Question 3

1. Introduction

Does a case of COVID-19 in someone's household change how they approve of their governor's response to the pandemic?

Before the advent of COVID-19, America's social fabric was already stretched thin by accelerating political polarization. Now, with the advent of COVID-19 and the damage it has wrought, that fabric appears at risk of being torn asunder. COVID-19 has become the gravitational center around which all other contemporary American politics revolve.

The federal government has left much of the pandemic response to state and local governments. A scattered and inconsistent landscape of policies that has gradually taken shape implies that our personal experiences of the pandemic have been highly regionally based. Yet with the country as divided as it is - a division which also has geographical components - does experiencing COVID-19 up close and personal impact people's perception of their local official's handling of the pandemic? Or do the tribes stick to their pre-baked narratives regardless of experience? The answer to this question could have implications for further efforts to de-radicalize the ever growing political division in our country.

In this report, we ask: are people who have shared a house with someone with more likely to approve or disapprove of their governor's pandemic response?

Data: sources & summary

To answer this question, we use data released just last month by the American National Election Studies. This dataset is the preliminary release of the ANES' 2020 pre-election survey, and was collected in collaboration with Westat Inc. and Marketing Systems Group, survey research firms. Resondents were surveyed from August 18, 2020 to November 3, 2020.

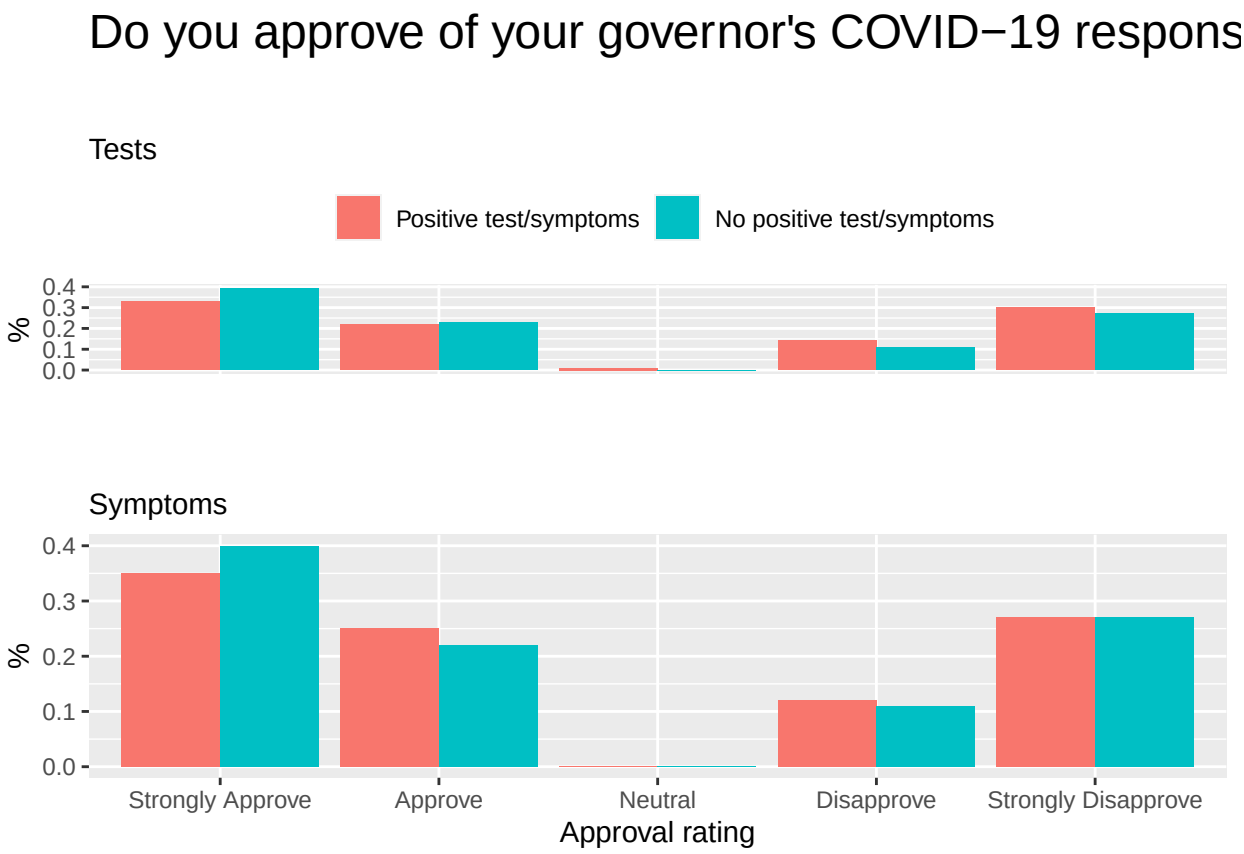
The ANES' dataset provides two measures of COVID-19 household prevalance. First, respondents are asked if anyone in their household has tested positive for COVID-19. Second, they are asked if anyone in their household has COVID-19 like symptoms (but not necessarily a positive test result). We operationalize on both of these, and investigate whether people's approval varied significantly in houses with COVID-19 and those without.

```
##           Positive
## Measure     Yes   No Total
##   Test      286 7858  8144
##   Symptoms  993 7152  8145
```

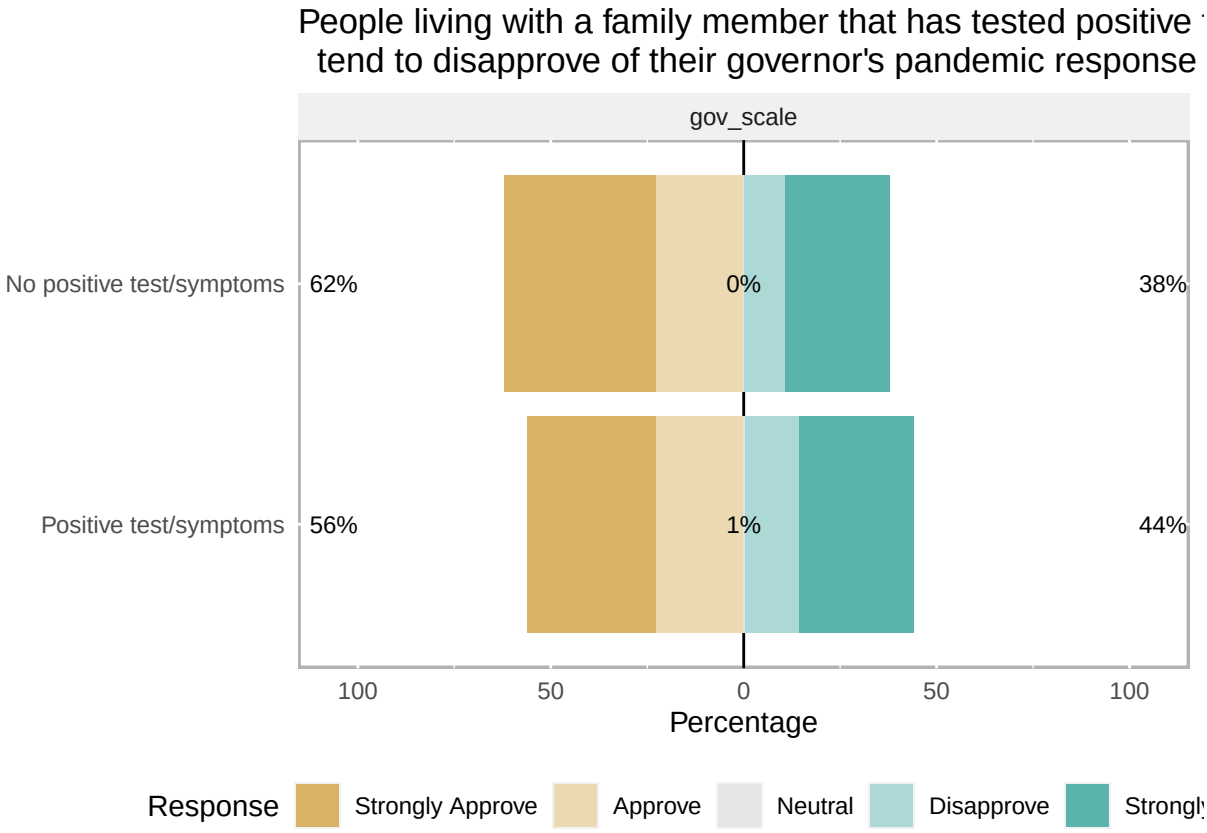
Note: "total" values are different, since some respondents may have responded to one question about symptoms, but not the other, and vice versa.

Out of a total of 8,144 respondents, 286 (~3.5%) lived in households where someone tested positive for COVID-19. Three and a half times as many people reported as living with someone that exhibited signs of COVID-19 - 993 respondents (~12%)

The ANES' survey includes two questions that gauge respondents' approval or disapproval of their governor's response to the pandemic. The first has three options: approve, disapprove, or "don't know". The second is a binary choice: strongly or not strongly. I combined these two columns into a single five-point Likert scale as follows: 1 - Strongly Approve, 2 - Approve, 3 - Neutral ("don't know"), 4 - Disapprove, 5 - Strongly Disapprove.



[Comment on low number of neutrals]



Hypothesis tests

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  samples_positive_covid_test$gov_scale and samples_negative_covid_test$gov_scale
## W = 1200244, p-value = 0.03962
## alternative hypothesis: true location shift is not equal to 0
```

```
##
##  Wilcoxon rank sum test with continuity correction
##
## data:  samples_covid_symptoms$gov_scale and samples_no_covid_symptoms$gov_scale
## W = 3675564, p-value = 0.05957
## alternative hypothesis: true location shift is not equal to 0
```

Practical Significance

```
##
##  Spearman's rank correlation rho
##
## data:  q3_clean_covid_test$covid_test_positive and q3_clean_covid_test$gov_scale
```

```
## S = 9.2078e+10, p-value = 0.03961
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##         rho
## -0.02280314
```

```
## [1] -0.02280314
```

```
##
##  Spearman's rank correlation rho
##
## data:  q3_clean_covid_symptoms$covid_symptoms and q3_clean_covid_symptoms$gov_scale
## S = 9.1938e+10, p-value = 0.05957
## alternative hypothesis: true rho is not equal to 0
## sample estimates:
##         rho
## -0.02087623
```

```
## [1] -0.02087623
```