    3.7 -4.5   0.1    4.9
sponsorsYahoo News                                  -0.9    2.0 -3.4  -0.9    1.7
methodologyOnline Panel                             -0.6    4.0 -5.8  -0.6    4.5
sigma                                                1.8    0.2  1.6   1.8    2.1


Fit Diagnostics:
          mean    sd   10%   50%   90%
mean_PPD 47.2     0.3 46.8  47.2  47.6


The mean_ppd is the sample average posterior predictive distribution of the outcome variable

MCMC diagnostics
                                                    mcse Rhat n_eff
(Intercept)                                         0.1  1.0  3911
ns(end_date_num, df = 5)1                           0.0  1.0  4168
ns(end_date_num, df = 5)2                           0.0  1.0  4307
ns(end_date_num, df = 5)3                           0.0  1.0  5617
ns(end_date_num, df = 5)4                           0.0  1.0  4275
ns(end_date_num, df = 5)5                           0.0  1.0  5032
pollsterYouGov                                      0.1  1.0  3431
pollsterYouGov Blue                                 0.1  1.0  4413
pollsterYouGov/Center for Working Class Politics 0.1  1.0  5651
stateGeorgia                                        0.0  1.0  3565
stateMichigan                                       0.0  1.0  2129
stateMissouri                                       0.1  1.0  4195
stateNational                                       0.0  1.0  2519
stateNorth Carolina                                 0.1  1.0  4535
```

```
statePennsylvania                          0.0  1.0  2077
stateTexas                                 0.1  1.0  4581
stateWisconsin                             0.0  1.0  2138
sponsorsCATO Institute                     0.1  1.0  1876
sponsorsCBS News                           0.0  1.0  1512
sponsorsEconomist                          0.1  1.0  1529
sponsorsInstitute for Global Affairs       0.0  1.0  2379
sponsorsJacobin                            0.1  1.0  5423
sponsorsSaint Louis University             0.1  1.0  4066
sponsorsThe Philadelphia Inquirer          0.1  1.0  4921
sponsorsThe Times of London | SAY24        0.1  1.0  2165
sponsorsUniversity of Texas                0.1  1.0  4140
sponsorsYahoo News                         0.0  1.0  1631
methodologyOnline Panel                    0.1  1.0  4370
sigma                                      0.0  1.0  3318
mean_PPD                                   0.0  1.0  4790
log-posterior                              0.1  1.0  1278
```

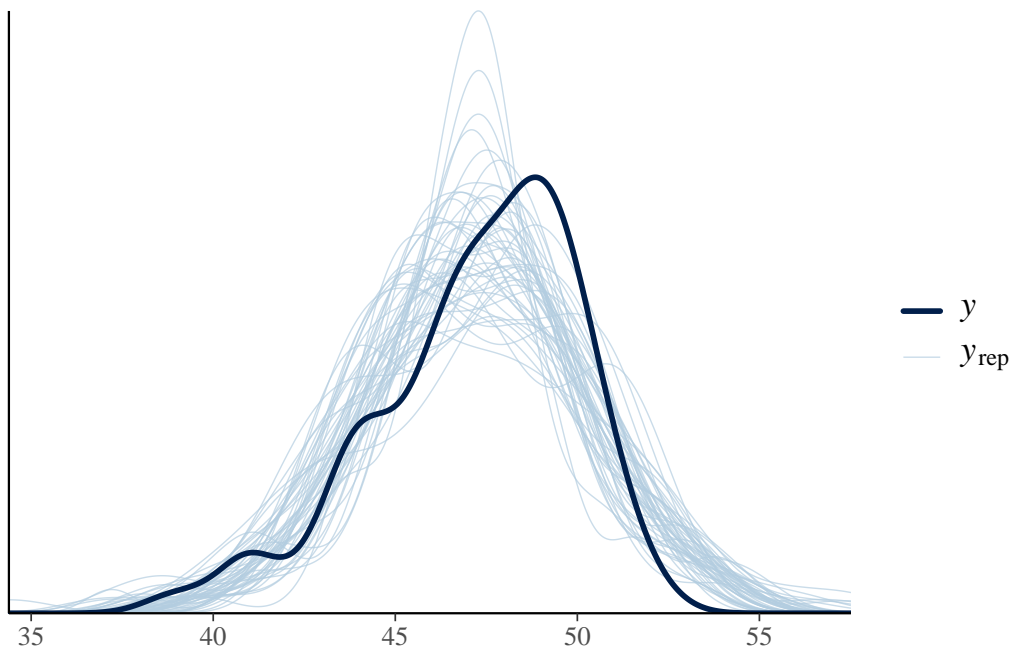For each parameter, mcse is Monte Carlo standard error, n_eff is a crude measure of effective

Figure 1: Street tree count of 10 most popoulus tree species in Toronto up to September 2024

6 Discussion

6.1 Trends from pollsters

6.2 Trends from states

6.3 Trends from sponsors

6.4 Trends from methodology

6.5 Weaknesses and next steps

7 Appendix

7.1 Pollster Analysis

7.2 Poll Blueprint

References

Lopez, Ashley. 2024. "The race is so close. here's what happens if there's a 269-269 electoral college tie." *NPR*. NPR. https://www.npr.org/2024/10/21/nx-s1-5150099/electoral-college-tie-explainer.