COVID-19 Pandemic Politics, Economics, & Policies on Death Rates in 2020

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Abstract

As COVID-19 swept through the United States, the pandemic affected some states more harshly than others. We seek to understand why, looking at a series of policies undertaken, economic factors, and political elements to see these account for differences in death rates among the states and D.C., using both bivariate and multivariate tests.

Theory and Hypothesis

In our research, we are analyzing the impact of the first independent variable (politics), which includes 1) state support for President Donald J. Trump in the 2016 election, and 2) the governor of the State: Republican or Democratic Party. The second independent variable (economics) includes (1) economic freedom: state taxes, spending and labor regulations. The third independent variable includes the policies designed to stop the spread of COVID-19. These involve travel restrictions, economic restrictions, and personal restrictions. Our dependent variables are the COVID-19 spread and the positivity rate (for October 2020), as well as the coronavirus death rate (November 2020).

Univariate Statistics for Death Rates

The mean is 3.73 deaths per 100,000 people. The median category (50th percentile) is 2.81 deaths per 100,000 people. The standard deviation is 2.93 per 100,000 people. The upper limit is 6.66 per 100k people. The lower limit is 0.8 per 100k people. States with an above-average death rate were Illinois, Iowa, Montana, North Dakota (14.76), South Carolina (12.3), Wisconsin, and Wyoming. Alaska, Hawaii, New Hampshire, Vermont, and Maine (0.83) are all close to a below-average death rate.

Bivariate Statistics

Our evidence shows that states with tougher travel restrictions are more likely to have lower COVID-19 death rates (11 states with strong restrictions were below the median death rate) than expected (7.84). At the same time, states that have looser travel restrictions are also more likely to have higher death rates (21 states were higher than the media death rate) than expected (17.84). The Pearson Chi-Square Statistic is 3.63. This is just barely statistically significant at the 0.10 level.

Our evidence shows that states that reversed or paused their reopening are more likely to have lower COVID-19 death rates (6 states) than expected (4.41). At the same time, states that reopened or were reopening are also more likely to have higher death rates (23 states) than expected (21.41). The Pearson Chi-Square Statistic is 1.36. It is not statistically significant at the 0.10 level

Multivariate Statistics

Our binary logistic regression equation shows that Trump's share of the vote is positively related to a state's COVID-19 death rate (whether it is above-average in death rates or not). That means that the more Trump voters a state has, the more likely a state is to have a higher death rate. The relationship is only moderately statistically significant at the .10 level. COVID-19 positivity rates are also positively associated with a state's death rate. These are statistically significant at the .05 level.

The other independent variables— travel restrictions, openness, economic freedom and which party controls the state governor's office— are not statistically significant at the 0.10 level. Our theoretical model can predict more than 80% of all cases. The Cox & Snell R-Square is 0.41, meaning that our model can explain 40%+ of the variance in our cases, and the model predicts 80 percent of the cases.

Key Findings

We found that states that voted for Trump have the strongest relationship with a state's death rate from COVID-19. The results are significant in a variety of models. Also, a state's economic restrictions and travel restrictions are more likely to be linked to lower death rates, though not in multivariate models. A state's openness does not always consistently lead to higher death rates.

Additionally, states with Republican governors are generally likely to have higher death rates, though this is not consistently so. A state's COVID-19 positivity rate is linked to a state's COVID-19 death rates. A state's economic freedom is not associated with a state's COVID-19 death rate.

This research should not be taken to be anti-GOP. We did find that a state's governor (Democratic or GOP) did not lead to higher death rates, nor did a state's prior pro-business climate (economic freedom) affect the death rate. But states with higher numbers of Trump supporters were linked to higher death rates. Our research shows that it may be more about people's attitudes than party or policy. We need more information on mask mandates and more recent economic restrictions to test whether these protections work better than earlier restrictions.

References

Elflein, John. 2020. "Death Rates from Coronavirus (COVID-19) in the United States as of November 20, 2020, by State." Statista, https://www.statista.com/statistics/1109011/Coronavirus-covid19-death-rates-us-by-state/

Johns Hopkins University Coronavirus Resource Center. 2020. "Positivity Rate by State (7-Day Average)." October 19, 2020, Johns Hopkins University & Medicine, https://coronavirus.jhu.edu/

Marshall, Matt, and Kanwal Syed. 2020 "Coronavirus Travel Restrictions by State, Map." *NBC News*. https://www.nbcnews.com/news/us-news/map-cEoronavirus-travel-restrictions-inside-United-states-n1236157

National Governors Association. 2020. "National Governors Roster." https://www.nga.org/wp-content/uploads/2019/07/Governors-Roster.pdf

The New York Times. 2020. "Coronavirus Restrictions and Mask Mandates for All 50 States." https://www.nytimes.com/interactive/2020/us/states-reopen-mapcoronavirus.Html

Stansel, Dean, Jose Torr, and Fred McMahon. 2019. "Economic Freedom of North America 2019." Fraser Institute. https://www.fraserinstitute.org/studies/economicfreedomof-north-america-2019

270towin. 2016. "2016 Presidential Election." https://www.270towin.com/2016_Election/

[i] This project was accepted and presented at the Council for Undergraduate Research 2021 "Posters on the Hill". The original project was in poster form and presented here in abbreviated form. If you would like to view the original poster with figures and data, please contact the Faculty Mentor, Dr. John Tures.