

The slide features several decorative icons. In the top left, there is a purple icon of two hands shaking. Scattered around the title are several light blue and green virus-like icons with spikes. In the bottom right corner, there is a purple icon of a car with a white rectangular area on its side, surrounded by blue circles and a cloud-like shape.

A Regression Analysis of the Spread of Covid-19

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Research Problem

Does the length of sheltering in place
affect Democratic or Republican states
differently?

Variables



Cases per 100k

- Number of positive cases per 100,000 individuals



Sheltering in Place

- Duration of shelter in place order
- Number of days



Political Party

- Political party affiliation of current state governor in office
- Indicator variable with 0 representing Democratic and 1 representing Republican



% Below Poverty Line

- Percentage of the state population that lives below the poverty line
- Percentage represented as a decimal

Variables



% White Pop.



% Black Pop.



% Hispanic Pop.



% "Other" Pop.

- Percentage of the state population that identified as a certain race
- Percentage represented as a decimal

Statistical Modeling

Measured by Cases per 100k



Baseline

Length of
shelter in place
+
State's political
party



Improvement (v1)

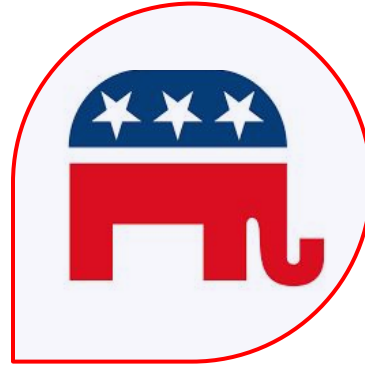
Baseline
+
% Under the
poverty line
+
% White cases



Improvement (v2)

Improvement
(v1)
+
% Black cases
+
% Hispanic
cases
+
% Other cases

Baseline Model



Republican

+451.062 cases per 100K

Shelter in Place

-8.477 cases per 100K per
one additional day



Intercept

In Democratic states with 0 days of
sheltering in place there is 2785.850
additional cases per 100K

Improvement (v1) Model



Republican



**Pop. under
Poverty Line**



**Shelter in
Place**



**% Cases
White**

Intercept

The baseline value
is 1660.463 number
of cases per 100K

+395.490 cases per
100K in Repub
states

+129.629 cases
per 100K
for each
additional %

-9.062 cases per
100K for each
additional day

-809.667 cases
per 100K per
additional %

Improvement (v2) Model

Measured by Cases per 100k



Baseline

Length of shelter
in place *
(-9 cases)
+
State's political
party

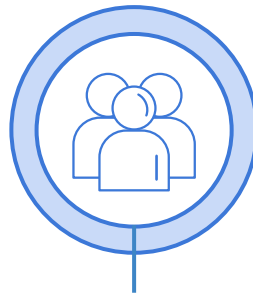
+



Improvement (v1)

Baseline
+
% Under the
poverty line **
(+175 cases)
+
% White cases

+



% Black Cases

+



% Hispanic Cases

+



% Other Cases

Conclusion

Shelter in Place

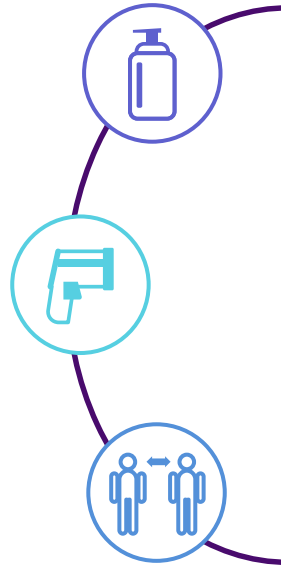
Sheltering in place
correlates with lower cases

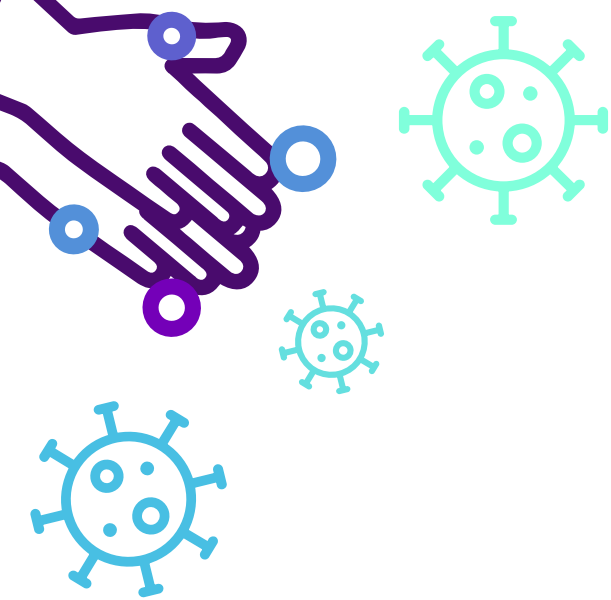
Confounding Factors

Multiple variables at play
complexify national situation

Keep Modeling

Continue studying trends to
better understand Covid-19's
impact





Thank you!

Any questions?

