

# COVID-19's Effect on Regions Related to their Political Partisanship

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## Abstract

Two prevention methods to help slow the spread of COVID-19 are wearing a mask and social distancing([Coronavirus Disease 2019 \(COVID-19\) – Prevention & Treatment, n.d.](#)). Within today's climate in the United States it's hard for opinions to remain independent of politics, and masking up and social distancing are no different. There are multiple studies and articles I've seen that produce evidence of republicans being less-likely to follow mask or social distancing recommendations. Perhaps political affiliation doesn't play as big of a role in COVID-19 cases as certain overly-general statements make seem. In my very small sample of republican and democrat counties from different regions of the country, I found that the republican counties did not have significantly more COVID-19 counties. In fact, in the counties I looked at the republican counties tended to have less cases than the democrat ones.

## Introduction

COVID-19 is a virus that doesn't take a person's political beliefs into account when deciding whether to infect them or not. But a person's political belief could influence how likely a person is to find themselves face to face with the highly-contagious virus. Led by republican president, Donald Trump, republicans tend to be less likely to wear masks or social distance. Trump has been very public about the virus will disappear "[like a miracle](#)". As a result, his republican followers are more likely to refuse to wear masks or social distance compared to democrats([Grossman et al., 2020](#)). Multiple articles including Guy Grossman's, which looked at geolocation tracking in democratic and republican counties after the first social distancing recommendations and stay-at-home orders came out in Spring, and Marcus Painter's, who found that compliance with social distancing orders were affected by political belief ([Painter & Qiu, 2020](#)).



Figure 1: Masks and social distancing have become a political discussion

Going in with the background information that democrats are more likely to observe COVID-19 prevention protocols than republicans, a fair assumption would be that democratic counties would tend to have less COVID-19 cases than republican counties. To see if this assumption holds some truth, I am going to compare the county-level data analysis provided to us with a county-level breakdown of political support in the recent presidential election.

To compare democratic to republican counties straight-up would not be the best method to go about this because of the general demographics of those areas. It is pretty widespread knowledge that major cities tend to lean democratic (*How Democrats Conquered the City*, n.d.) and it just makes sense that a contagious virus would spread easier in a more condensed area like a city (Coşkun et al., 2021). Those two facts would lead to democratic counties having more cases than republic counties when population and population density is ignored. My expectation is that when two cities of similar population and population density are compared: one where a majority voted for Trump and one where a majority voted for Joe Biden, the democratic-leaning county will have significantly less cases than the republican-leaning county.

## Data and Method

The data I used includes the COVID-19 dataset and R code provided to us along with USA.com's population density [rankings](#) to see population density across counties and ABCnews.com's 2020 interactive election [map](#) to see political partisanship across those same counties. COVID-19 is a very fluid and current situation today, but I will only be using case data up until October 21 for consistency throughout the data.

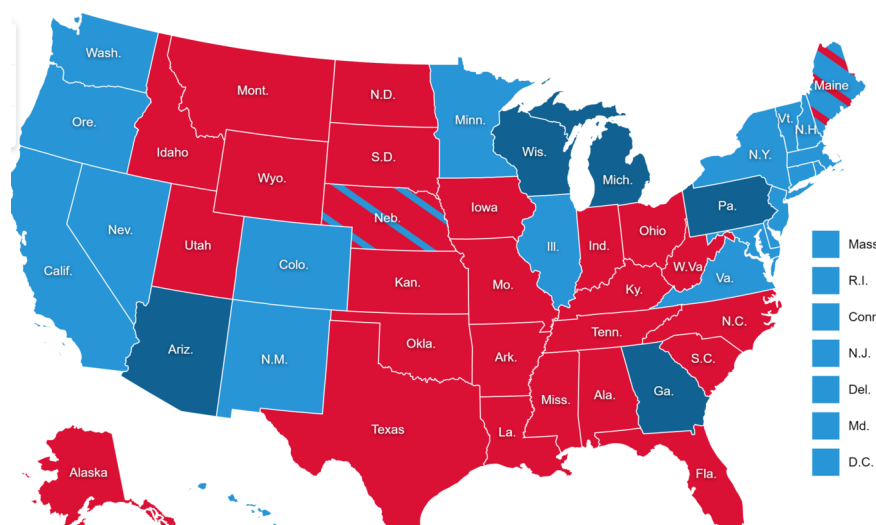


Figure 2: Image of ABC's interactive 2020 election map

To determine what counties to analyze I chose four states (with no knowledge of those counties COVID-19 numbers) to compare a democratic and republican county with similar population and population density. The states and counties I chose were California: Shasta and Imperial county, Wisconsin: Kenosha and Rock county, Texas: Denton and Fort Bend county, and Florida: Saint Lucie and Leon county.

State/County	Population Density (/sq mi)	Population	2020 Election Point Differential
California			
Shasta County	46.4	178520	Trump: +33
Imperial County	39.5	177026	Biden: +24
Wisconsin			
Kenosha County	221.8	167268	Trump: +3
Rock County	221	160465	Biden: +11
Texas			
Denton County	743.6	708627	Trump: +8
Fort Bend County	714.9	632946	Biden: +11
Florida			
Saint Lucie County	412.7	283988	Trump: +1
Leon County	400.2	280882	Biden: +29

Table 1: County statistics for the eight selected counties

These counties were chosen in an attempt to capture different geographical and political regions within the United States. To state once again, I had no prior knowledge of COVID-19 cases within these counties so I was not picking and choosing counties that would match my hypothesis. Even though I tried to spread out my counties across multiple regions, a sample of eight different counties in a country of over 3,000 counties is obviously not enough for this to be considered a definitive experiment that will come out with concrete facts.

## Results

First let's compare Shasta County (republican) and Imperial County (democrat).

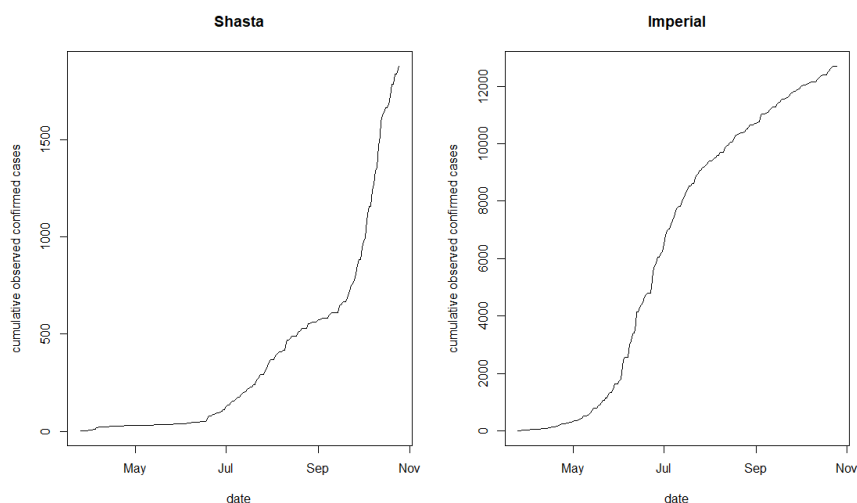


Figure 3: California counties: Shasta (republican) & Imperial (democrat)

In California, the democratic county has many more cases than the republican county. Imperial has over 10,000 confirmed cases while Shasta is barley breaking 1,500.

Next, let's compare Kenosha County (republican) and Rock County (democrat).

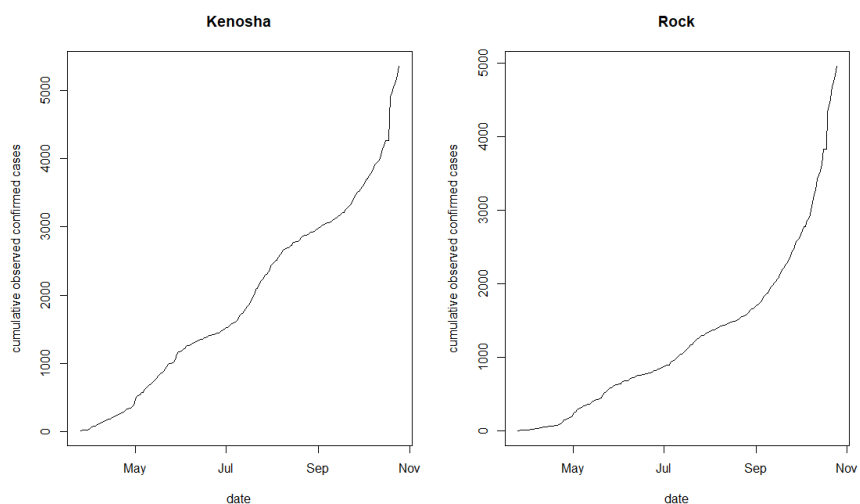


Figure 4: Wisconsin counties: Kenosha (republican) and Rock (democrat)

We see that the two are sitting pretty close to each other, around 5,000 confirmed cases. Kenosha has a little bit more than Rock, having led in cases throughout most of the year, but both counties seem to have an uptick in cases as the Fall weather comes around. This agrees with experts' who theorized the virus would worsen in Northern regions as the cold comes in.

Now let's head down South to Texas where the cold weather is not guaranteed in November.

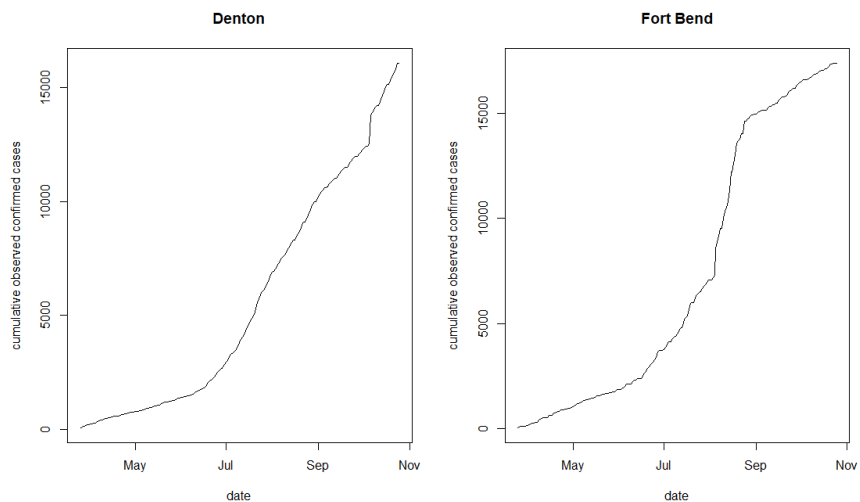


Figure 5: Texas counties: Denton (republican) and Fort Bend (democrat)

Once again, we see the two counties pretty similar in cases with Fort Bend having a little bit more but Denton seeming to have an uptick recently.

Florida has been featured often in COVID-19 news because of its vocal and charismatic residents let's see how the cases are in the swamp.

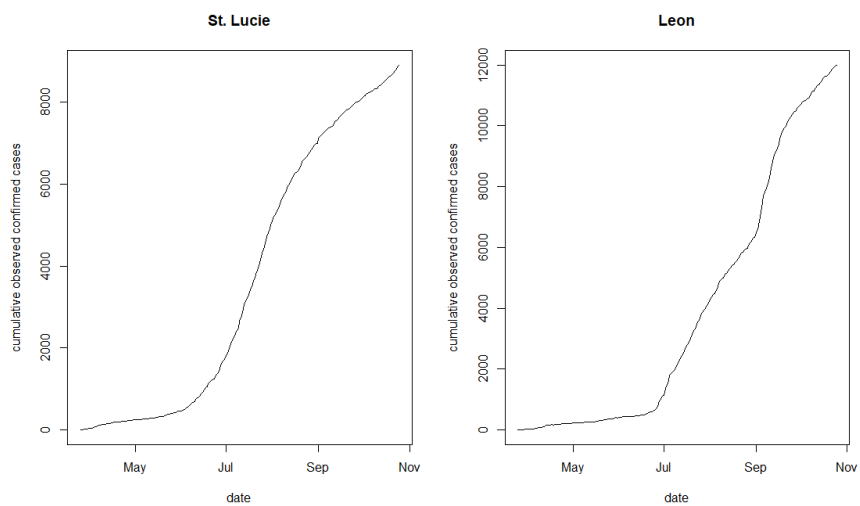


Figure 6: Florida counties: St. Lucie (republican) and leon (democrat)

Just like in our California counties, we see a pretty large difference in confirmed counties with the Biden-voting county with about two third's as many confirmed cases as the republican county. This result, along with the California result, both go against my intuition of republican counties having more cases. Are people wrong about the behaviors of the two parties surrounding COVID-19 prevention? Maybe, but maybe not; let's talk about some of the other variables that come up in an experiment like this.

## Analysis

The results I found have not agreed with my initial hypothesis going into the experiment. Two of the states had very similar case numbers between each county, and the other two states produced results opposite than what I predicted. Granted, the sample size was very tiny and my county choices didn't have the most solid system behind them. I tried to select counties that have the same population makeup and are regionally close to each other, but states like California and Texas are big and diverse so the selections may not be perfect.

Let's take a closer look at the two states that produced a significant difference in COVID-19 cases between their two counties. In California there could be a few potential explanations. Shasta county and Imperial county are on complete opposite sides of the state and Imperial county is located right outside of San Diego county, while Shasta is surrounded by other rural counties. In Florida there is a similar situation of location within the state. Saint Lucie was a Trump-supporting county by a slight margin, also, only edging out Biden by just over 2,000 votes.

## Conclusion

Whatever the explanations and validity of those explanations of my results may be, I feel it's safe to conclude that you cannot always accurately predict a county's COVID-19 situation strictly based on their residents political ties. Even though other studies have found evidence that the members of the republican were less likely to follow social distancing protocols at the beginning of the pandemic, that does not necessarily mean that every republican county will be overload with COVID-19 cases compared the their democrat counterparts.

Ultimately, the final note I realized over and over as I worked through all of this COVID-19 data is no matter what our political affiliation or geographical location is, we are all in this situation together. The actual virus itself won't necessarily infect every single American, but if it hasn't already, it will certainly affect every single American in one way or another. So, no matter what political candidate your support or where you call home mask up, social distance, and keep your and your loved ones as safe as you can out there.

## References

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