

# Analysis of COVID-19 and the 2020 Election

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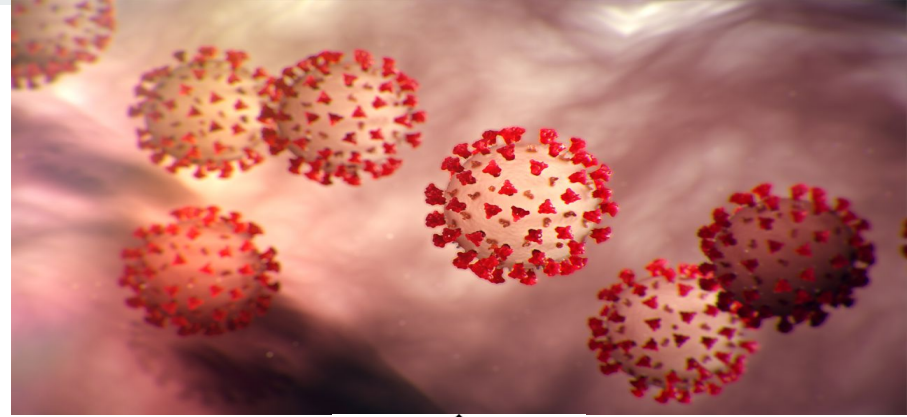


## Data Notes

- Covid-19 cases, deaths, demographic and economic numbers such as poverty rate, unemployment rate, etc.
- Names of some counties were recorded differently in the 2016 and 2020 datasets (Alaska and Vermont)
- Public demographic and economic data is obtained from 2017
- Data for COVID-19 cases were recorded on November 1st

## Research Question 1

How does the number of COVID-19 cases correlate to the proportion of votes for a presidential candidate?



## Filters

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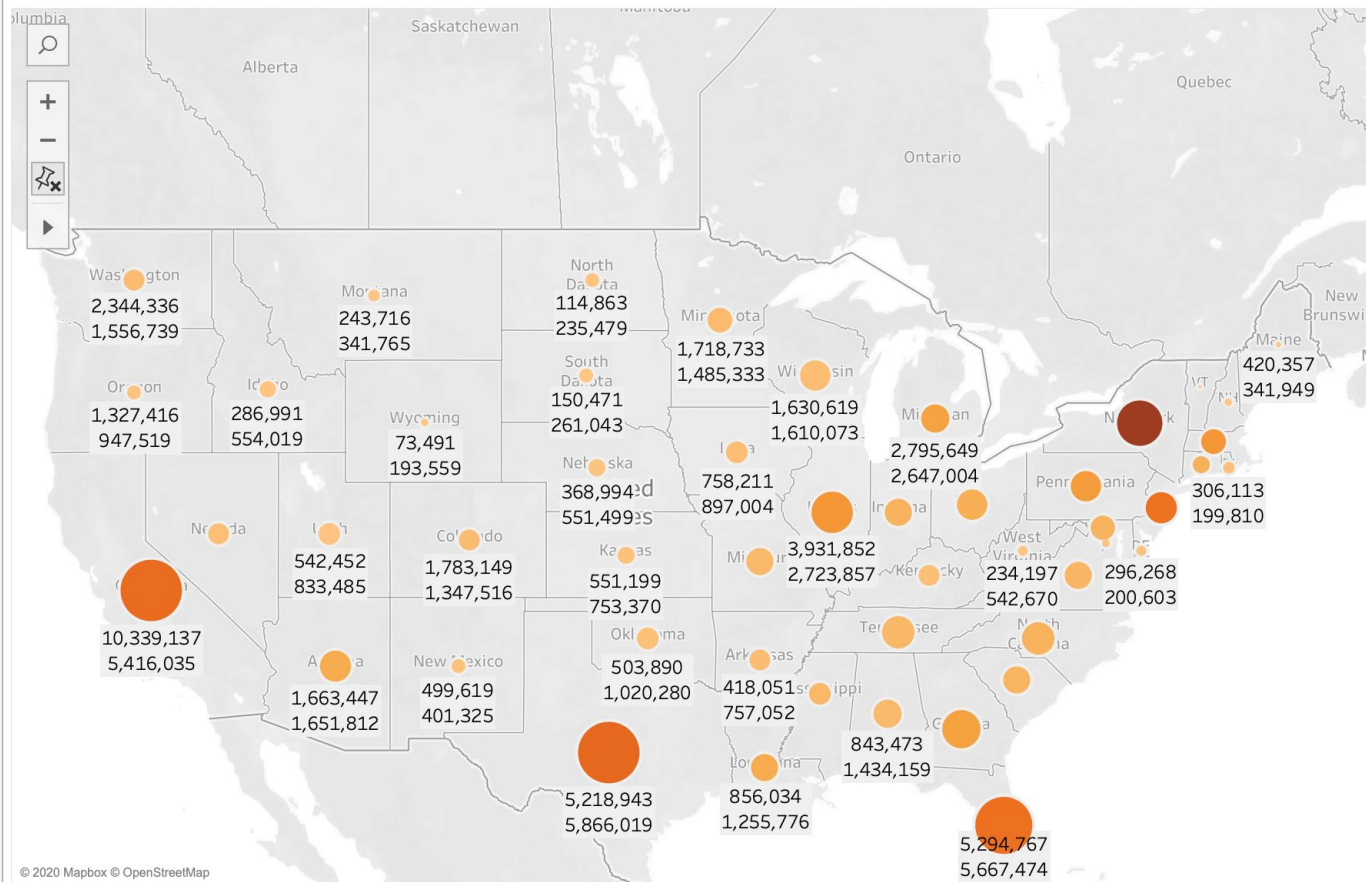
 SUM(Cases)

SUM(votes20 J..

**T** SUM(votes20 ..

State

## Sheet 1



SUM(Cases)

2,196

200,000

400,000

600,000

800,000

936.816

SUM(Deaths)

58

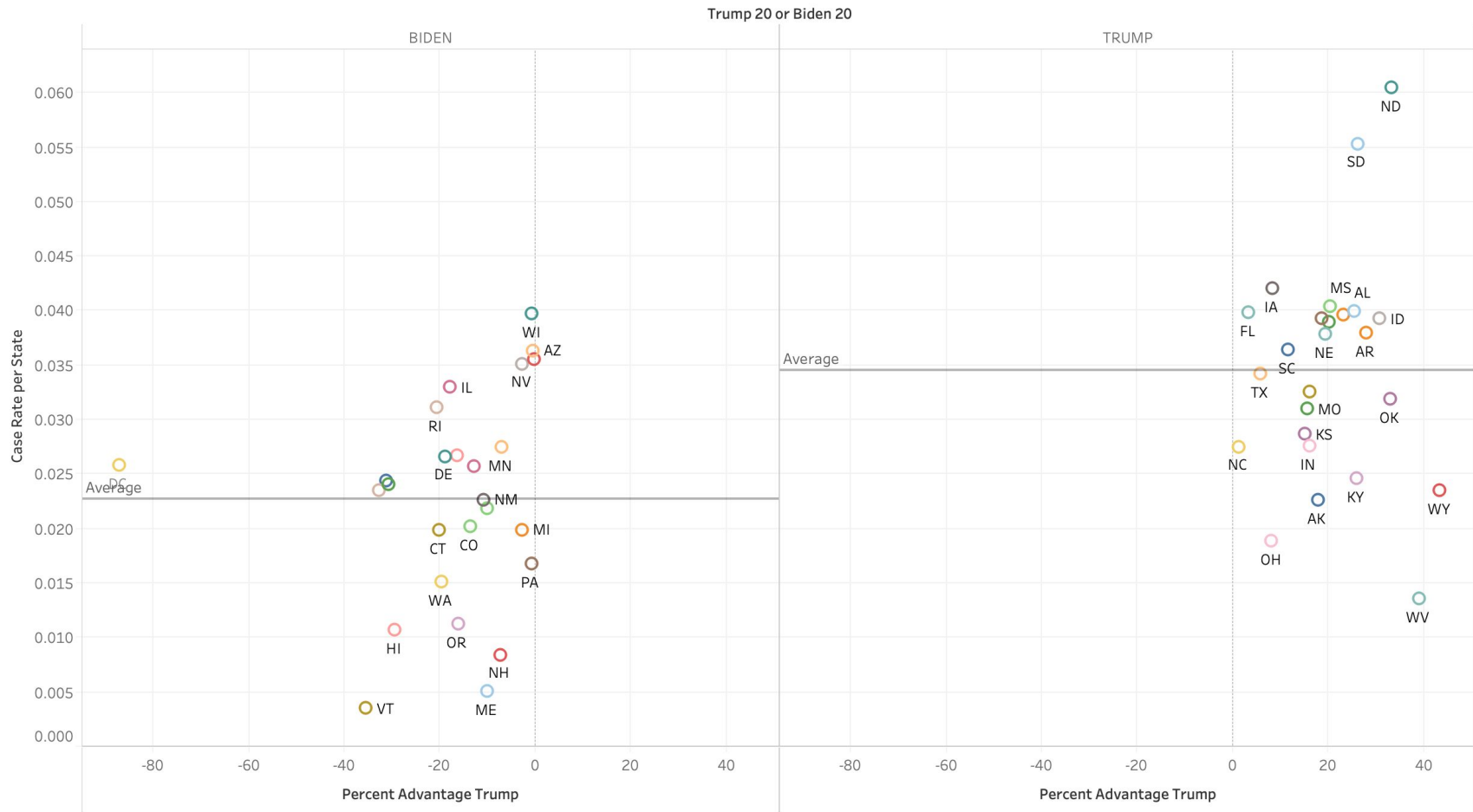
33,535

# COVID-19 Case Rate versus Advantage of Trump over Biden in Percentage

R-Squared Value: 0.220428

Pearson Correlation Coefficient: 0.4695





Average Case Rate for Biden States: 0.02270

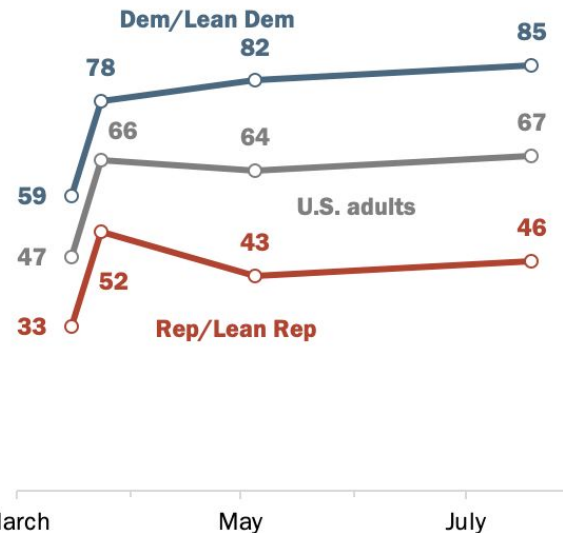
Average Case Rate for Trump States: 0.03454

## Far more Democrats than Republicans see COVID-19 as major threat to the health of the U.S. public

*% who say the coronavirus outbreak is a major threat to the health of the U.S. population as a whole ...*

### Conclusions for Research Question 1

- After plotting the rate of COVID-19 cases per state with the percentage difference, we can see a slight positive correlation that shows that states that cast more votes for Trump has more COVID-19 cases than states with more votes for Biden



Source: Survey conducted July 13-19, 2020.

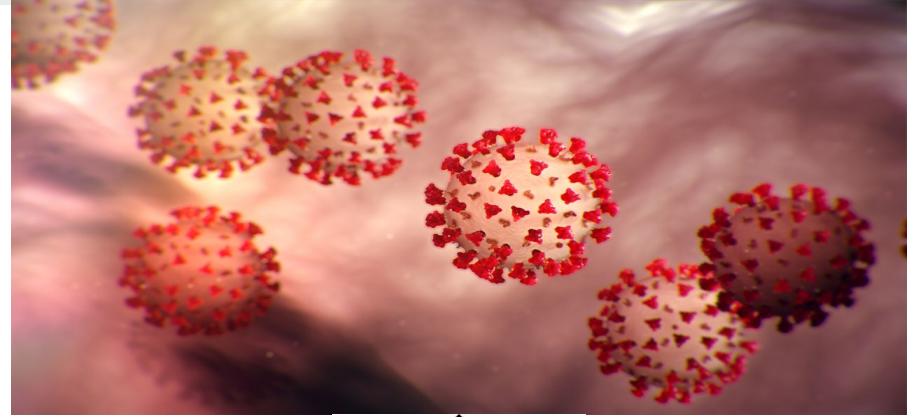
PEW RESEARCH CENTER

Pew Research Center Survey:

<https://www.pewresearch.org/fact-tank/2020/07/22/republicans-remain-far-less-likely-than-democrats-to-view-covid-19-as-a-major-threat-to-public-health/>

## Research Question 2

How does the number of  
COVID-19 deaths  
correlate to poverty rate?





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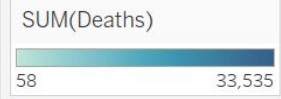
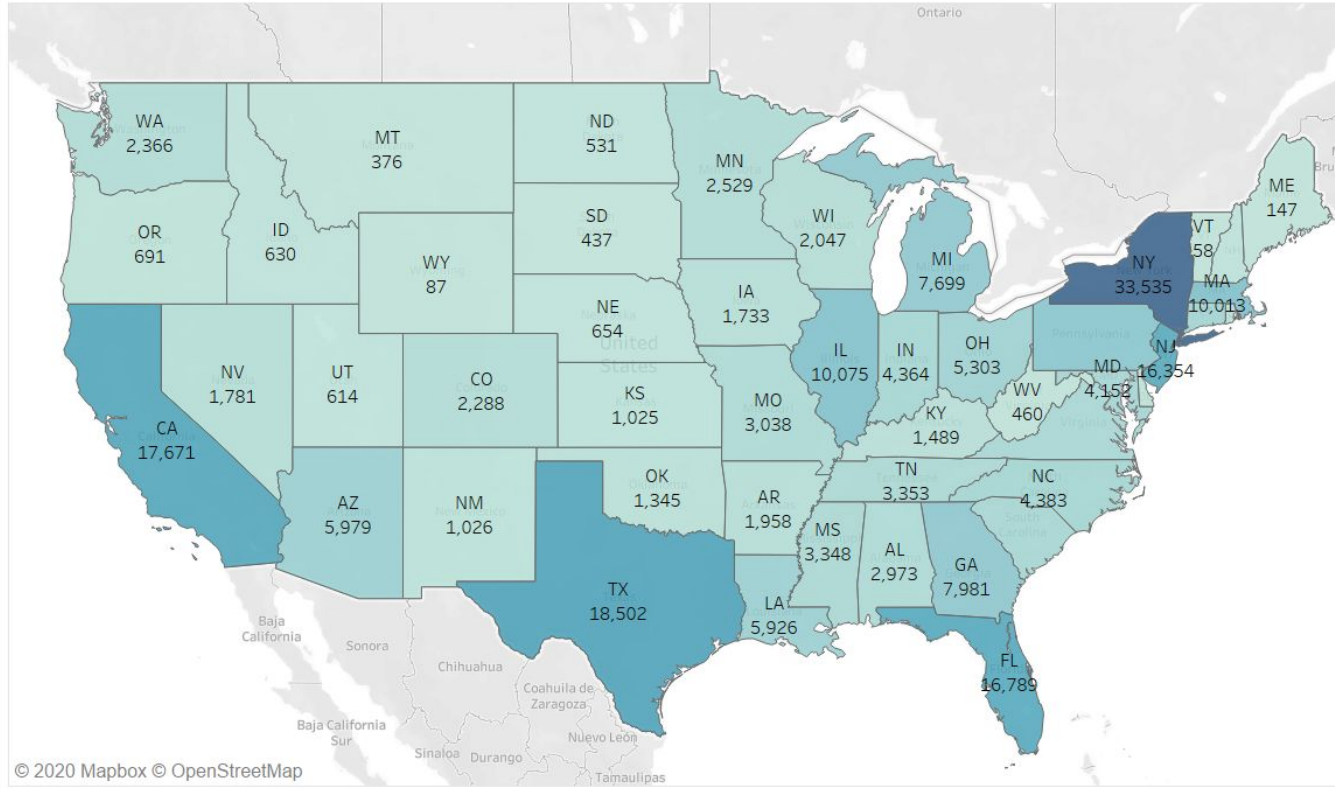
Automatic

Color Size Label

Detail Tooltip

SUM(Deaths)  
State  
SUM(Deaths)  
State

<COVID-19 Deaths in Each State>



© 2020 Mapbox © OpenStreetMap

Filters

Marks

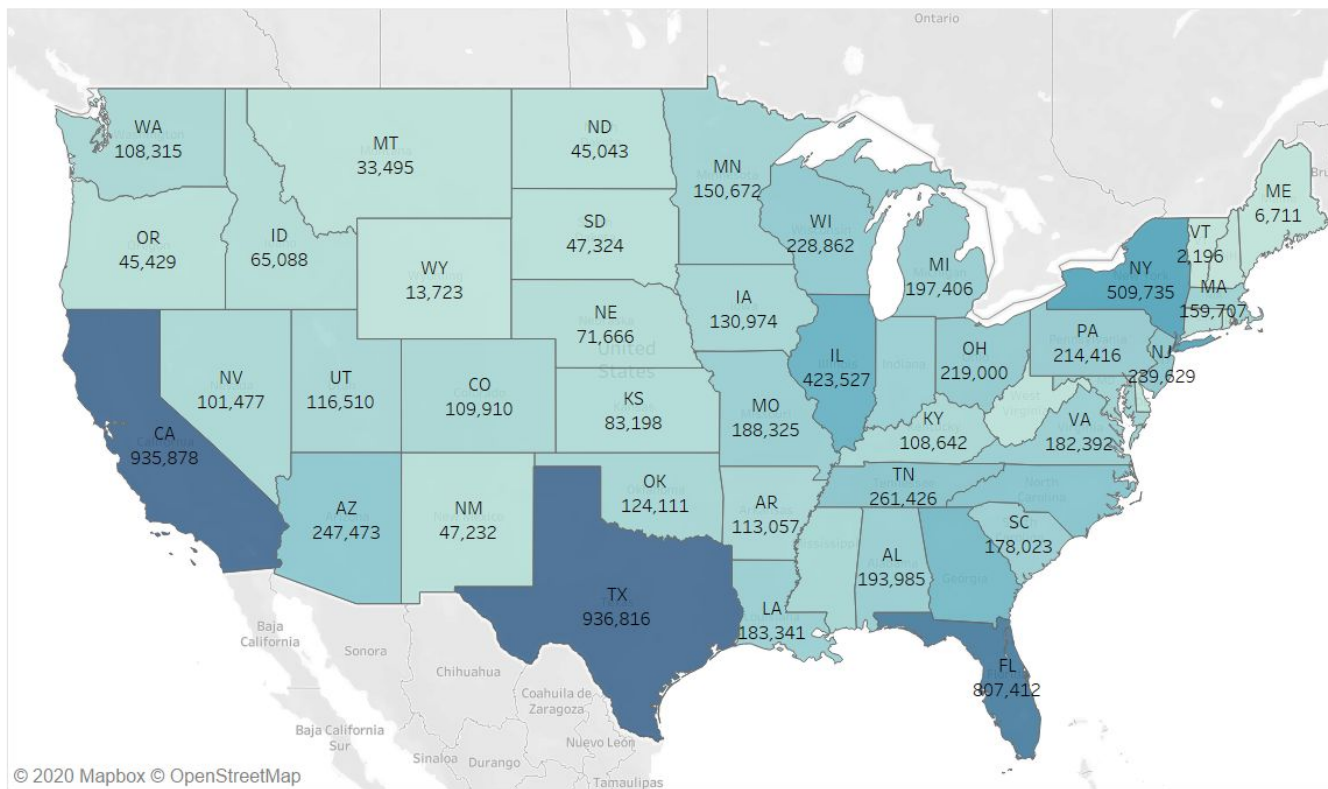
Automatic

Color Size Label

Detail Tooltip

SUM(Cases)  
State  
SUM(Cases)  
State

<COVID-19 Cases in Each State>



SUM(Cases)

2,196 936,816

© 2020 Mapbox © OpenStreetMap



Deaths/Cases

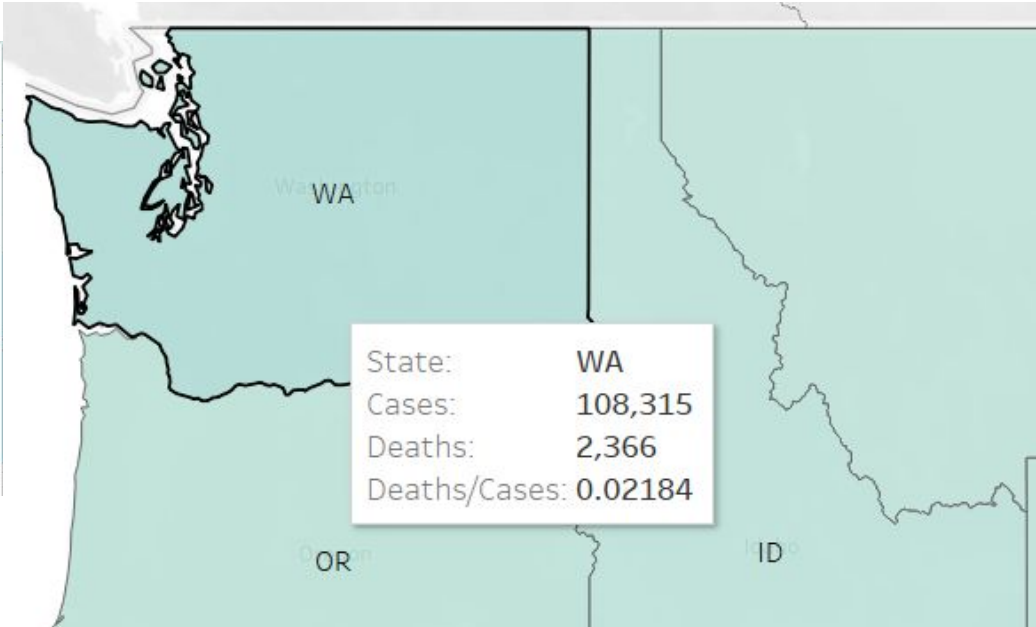
$\text{SUM}([Deaths]) / \text{SUM}([Cases])$

The calculation is valid.

1 Dependency ▾

Apply

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Filters

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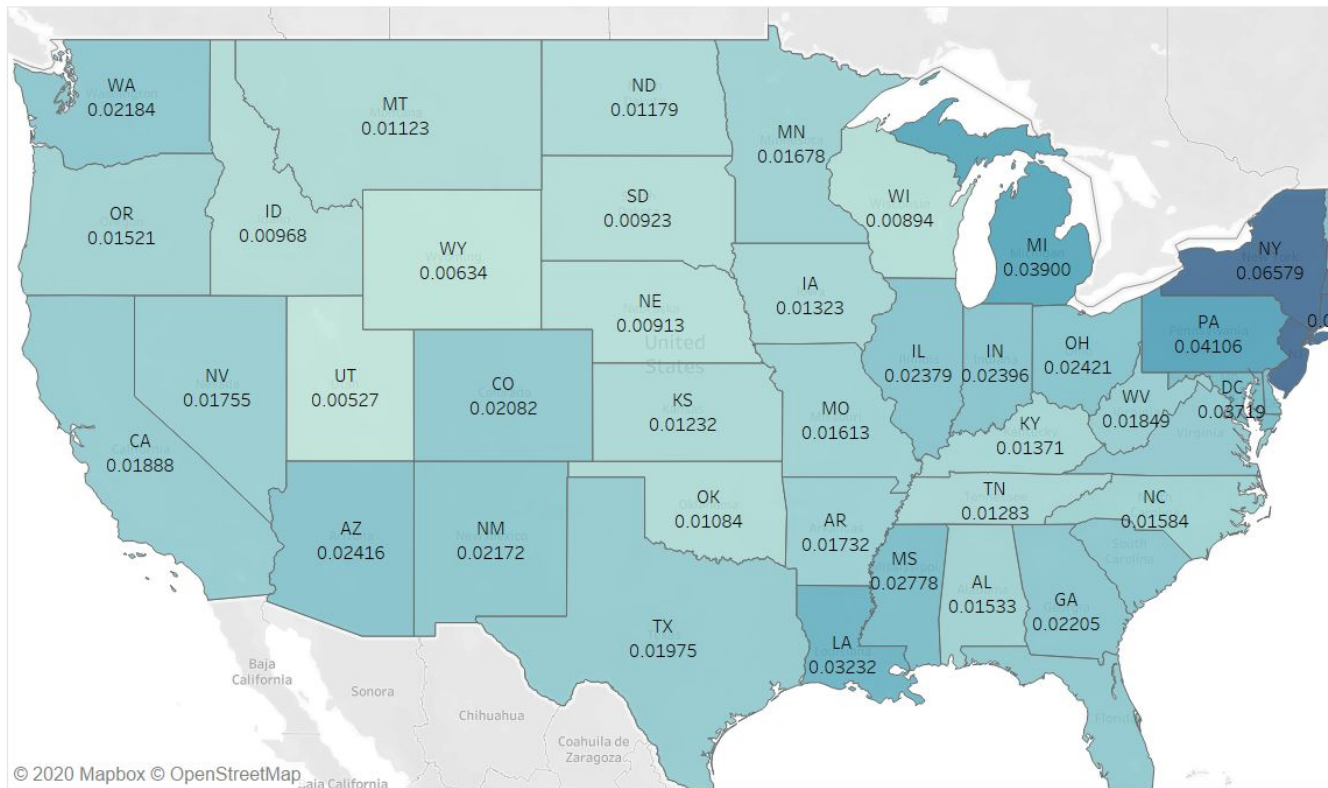
Automatic

Color Size Label

Detail Tooltip

AGG(Deaths/Cas..  
State  
AGG(Deaths/Cas..  
State

<COVID-19 Deaths Rate in Each State>



Filters

Marks

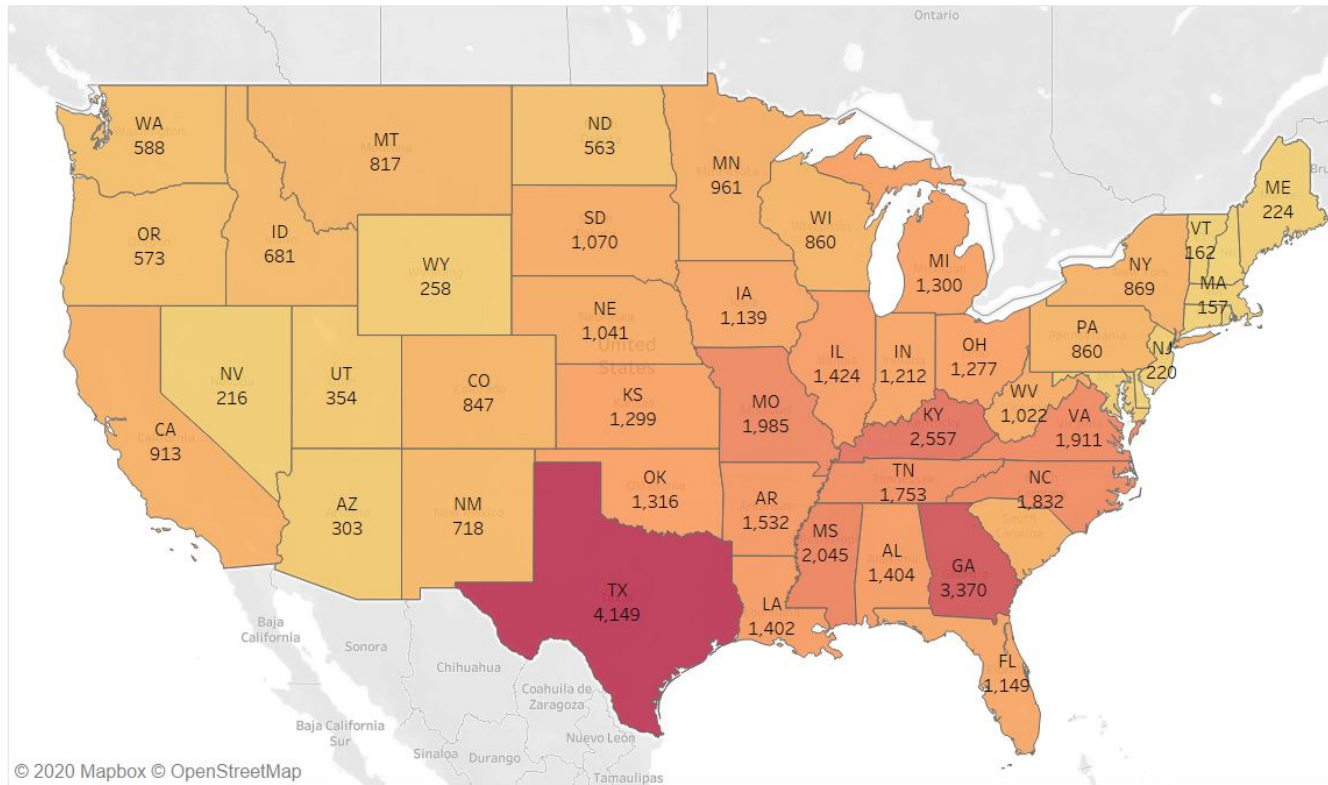
Automatic

Color Size Label

Detail Tooltip

SUM(Poverty)  
State  
SUM(Poverty)  
State

<Poverty Percentage in Each State>



SUM(Poverty)

17

4,149

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Real Poverty

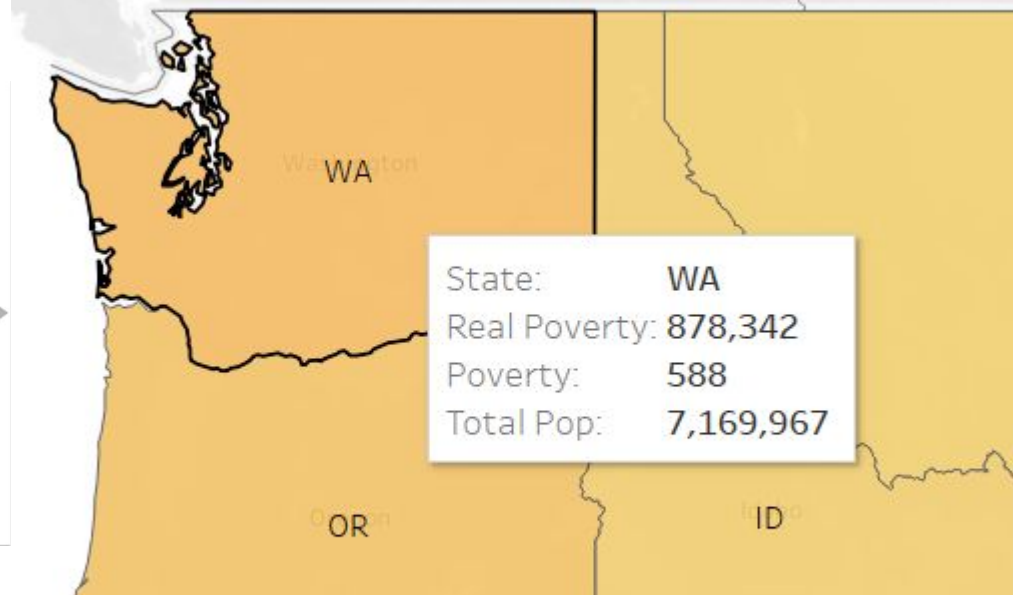
$([Poverty] * [Total Pop] / 100)$

The calculation is valid.

3 Dependencies ▾

Apply

OK





Filters

Marks

Automatic

Color

Size

Label

Detail

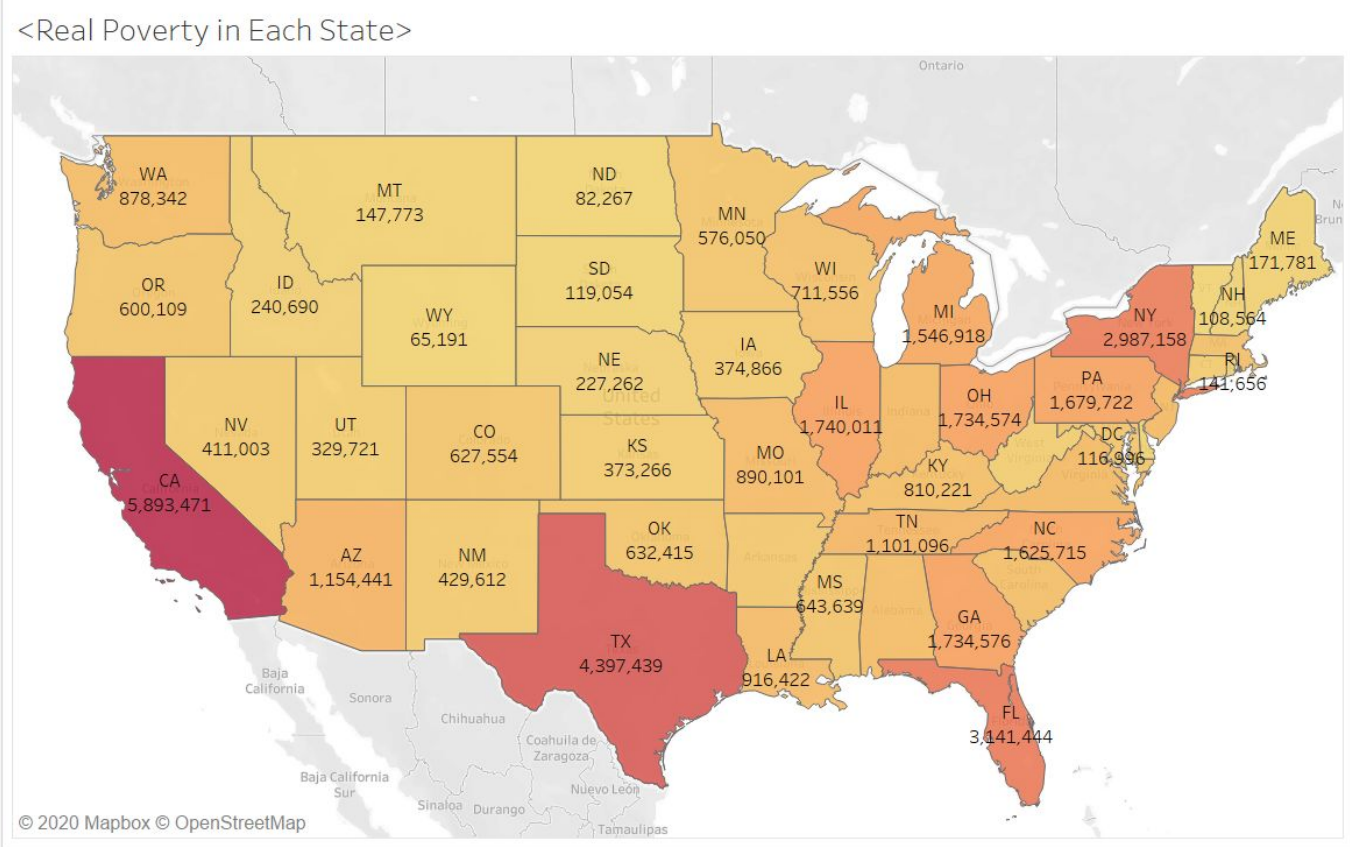
Tooltip

SUM(Real Poverty)

State

SUM(Real Poverty)

State





Poverty Rate per Sta



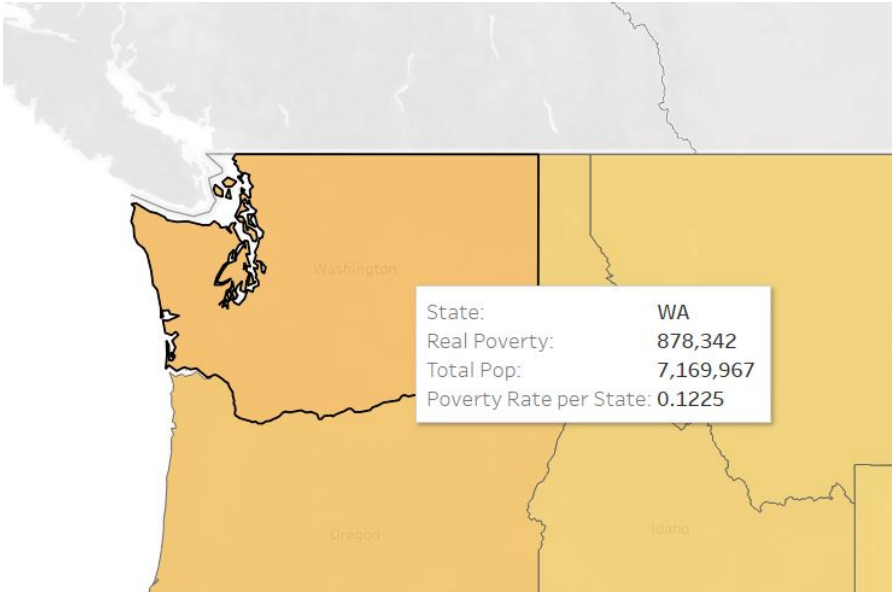
```
sum([Real Poverty])/sum([Total Pop])
```

The calculation is valid.

2 Dependencies ▾

Apply

OK





Filters

Marks

Automatic

Color

Size

Label

Detail

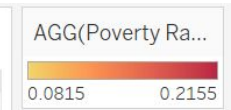
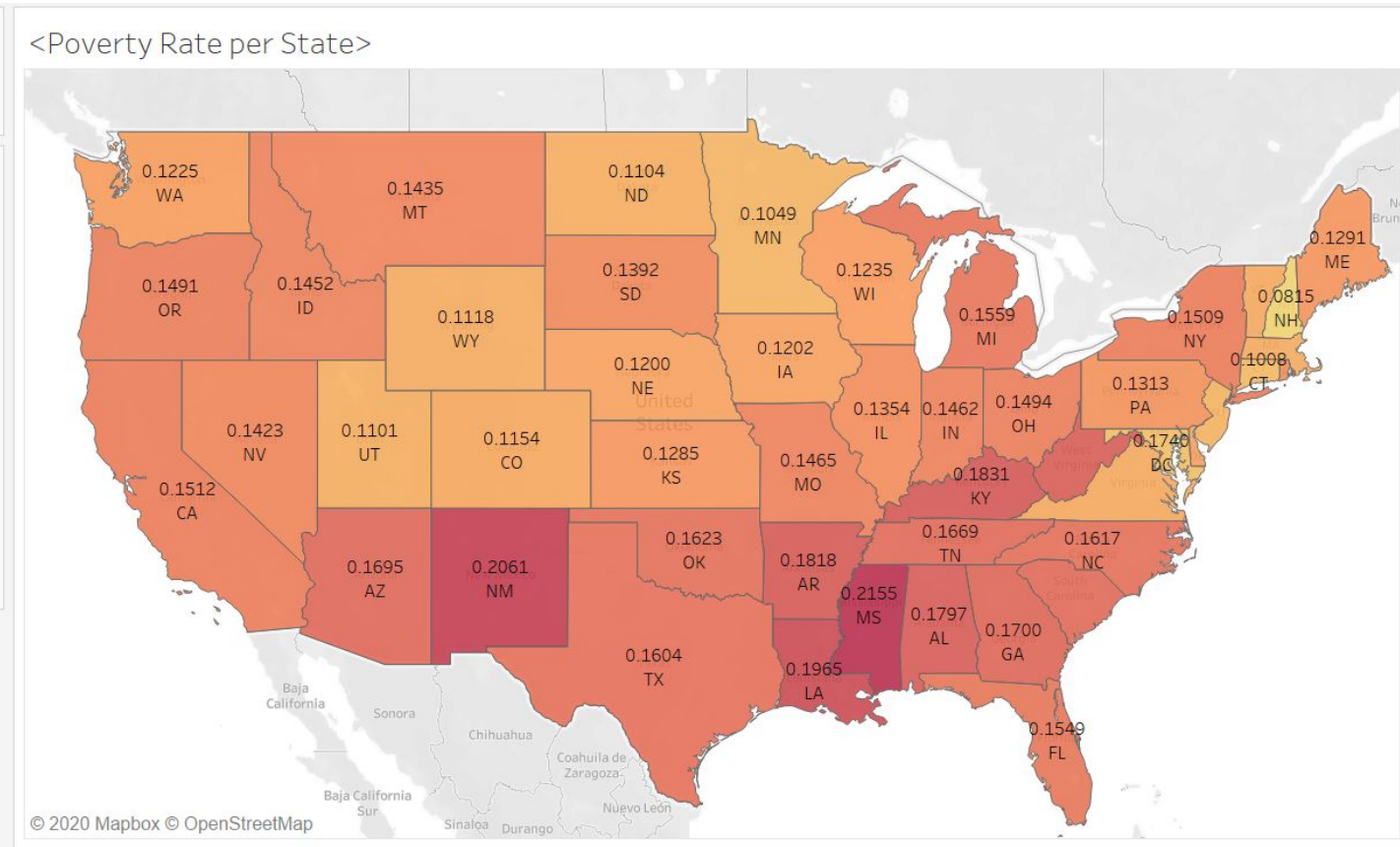
Tooltip

AGG(Poverty Rate..

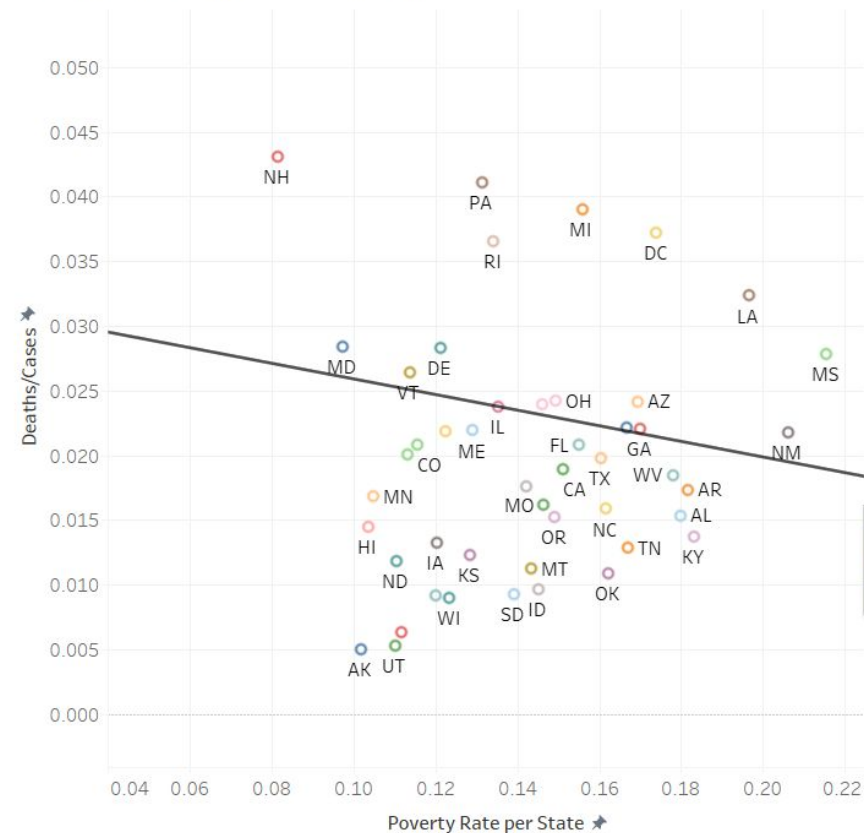
AGG(Poverty Rate..

State

State



<COVID-19 deaths vs Poverty>



## Conclusions for Research Question 2:

- Insufficient evidence to show that there is any correlation between the number of COVID-19 deaths and poverty.

R-Squared Value: 0.0143096

Pearson Correlation Coefficient: -0.119628

P-value: 0.403094

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associated with being on  
*the public transit system.*

**Christopher Knittel** | Professor, MIT Sloan

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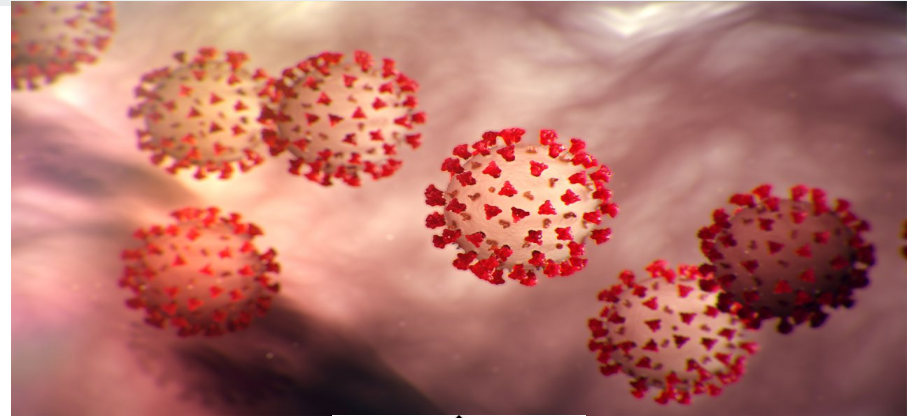
**2. African Americans and elderly people are more likely to die from COVID-19 relative to Caucasians and people under 65 — but the reasons are unclear.**

The researchers didn't find correlation between ICU beds per capita, obesity rates, or poverty rates and COVID-19 death rates; their research controlled for income and health insurance. This runs counter to many common narratives about higher death rates among African Americans and raises questions about whether systemic causes could be to blame.

Source: <https://mitsloan.mit.edu/ideas-made-to-matter/4-unexpected-findings-about-covid-19-deaths>

## Research Question 3

How do the unemployment rate and poverty rate affect the proportion of votes won by each presidential candidate?



# Poverty Rate per State versus Advantage of Trump over Biden in Percentage

R-Squared Value: 0.0608788

Pearson Correlation Coefficient: 0.2467

P-value: 0.08090





Average Poverty Rate for Biden States: 0.1313

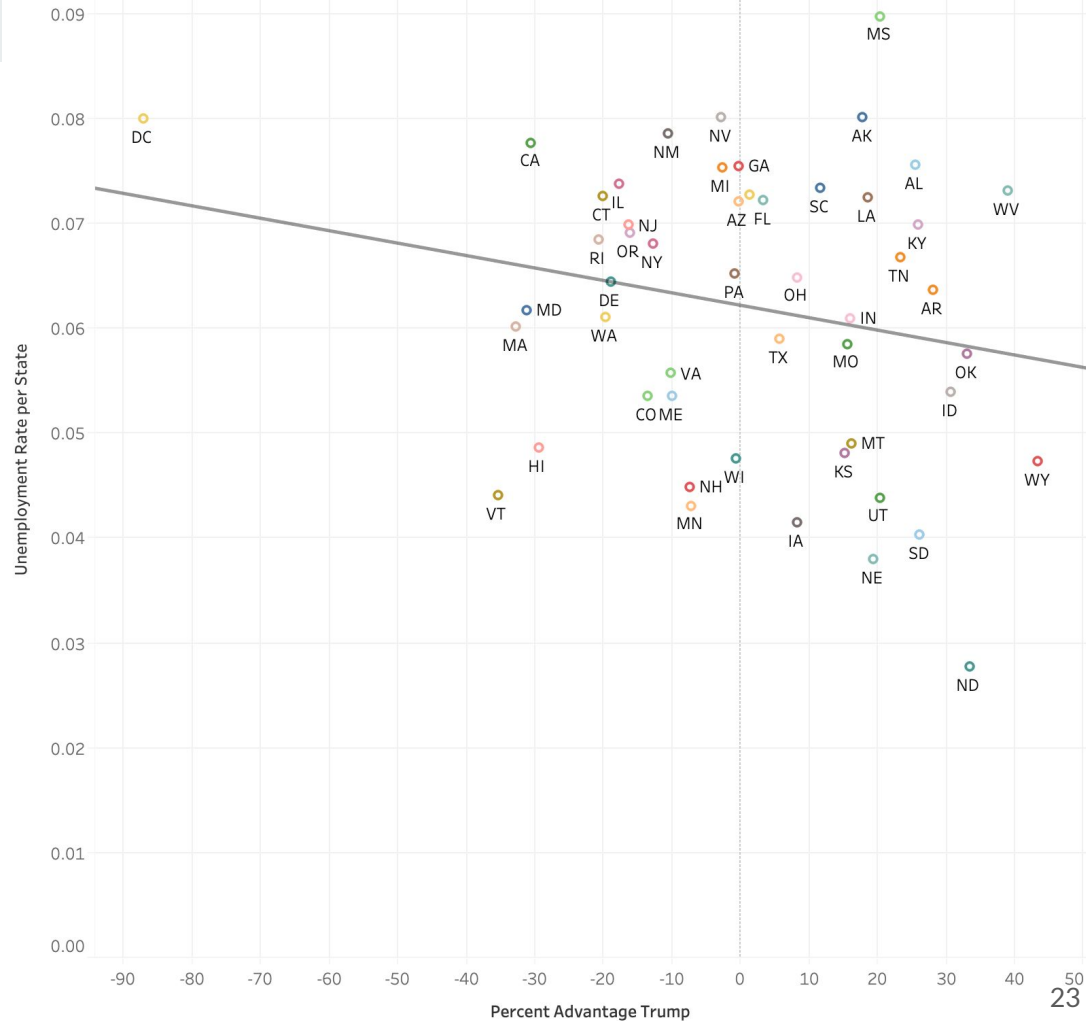
Average Poverty Rate for Trump States: 0.1512 22

# Unemployment Rate per State versus Advantage of Trump over Biden in Percentage

R-Squared Value: 0.043851

Pearson Correlation Coefficient: -0.2094

P-value: 0.140269

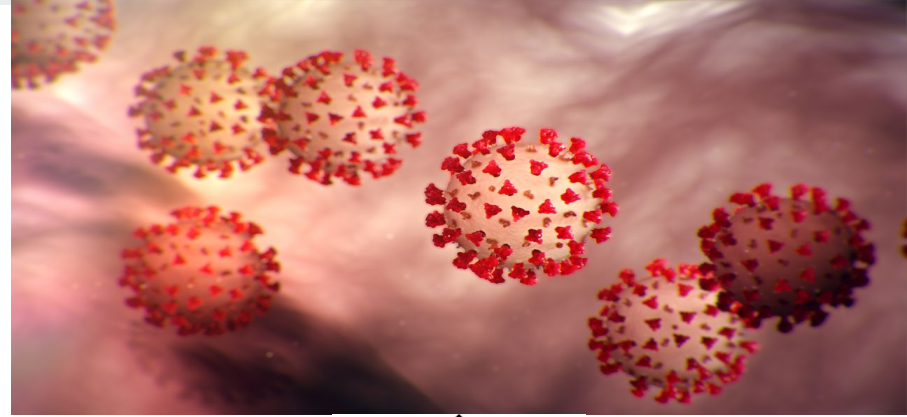


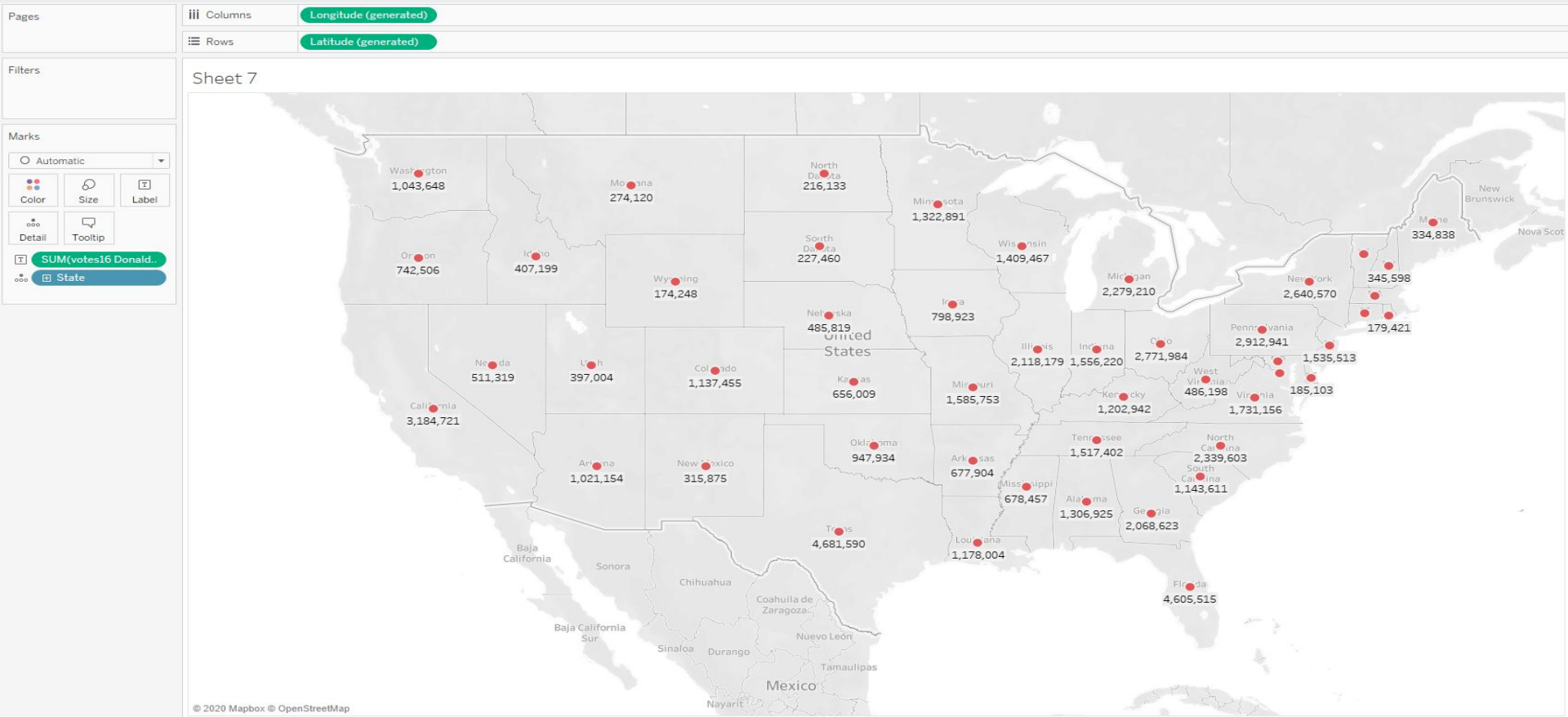




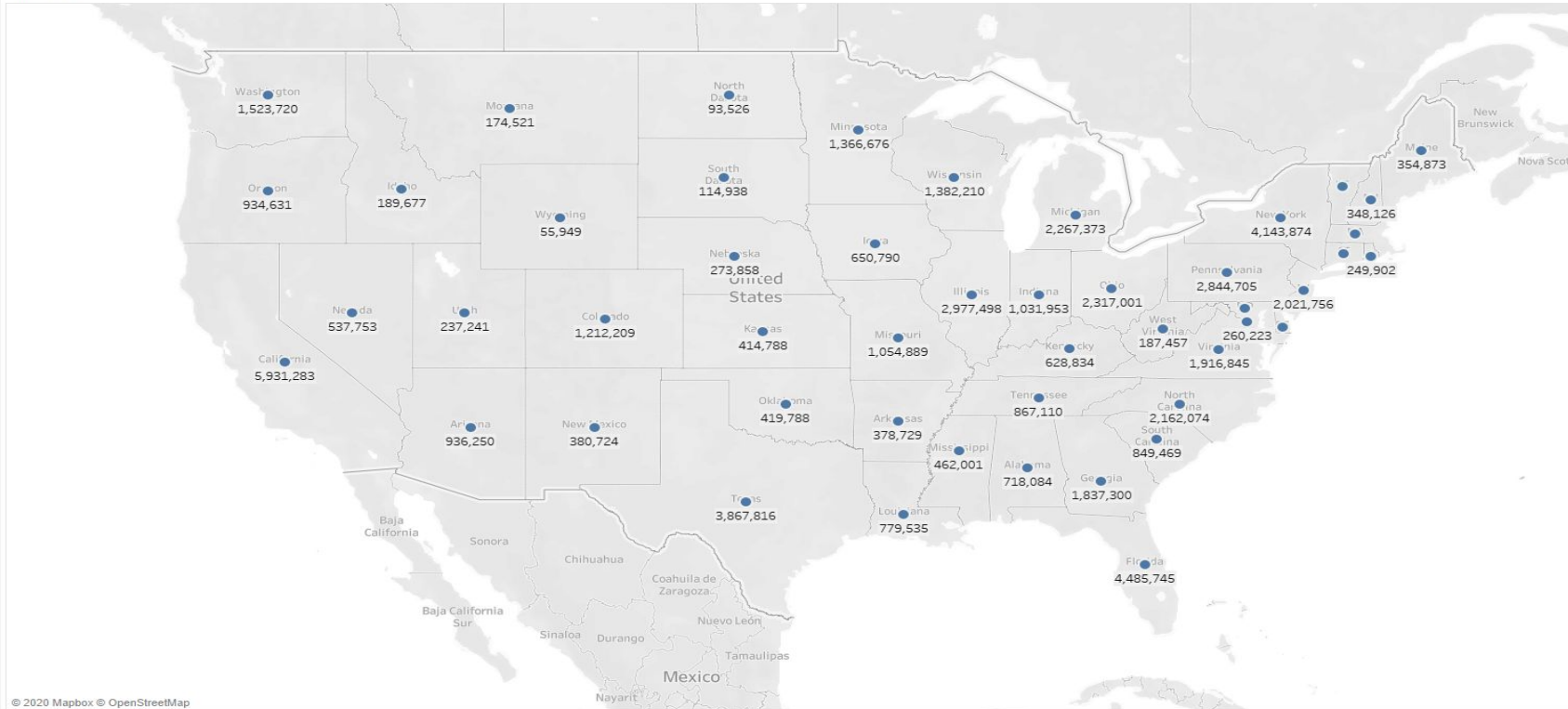
## Research Question 4

How many states switched political party they voted for from 2016 and 2020?





## Sheet 7



Trump 16 or Clinton 16



```
IF SUM([votes16 Donald Trump]) > SUM([votes16 Hillary Clinton])  
ELSE "CLINTON" END
```

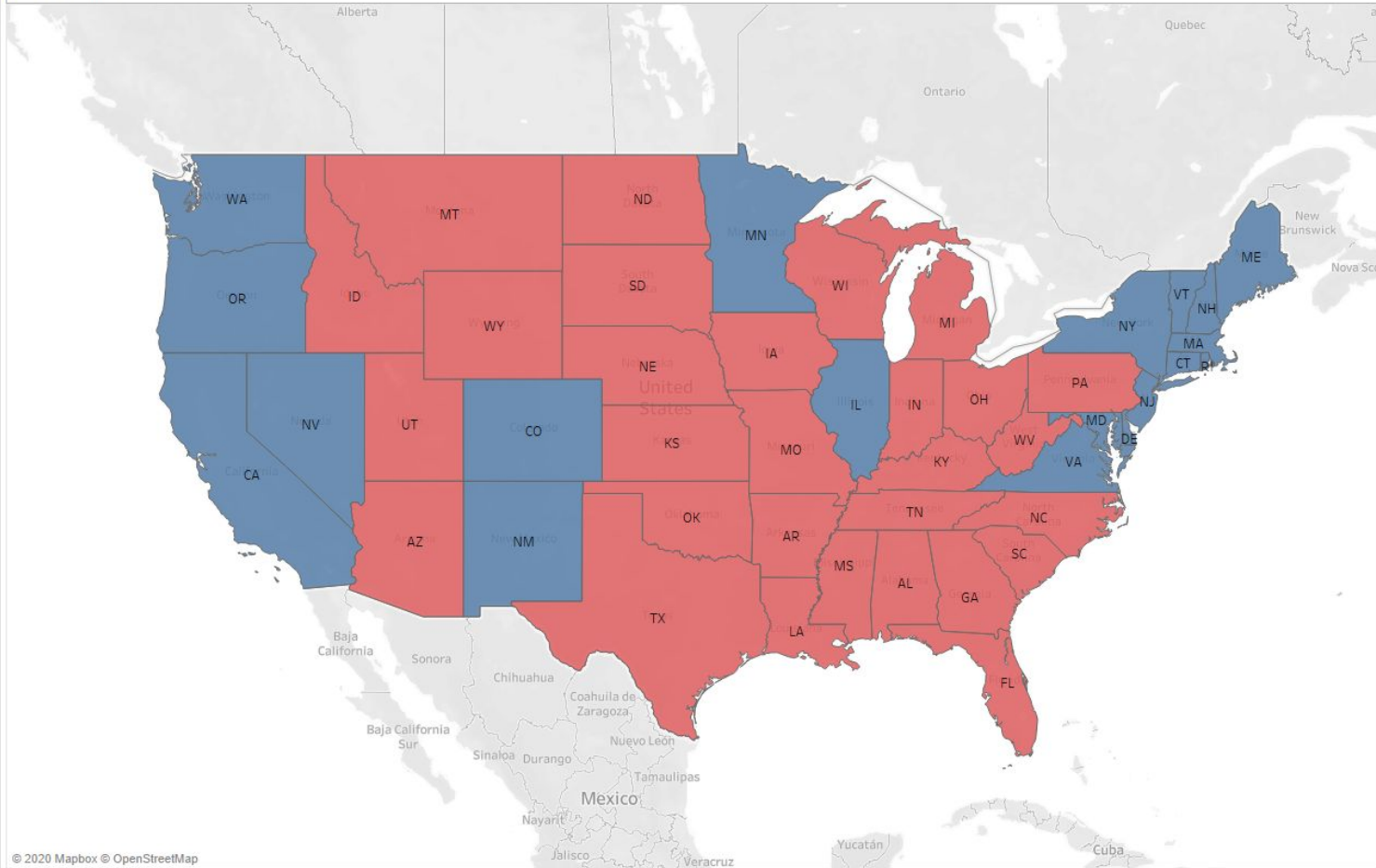
The calculation is valid.

1 Dependency ▼

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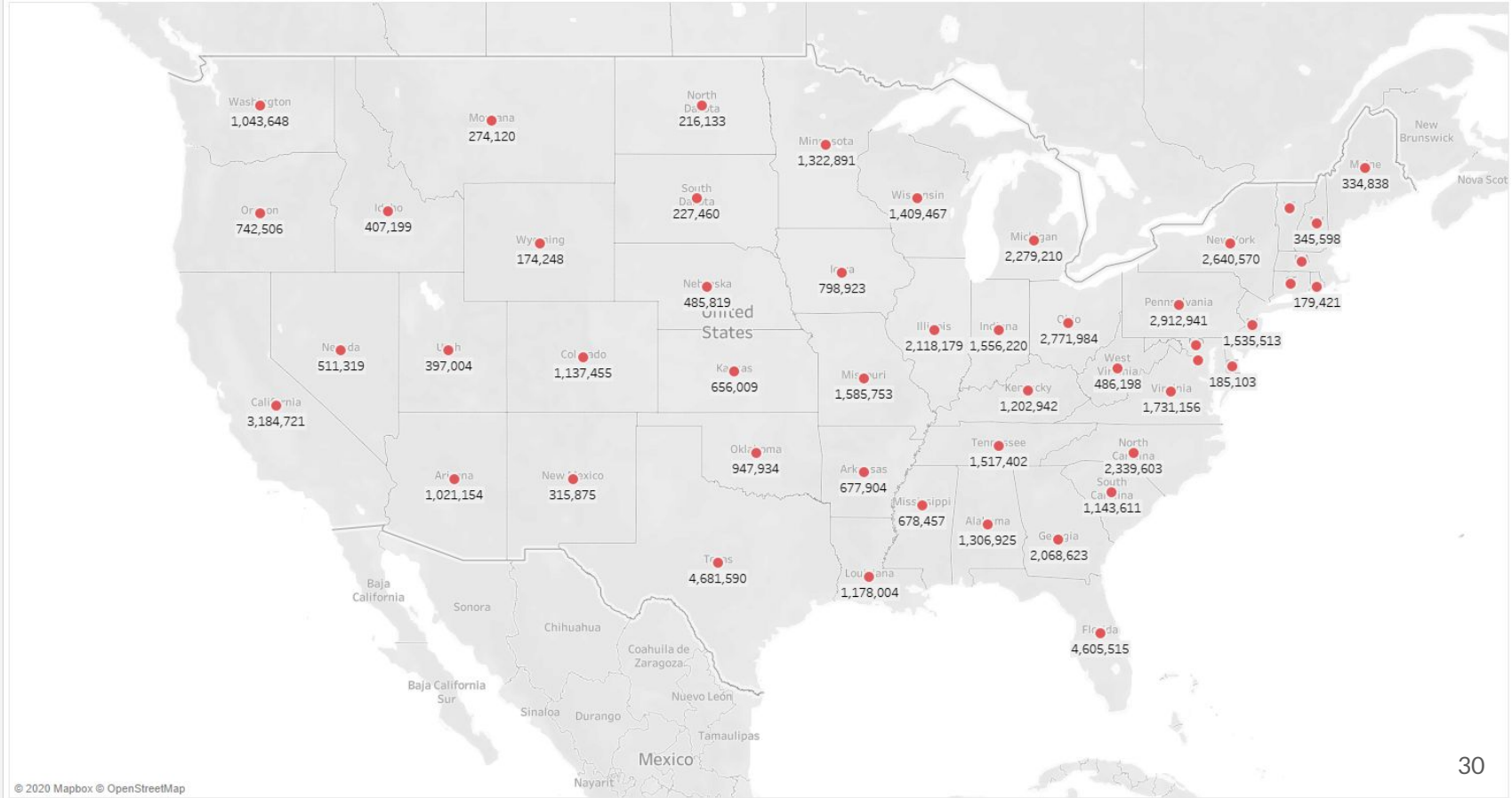
Label

Detail

Tooltip

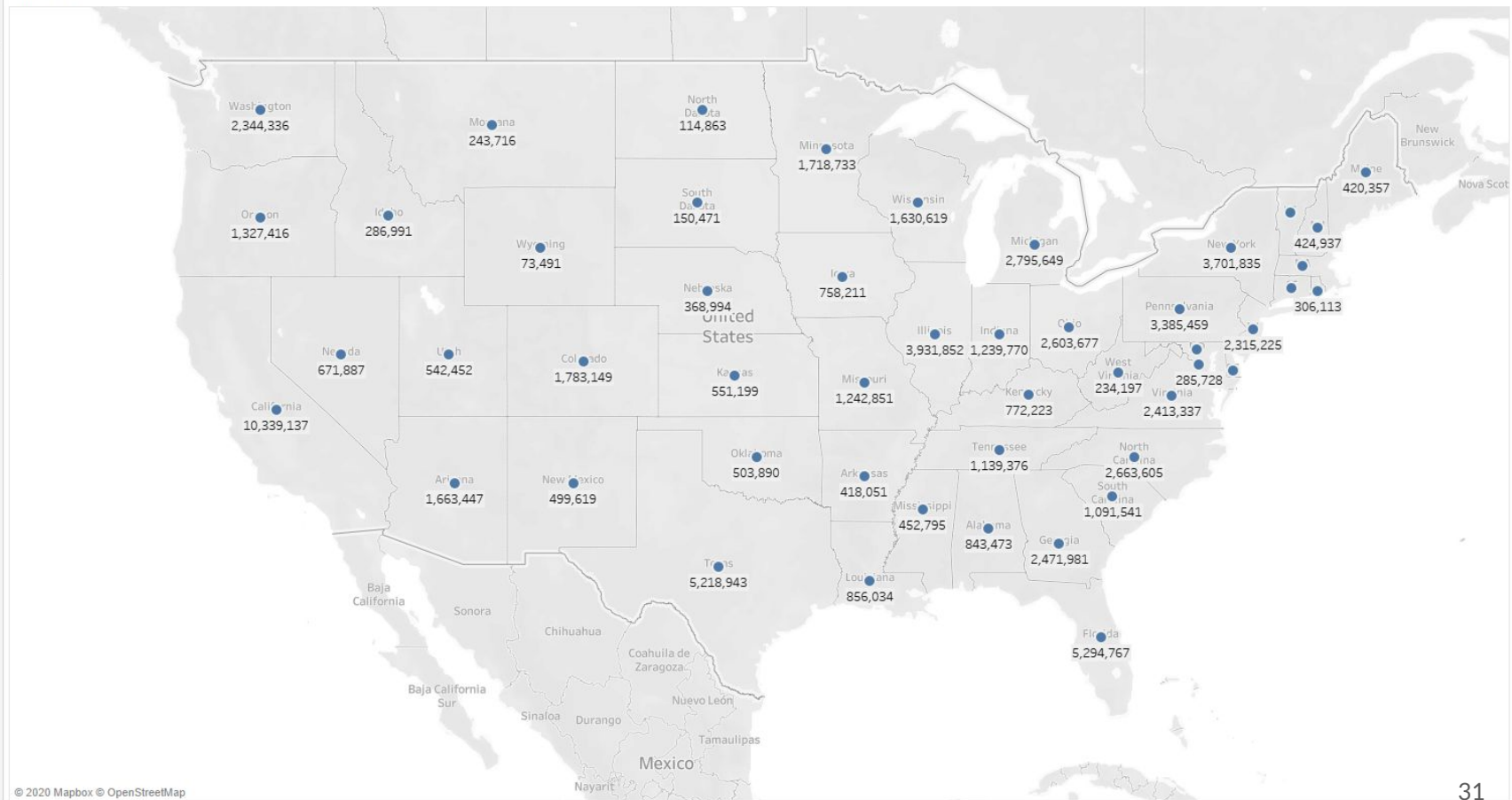
SUM(votes16 Donald...

State





## Sheet 7



Trump 20 or Biden 20



```
IF SUM([votes20 Donald Trump]) > SUM([votes20 Joe Biden]) TH  
ELSE "BIDEN" END
```

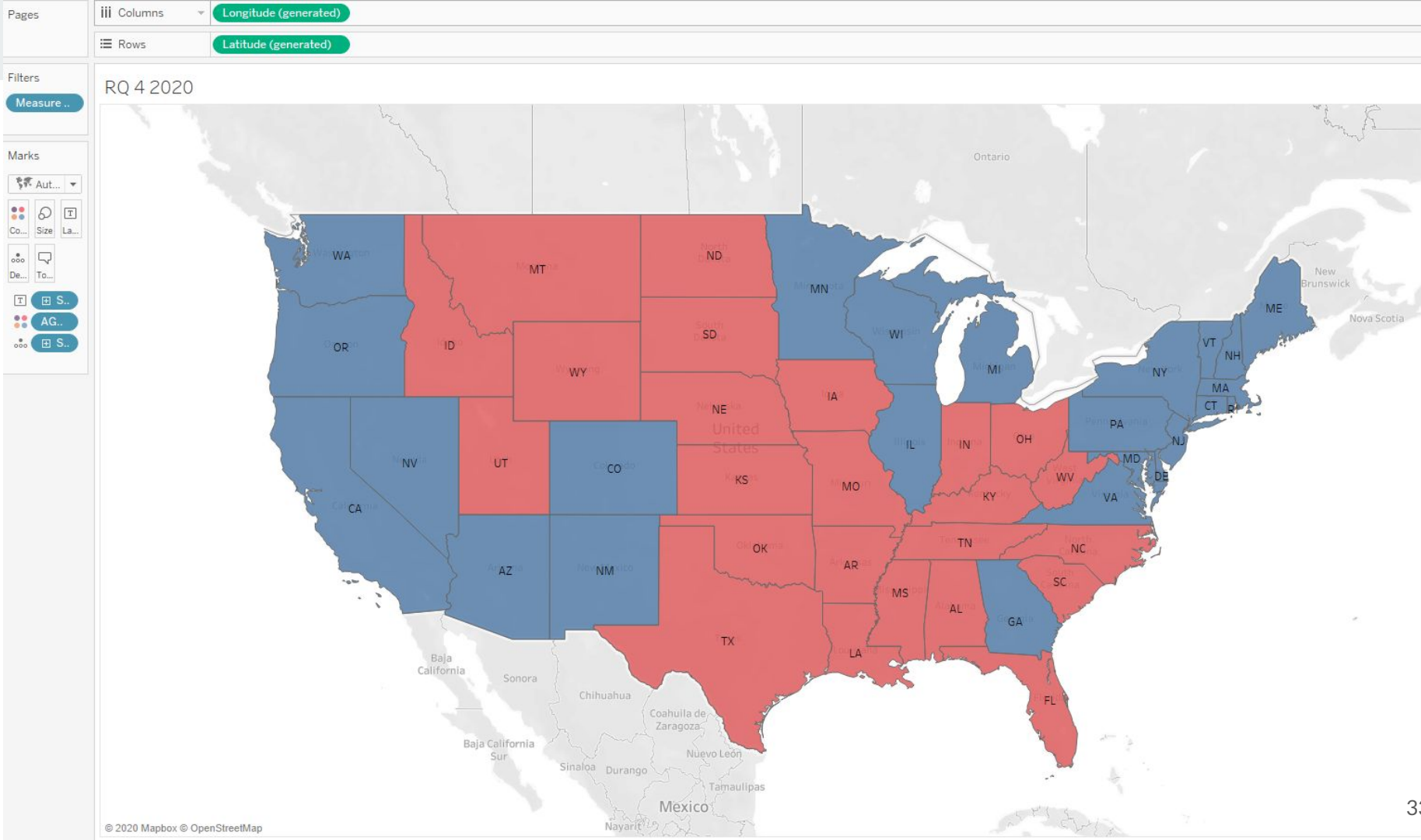
The calculation is valid.

1 Dependency ▼

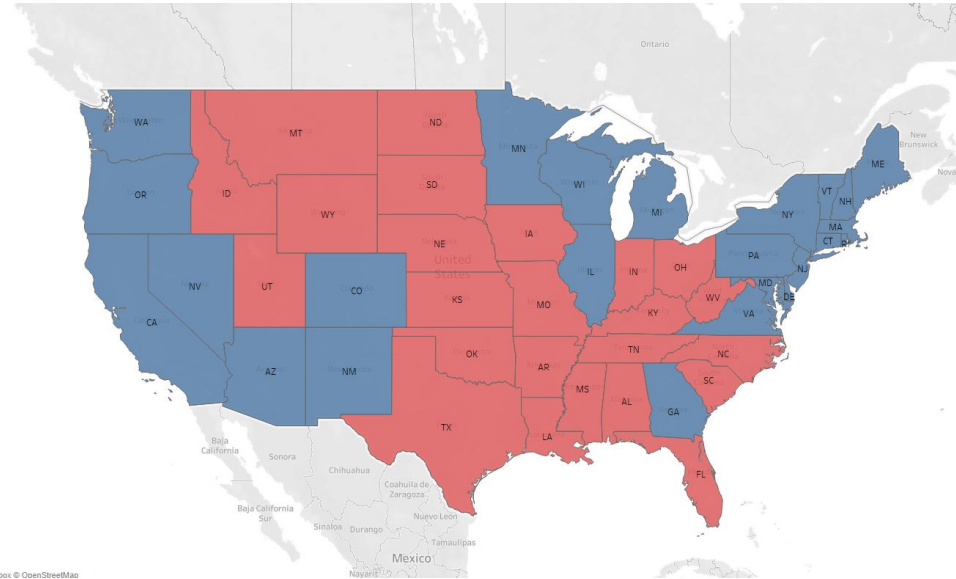
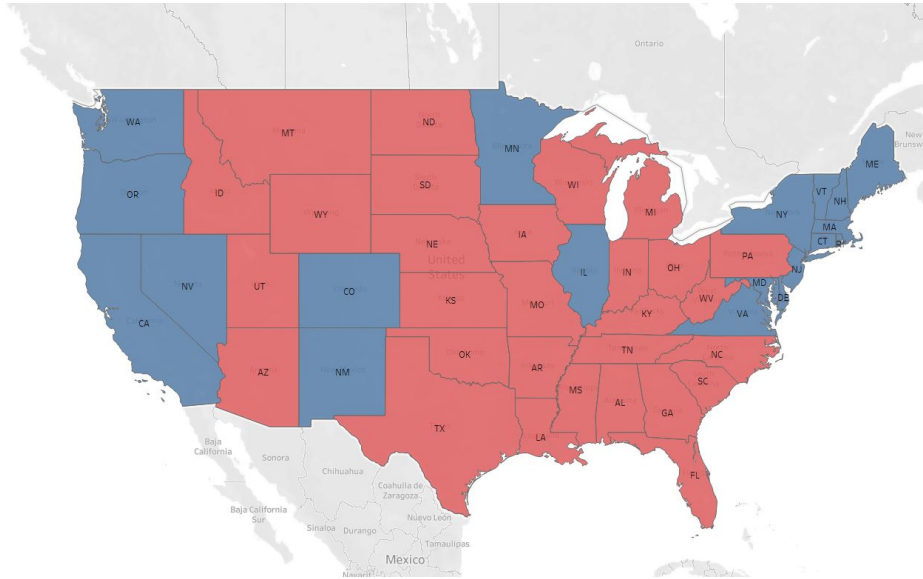
Apply

OK



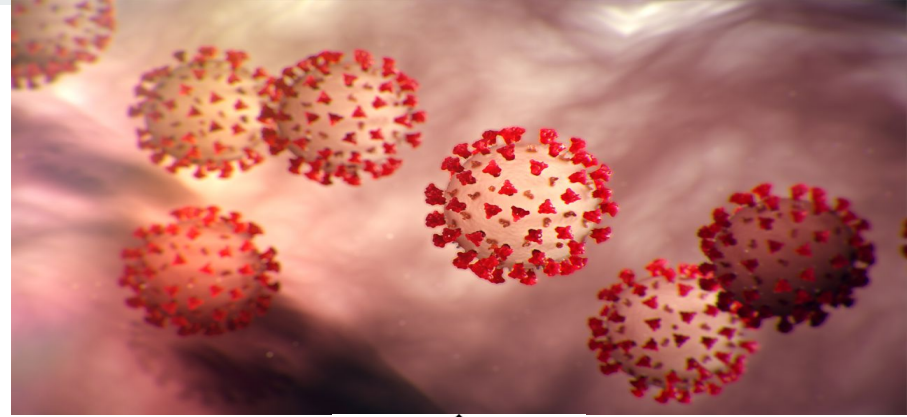


# Presidential Election Maps 2016 vs 2020



## Research Question 5

How does the rate of people who carpool correlate to the rate of COVID-19 cases per state?



# Carpool Rate per State versus COVID-19 Rate per State

R-Squared Value: 0.0021187

