Disease, Data, and Dashboards: Explaining variation in COVID-19 Data Collection and Analysis[1,2]

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ABSTRACT
In the wake of federal inaction, state governments took on the bulk of data gathering and decision making about the COVID-19 pandemic. As the pandemic continued, responses grounded in scientific evidence faced rising opposition in our highly polarized political climate. Even state health agencies, normally more insulated from the vitriol of partisan politics, became targets. States also developed their own resources for gathering, advertising, and responding to data about the local conditions of the virus. However, the sophistication of these strategies and the degree to which data has been made public varies. *What explains this variation in the collection and analysis of COVID-19 data?* This paper introduces a novel index measuring the sophistication of state-level COVID-19 data collection and analysis and tests relevant theories for why some states developed more robust dashboards than others, including partisanship, pre-existing public health capacity, and pandemic severity. I connect my findings to literatures on federalism, policy feedback, and data-driven policymaking. My findings also speak to the role of experts, expert knowledge, and bureaucracies in crises and their functioning in highly polarized political environments.

[1] I would like to thank my undergraduate research assistant Sydney Sorkin for her insight, attention to detail, and partnership in collecting and coding the data on state dashboards. Her questions and curiosity were the inspiration for this paper. Ethan McFarlin designed all of the maps in the paper, and his creativity with visualization made the project better.
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The relative absence of federal coordinating of a national response to the COVID-19 crisis left much of the pandemic response to state governments. Scientists' initially limited understanding of the features of the COVID-19 virus further complicated this federalized response. The Trump administration's insistence that the virus was no more concerning than the flu or common cold (Chiu 2020) further obfuscated any coherent federal efforts to gather and disseminate data about COVID-19 (Stolberg 2020). Thus, state governments faced a dearth of reliable information about the virality and transmission dynamics of COVID-19, just as they faced an urgent need for precise and effective public health guidance for their residents.

In the ideal embodiment of a federal government, state ownership over various government responsibilities facilitates localized and targeted action relevant to the state's specific culture, politics, and conditions. Given the unprecedented nature of the COVID-19, first learning about the virus was critical to crafting reasonable policy. And because federal data dissemination and policy recommendations were inconsistent and contradictory, at best, or downright farcical, at worst, states were also left to coordinate this essential information gathering and, in turn, developing policy aligned to their findings. Understanding how states collected, analyzed, and published COVID-19 data is the subject of this study. Specifically, I ask: *To what extent did states vary in the data and data analysis made publicly available during the COVID-19 pandemic? What explains any variation that we observe?*

To assess data collection and analysis, I systematically evaluate the public COVID-19 data dashboards that each state developed. Though states varied in the timing of the initial dashboard publication (see appendix for the list of start dates for each state's dashboard), by June 2020, all 50 states had some publicly available, regularly updating dashboard that communicated information about pandemic conditions in the state. Building on prior findings (James 2022), I treat data collection as a distinct from the analysis of the data and craft indices for the sophistication of data collection and analysis. Given the disparate impact of COVID-19 on communities of color, I also

develop an index to specifically assess the collection of racial data in each state as a second measure of the sophistication of states' data collection efforts.

I find that states are broadly comparable in the extent of basic data they collect and publish about the impact of COVID-19 within their borders. What variation does exist is explained by pre-existing public health capacity. The collection of racial data varies more widely and is unrelated to public health capacity. Instead, the party of the governor is more indicative of the extent of state's efforts to document the demographic patterns in COVID-19. States also vary more substantially in the degree to which they make analyses of COVID-19 data available. This variation is explained by the political alignment of the governor with former President Trump.

This article proceeds as follows. First, I outline what existing scholarship suggests we should see with variation in data collection and analysis across the states. Given the unprecedented nature of the COVID-19 pandemic, I did not have clear priors on how states would respond, thus I outline a set of reasonable explanations grounded in existing literature on state politics, federalism, and the politics of data. Then I explain how I operationalize data collection and analysis using state dashboards and indices. Next, I describe the variation in each of my indices. I then turn to testing the existing explanations for the variation that I observe. I conclude with an overview of the implications of my findings and next steps for understanding how and when states conduct their own public health research.

EXPLAINING COVID-19 DATA COLLECTION & ANALYSIS

Given the variation in state policy response to the COVID-19 pandemic and the rapid politicization of public health science, I expected to see some variation in the amount and quality of data that states made publicly available. Beyond expecting some variation, however, I did not have any clear priors on how or when this might occur or what features of a state's political or institutional landscape might explain the variation.

While the public health advice and findings did vacillate in the early days of the pandemic, there was consensus among experts that COVID-19 was extremely virulent and that it posed a substantial risk to the public. One naïve, but theoretically possible, explanation for the extent of information available about the impact of COVID-19 is states were relatively uniform in their desire to document and communicate information about the pandemic's effects. Given the rapid onset of the pandemic and the virus' contagiousness, roughly uniform curiosity and urgency across the states is plausible.

A slightly less naïve expectation is that states responded to the severity of the crisis within their state. Scholars have shown that, at least initially, people were more willing to adapt their daily behaviors in response to severe community levels of COVID-19 (Elcheroth and Drury 2020). States with more COVID-19 cases could have been more motivated to collect and analyze information about the virus to prevent an escalation of the crisis they were already facing.

However, states' capacity to collect and analyze data is affected by the human capital, processes, and financial resources they have dedicated to such research efforts in the past (Capano et al. 2020; James 2022). States that have engaged in more data-intensive research on their residents and policies should be better prepared to mobilize these resources on behalf of studying COVID-19. States with less experience with state-wide research efforts, on the other hand, may have to build up their capacity before they could generate meaningful information about their state's experience in the pandemic. In this case, I would expect to see some slight variation based on states' pre-existing capacity for data collection and analysis.

Anyone familiar with American politics during and since 2020, however, experienced the partisan vitriol and polarization that ran rampant in both public and elite discussions about the pandemic. Scholars have shown that partisanship has influenced a range of policy responses to the

pandemic (Adolph et al. 2022; Patterson 2020). Thus, it would also be reasonable to expect that the partisanship of state leadership, particularly the governor given their role in overseeing state agencies, explains the extent to which state researchers and public health officials were encouraged to document and disseminate information about the impact of COVID-19. With Trump-aligned Republicans falling in line with the former President's conspiratorial rhetoric about the virus, it is possible that Republican-led states collected less detailed information about the pandemic and invested in less sophisticated analysis of any information that they did collect.

Thus far, these expectations assume that the quality of data collection and analysis will vary in tandem. I have shown that data collection and analysis are distinct state activities that require different resources and that the capacity for data collection and analysis vary independently of one another (James 2022). Therefore, another possibility is that states were more uniform in their collection of basic information about the presence of COVID-19, but they varied more substantially in the extent to which they invested in meaningful and informative analysis of this data. Thus, despite consistent data collection patterns, Republicans' dismissiveness about the severity of the pandemic could have plausible subdued Republican led states' incentives to conduct detailed analysis that would show the effectiveness of vaccines or the rates of transmission in public settings. Indeed, scholars of policy learning and diffusion have long known that ideology filters public officials' decisions to implement new policies and practices (Butler et al. 2017; Karch and Rose 2017), and it is reasonable to consider that this pattern could apply to the decision to rapidly mobilize resources on behalf of data collection and analysis.

MEASURING DATA COLLECTION & ANALYSIS

I build out three different indices—data collection, racial demographic data collection, and data analysis—to evaluate variation in state response to COVID-19. This approach builds on prior work that shows the capacity for collecting and analysis data are distinct activities that require

disparate resources, actors, and time horizons and that the quality of data collection and analysis have differential impacts policy feedback effects (James 2022). Below, I describe and justify the variables that inform each index.

First, I created a general data collection index, which reflects the extent to which the state collected and published basic counts of the impact of COVID-19 on their state dashboards. I use four variables to construct this index: the case count, death count, the number of vaccines administered and the hospitalization count. Each variable is a binary indicator for whether the state's dashboard displayed this information as of November of 2021, and I calculated the data collection index score by summing up the individual binary variables. This data collection index score can range from 0 to 4.

In addition to variation in these broad data collection efforts, there was also significant variation in the extent to which states collected data to provide insight into the racial impacts of the pandemic. Scholars and advocates quickly noted that the pandemic exacerbating pre-existing racial disparities, and yet many states were not collecting data on the impact of COVID-19 for communities of color. (Kendi 2021; "About the Racial Data Tracker" n.d.).[3] As states built out their data collection processes, they did not all require demographic data on cases, deaths, and vaccinations; thus, one additional measure of sophistication of a state's data collection is whether it reflects COVID-19 related outcomes according to demographic groups. I use a dataset on demographic data availability across multiple racial and ethnic groups compiled in the COVID-19

[3] In fact, a volunteer organization—called the COVID Tracking Project—funded by *The Atlantic* and led by Professor Ibram X. Kendi, the director of Boston University's Center for Anti-Racist Research, sprung up in Spring 2020 to orchestrate volunteer scholars, medical professionals, and public health officials to centrally collect data on the racial impact of the pandemic to fill the informational void left by so many states. They called their racial tracking database the COVID Racial Tracking Project. As state and federal governments increased their attention to the racial data of the effect of the pandemic, the COVID-19 Tracking Project wound down their efforts, though they continue to provide guides and links to accessing and evaluating state and federal data on COVID-19. Boston University then turned to expanding their documentation of the response to the pandemic by creating the COVID-19 U.S. State Policies Database (also known as CUSP) ("Policy Data – CUSP" n.d.).

U.S. State Policies Database ("Policy Data – CUSP" n.d.). This includes 11 variables regarding the availability of data on the impact of COVID-19 on a range of racial and ethnic groups (see Appendix for the full list of variables). I create an index for the availability of racial data from this information by summary up the binary indicators from the CUSP data.

Basic counts of cases, deaths, vaccines, and hospitalizations is an important starting point for documenting and responding to COVID-19 within a state. However, raw counts may be deceiving, at worst, or not particularly useful, at best, for a member of the public or a policymaker (be it state or local) trying to evaluate the risks of engaging in or allowing different activities. For example, knowing the aggregate case rates across the state, or even a large county, does not provide particularly useful information for deciding if you feel safe going to work or the grocery store in person. It may be that certain settings—like restaurants or sports venues—may be riskier than others. Similarly, local school officials and parents are arguably much better prepared to evaluate the safety of re-opening schools if they have information specifically about case rates and transmission in school settings compared with overall state trends. Providing this information requires analytical dexterity on behalf of the state. At the same time, there may be political incentives for public officials to (not) provide this data, depending on their interest in how their constituents respond to COVID-19.

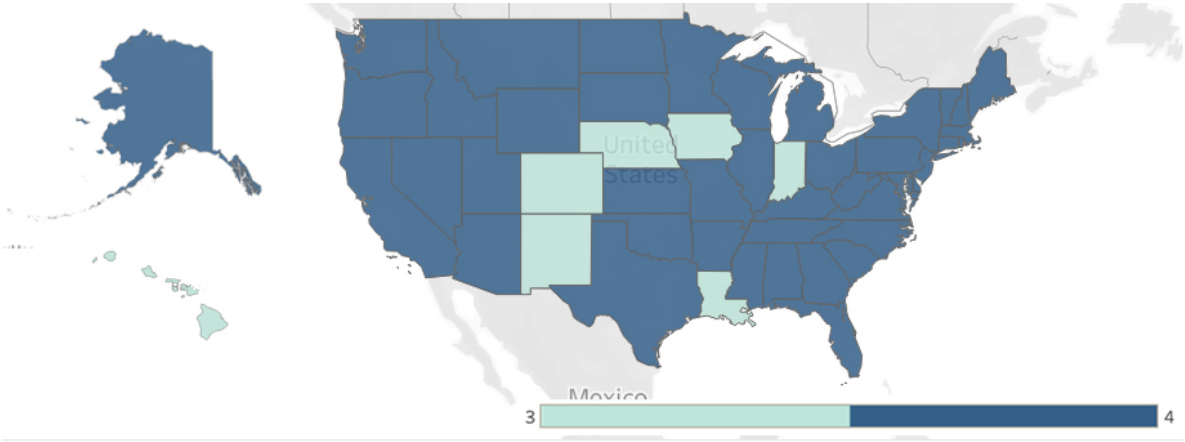
Indeed, some states also chose to include a range of analyses of COVID-19 data on their state dashboards. Broadly, I conceptualize "analysis" as any calculation or comparison using the basic counts of COVID-19 cases, deaths, or vaccinations. States took a variety of approaches to expanding on basic counts in their dashboards, but these efforts fall into four broad categories: identification of high transmission settings, reporting of information specifically on school districts, the number of cases by vaccine status, and the total number of hospital beds and PPE equipment available. Therefore, I coded each dashboard for each of these four analytical features. This type of

information is different from basic counts because it gives people usable information on when and where they may want to leave their home or venture into public or send their kids to school.

VARIATION IN DATA COLLECTION & ANALYSIS

Somewhat surprisingly given recent partisan attacks on science, facts, and data, states are relatively comparable in the amount of basic data they collect and publish about the impact of COVID-19 within their borders. Figure 1 shows the data collection index score for each state. All states scored at least a three on the index, and 86 percent scored the maximum of four. The average score is a 3.86 of four. As shown in Figure 1, there is some regional clustering for states that scored three—they are roughly in the Midwest, plus the addition of Louisiana in the south.

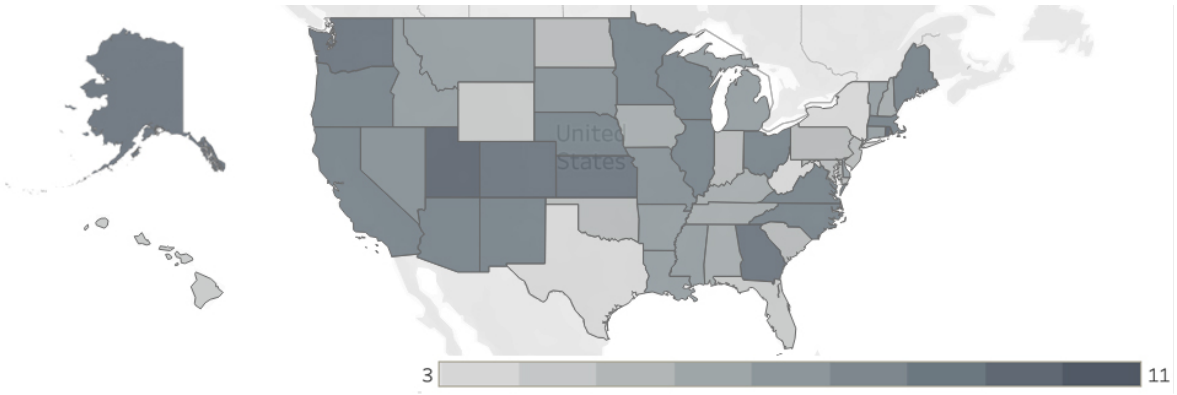
Figure 1: Data Collection Index Scores



Source: Author's calculations

The collection of demographic data within these basic counts varies more substantially. Aligning with the many condemnations of limited availability of racial data across the states, there is wide variation in the amount of racial data reflected in state dashboards. The racial data collection index ranged from 0 to 11, and the average score was a 7.24. New York, Texas, and Virginia—the lowest scoring states—all scored a three. The modal score was an eight, and two states—Rhode Island and Utah—scored the maximum of 11. Figure 2 shows the index's geographical variation.

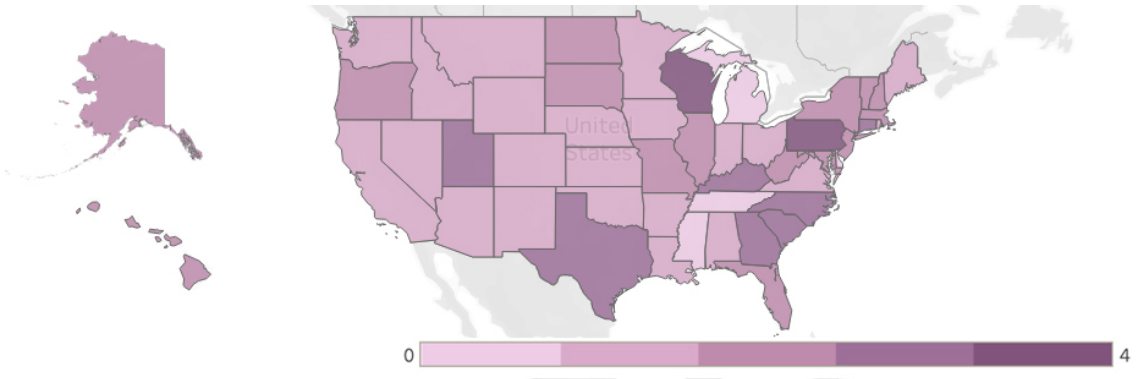
Figure 2: Racial Collection Index



Source: Author's calculation

The analytical index also reveals more variety across the 50 states, as shown in Figure 3. The analytical index also spans zero to four, however, unlike the collection index, states covered the full range of index values. Four states—Delaware, Michigan, Mississippi, and Tennessee—did not have any analytical features on their publicly available dashboard, while only two states—Pennsylvania and Wisconsin—had all four characteristics that I counted as analytical features. The average score on the analytical index is a 1.62, and the modal score is a one. Western states appear more likely to score low on the index than eastern states, but there is also substantial regional variation in the eastern half of the country.

Figure 3: Analytical Index Scores



Source: Author's calculations

EXPLAINING VARIATION

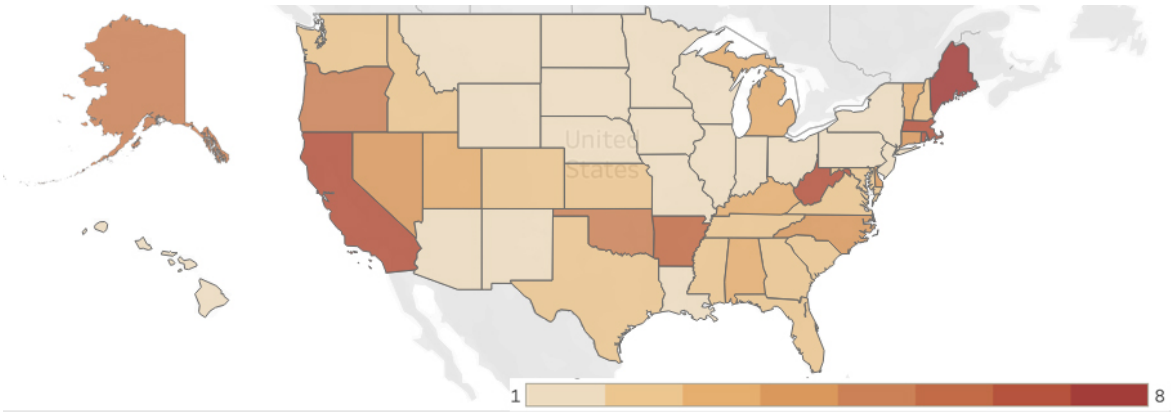
There are many reasons that states may vary in their data-driven response to a public health crisis. Perhaps most obviously, the severity of the crisis within a given state may affect to degree to which public officials feel it is worth investing time, money, and human capital in building out a robust dashboard. Therefore, I include the cumulative number of COVID-19 cases per ten thousand residents as of June 2021 a measure of the severity of the pandemic in each state. While the numbers certainly changed between June and November, when we viewed the dashboards, I would not expect changes in COVID numbers to immediately trigger a change in dashboard qualities. Thus, I argue that a cumulative case rate from June is a reasonable measure of the overall pattern of COVID's impact in each state.

I also include racial demographics in the models assessing the racial demographic index. States with a higher non-white population might reasonably be more likely to invest in collecting racial data of the impact of COVID-19. Thus, I include the percent of white, non-Latinx residents in a state. I calculate this using the ACS 5-year estimates from 2019.

Collecting and analyzing individual level health on the entirety of a state's population is no easy task, especially when there was a myriad of organizations that jumped in to assist with testing and treating COVID-19 cases. State governments need processes, technology, and trained experts, among other resources, to meaningfully tackle this data challenge. With the dearth of federally coordinated responses to COVID-19, state public health agencies were the front lines of determining the conditions within their own state and advising public officials on best steps for mitigating the impacts of the pandemic. And, given the rapid onset of the pandemic, it is possible that a state's pre-existing capacity for public health data collection would influence its ability to mobilize the resources to collect and analyze information about COVID-19.

Certainly, states vary in their capacity to collect and analyze data (Sanderson 2002; James 2022), and, given the rapid onset of the pandemic, it is possible that a state's pre-existing capacity for public health data collection would influence its ability to mobilize the resources to collect and analyze information about COVID-19. I test this hypothesis by including the number of health agencies in a state. I calculate the number of health agencies using keyword searches on state agency directories. I count a state agency as a health-related agency if it contained the terms "health" or "public health" in its title or description (see Figure 4 for geographical variation). All states have at least one public health agency, and nineteen states have *only* one. Maine has the most public health agencies, with a total of eight. The median number of health agencies is two, and the mean is 2.66.

Figure 4: Number of health agencies per state



Source: Author's calculations

Alternatively, elected public officials may have political reasons for wanting to control the availability and dissemination of information. As members of the executive branch, state-level public health officials serve at the pleasure of the governor. And, even though most public health officials are appointed, not elected, they faced increasingly political pressure from governors as the pandemic became increasingly politicized (Helm and Spicuzza 2020; Barry-Jester 2021; Patterson 2020). Therefore, it may be that partisanship of the governor—and therefore the policy preferences—have

some role in the amount of information made available. I control for the partisanship of the governor in 2021, accounting for the few changes[4] that occurred during the 2020 elections.

Even a casual observer of American politics has likely noticed that our traditional two-party labels for partisanship do not fully explain policy preferences in the wake of Donald Trump's successful bid for the Republican presidential nomination (and subsequent presidential term). In other words, Trump vastly complicated the association between ideology and partisanship and has introduced significant variation and complexity into the policy preferences and platforms among Republicans, and this was particularly true with partisan's response to the COVID-19 pandemic. Key Republican leaders were torn between increasingly clear scientific findings about the realities of the COVID-19 pandemic and the refusal of the party leader to acknowledge the seriousness of the public health threat.

To categorize governors based on their alignment with Trump's approach to the COVID pandemic, I use a systematic search of contemporary news articles. Specifically, I used Google News searches for each governor's name and the terms "Trump" and "COVID." Using the top 50 result, I evaluated any comments the governor made on Trump's handling of the pandemic, and break governors into three categories: those that lauded Trump's approach (like Doug Doucey of Arizona or Greg Abbott of Texas), those that remained silent, and those that openly questioned Trump's COVID-19 response (like Charlie Baker of Massachusetts or Mike DeWine of Ohio). I call these groups the pro-Trump Republicans (represented by R1 in my models), the ostrich Republicans (represented by R2 in my models), and the Trump skeptics (represented by R3 in my models), respectively. A full list of governors and their categorization appears in the Appendix. In models

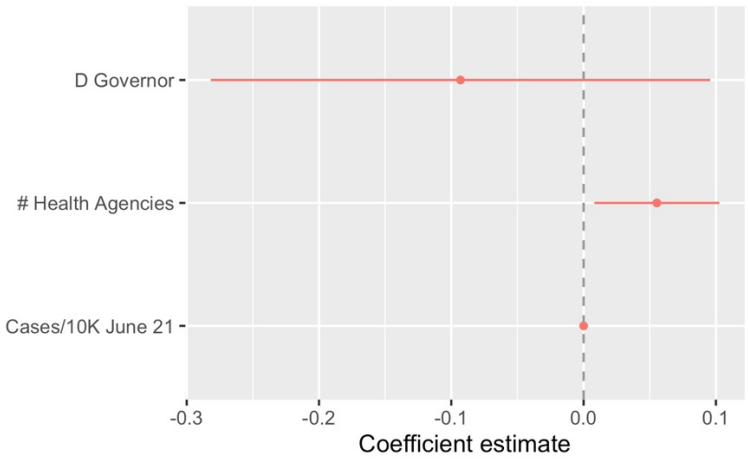
[4] Only Montana saw a change in the party of the governor when Republican Greg Gianforte won the election against Democrat Steve Bullock. There was also only one switch in partisan control of state legislatures in the 2020 election—Republicans took the majority in the New Hampshire.

with the detailed categorization of the Republican Party, the Democratic governor is the reference category.

Unless otherwise indicated, the models in this section are ordinary least squares regressions using the relevant index as the dependent variable. I present coefficient plots with 95% confidence intervals in the text of the paper and include the tables of results in the appendix. All models contain the previously described controls for COVID-19 severity, pre-existing public health capacity, and gubernatorial partisanship. The models evaluating the racial demographic index also includes the control for racial diversity.

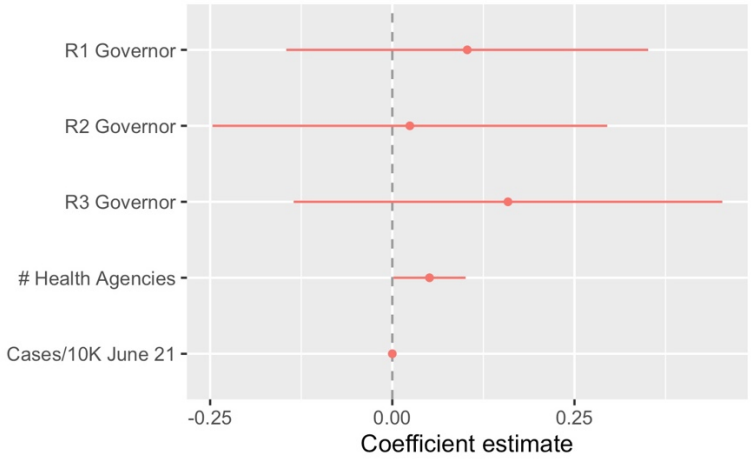
Pre-existing capacity, as measured by the number of public health agencies, is correlated with higher scores on the data collection index. As shown in Figure 5, controlling for cumulative case rates and the party of the governor, for each additional health agency, the collection index rises by 0.05. Notably, this pattern holds even when controlling for the variation within the Republican party (see Figure 6). While this is certainly a small effect, it is nonetheless notable that capacity is the only variable that is positively and statistically significantly correlated with data collection. This corroborates existing research that pre-established capacity for data collection is a pre-requisite for learning about conditions within a state.

Figure 5: Coefficient estimates for data collection index (OLS w/ 95% C.I.)



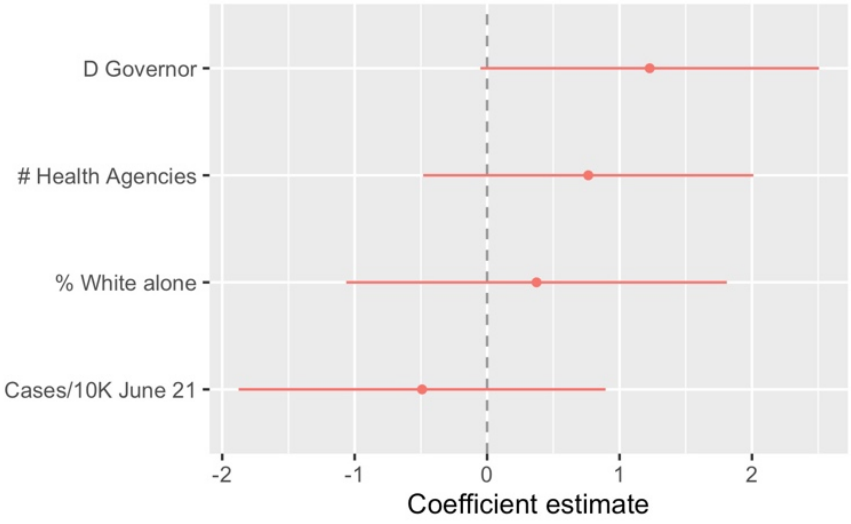
The importance of pre-existing public health capacity is remarkably stable in significance and size, even when controlling for the detailed categorization within the Republican party (see Figure 6). When breaking out Republican governors according to their alignment with Donald Trump, the increase of one public health agency in a state remains associated with a 0.05 increase in the data collection index.

Figure 6: Coefficient estimates for data collection index with detailed Republican party categories (OLS w/ 95% C.I.)



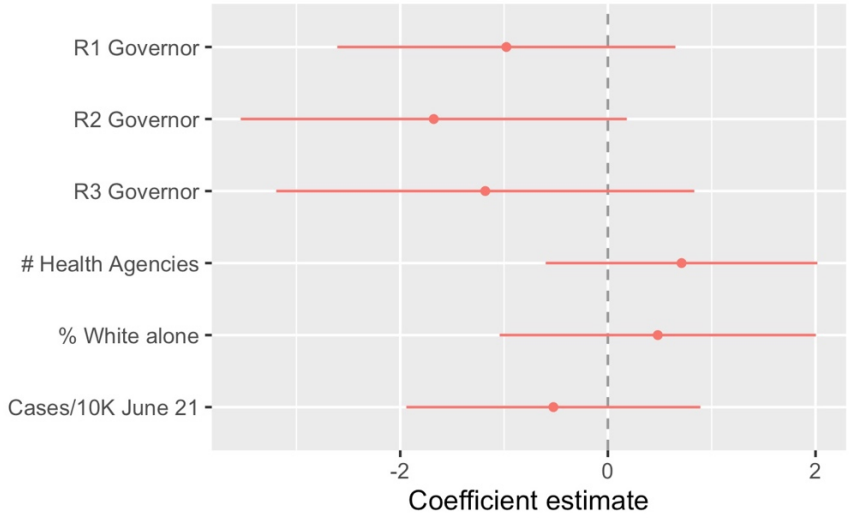
Next, I turn to explaining variation in the racial demographics. As mentioned previously, one might expect that states with bigger minority populations may have been more prepared or incentivized to college demographic data on the impact of COVID-19 from the outset. Racial demographics within a state, however, do not explain the availability of racial details on state dashboards. Pre-existing capacity and the severity of the COVID crisis also have no explanatory power. Instead, the partisanship of the governor is associated with the robustness of the racial data collection index. A shift from a Republican governor to a Democratic governor is associated with a 1.2-point increase in the racial demographic index (see Figure 7), though this result is only statistically significant at the 0.1 level.

Figure 7: Racial index score (OLS w/95% C.I.)



After significant losses in the 2012 election, the Republican National Committee commissioned an evaluation of why the G.O.P. was failing to connect with and build support among various minority groups in the U.S ("Growth and Opportunity Project" 2013). All too aware of declining population of white Americans, G.O.P leaders explicitly articulated the importance for party members to articulate the alignment of conservative ideals and the values of people of color to enhance the popularity of the party with new constituencies. Trump's candidacy flouted this suggestion and emboldened both the public and politicians to use more openly racist rhetoric. Thus, we might also expect that gubernatorial alignment with Trump might affect a state's attention to racial data during the pandemic. Breaking Republicans into detailed groups shows that R2 governors are associated with a 1.67 decrease in the racial demographic index, though this result is also only statistically significant at the 0.1 level.

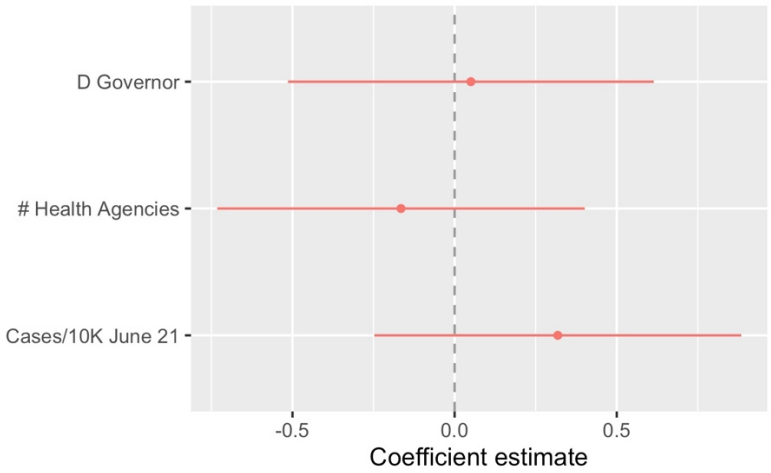
Figure 8: Racial data index score with detailed Republican categorization (OLS w/95% C.I.)



Raw data counts are certainly the building blocks of an informed and credible state-level COVID-19 policy response and public accountability. However, as I describe above, these broad data points are not particularly helpful in helping public officials and the public effectively and accurately evaluate the current risks to public health. For example, the number of cumulative cases in a state shows how many people have been impacted by COVID to date; however, without over time trends or information on current case rates, make it more difficult for the residents and public officials to evaluate how safe it might be to engage in normal day-to-day activities. Information on transmission rates within particular settings—like schools or public transportation—represents more useful applications of the basic counts of COVID-19 cases that some states calculated in order to arm the public with more specific information about the risk of various activities. These analyses are just as likely to highlight not only decreased risk of the virus but could just as easily highlight the dangers and severity of the pandemic. The prevalence and severity of the pandemic have varied substantially since March 2020, and public officials relying on a narrative that the pandemic is a hoax or no more concerning than a mild case of the flu may have an incentive to avoid sharing such details transparently with the public.

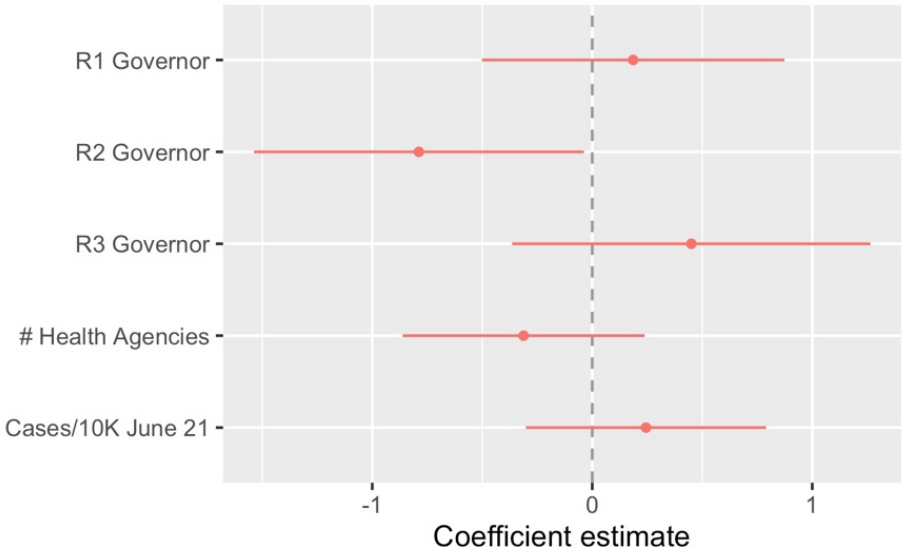
There is no significant difference between Republican, broadly defined, and Democratic governors in the analytical complexity of state dashboards. Pre-existing public health capacity does not appear to result in any more sophisticated analysis of the data that states collect, and finally, echoing the findings across this paper, the severity of COVID-19 also has no impact (see Figure 9).

Figure 9: Analytical index scores (OLS w/95% C.I.)



When I break out the Republican party according to the governor's allegiance with Donald Trump, more interesting patterns emerge. Compared with Democratic governors, ostrich Republicans (R2 Republicans) are associated with less analytical dashboards. Specifically, a switch from a Democratic governor to an R2 governor is associated with a 0.78 decrease in the analytical index for a state's dashboard (see Figure 10). There is no statistically significant difference between the index scores for states led by R1 and R3 Republicans and Democrats. It is worth pointing out specifically that contrary to expectation, pre-existing capacity is not associated with the analytical index.

Figure 10: Coefficient estimates for analytical index with detailed Republican categories (OLS w/ 95% C.I.)



CONCLUSION

I find that a state's pre-existing capacity for public health explains the amount of basic data the state collected and made publicly available. However, the degree to which state agencies analyzed the data to provide a sense of overtime trends, patterns in transmission, and the effectiveness of vaccines varied substantially across the country. The Governor's party, and even the degree of their alignment with President Trump explains the sophistication of the analysis available on state dashboards, controlling for cumulative case rates and pre-existing capacity. Similar partisan patterns also explain the extent of racial data collection—which varied substantially across states. States led by Republican governors were less likely to have collected extensive data on the impact of COVID-19 on racial groups. Perhaps even more remarkably, governor's alignment with Donald Trump is negatively associated with the collection of racial data. Interestingly it isn't the governors *most* aligned with Trump that led states with less racial data collection, but rather those that were not vocally supportive or opposed to Trump's COVID-19 response were less likely to have sophisticated racial

data collection. This also could be reflection of a variety of other state-level factors and future work should probe this relationship more deeply to figure out what might be driving this result.

Though the pandemic has highlighted just how quickly science and data can become politicized, this shows the downstream effects of state (under)investment in data collection capacities in major policy areas. And that the collection and analysis of data itself can be the result of political calculations, particularly when an unexpected and urgent need arises. Furthermore, I offer suggestive evidence that broad trends in elite and public reaction to COVID was not associated with the clarity of available data, but rather partisan alignments. This finding builds on a burgeoning array of studies showing the power of partisanship to dictate both individual and institutional responses to a public health crisis, despite clear science on effective mitigation strategies.

Documenting the origins of data and analysis that informs public policy, I would argue, is normatively important in and of itself given the substantial interest in being evidence-based in policymaking. This paper takes a step towards further clarifying the political and institutional factors that affect data collection and analysis. In future work, I hope to also evaluate the relationship between the sophistication of data collection and analysis might impact policy outcomes or public behavior. In the COVID-19 context, it would be especially interesting to understand if there is any relationship between the availability of data on the status of the pandemic and mask adherence among the public or on the length or implementation of various mitigation strategies.

Understanding the political patterns to data collection and analysis is important for ensuring that public officials and the public are operating with reliable and accurate information about their environment. Data availability and transparency also have enormous implications for equity. Scholars, advocates, and public officials will be unpacking the long-term impacts of COVID-19 for generations to come, but without a clear picture of exactly what happened and who was most impacted, the unequal effects are only likely to fester.

REFERNCES

"About the Racial Data Tracker." n.d. The COVID Tracking Project. Accessed July 15, 2020. https://covidtracking.com/race/about.

Adolph, Christopher, Kenya Amano, Bree Bang-Jensen, Nancy Fullman, Beatrice Magistro, Grace Reinke, and John Wilkerson. 2022. "Governor Partisanship Explains the Adoption of Statewide Mask Mandates in Response to COVID-19." *State Politics & Policy Quarterly* 22 (1): 24–49.

Barry-Jester, Lauren Weber, Anna Maria. 2021. "Over Half of States Have Rolled Back Public Health Powers in Pandemic." *Kaiser Health News* (blog). September 15, 2021. https://khn.org/news/article/over-half-of-states-have-rolled-back-public-health-powers-in-pandemic/.

Butler, Daniel M., Craig Volden, Adam M. Dynes, and Boris Shor. 2017. "Ideology, Learning, and Policy Diffusion: Experimental Evidence." *American Journal of Political Science* 61 (1): 37–49.

Capano, Giliberto, Michael Howlett, Darryl SL Jarvis, M. Ramesh, and Nihit Goyal. 2020. "Mobilizing Policy (in) Capacity to Fight COVID-19: Understanding Variations in State Responses." *Policy and Society* 39 (3): 285–308.

Chiu, Allyson. 2020. "Rush Limbaugh Says Coronavirus Is 'common Cold' That's Being 'Weaponized' against Trump." *The Washington Post*, February 25, 2020. https://www.washingtonpost.com/nation/2020/02/25/limbaugh-coronavirus-trump/.

Elcheroth, Guy, and John Drury. 2020. "Collective Resilience in Times of Crisis: Lessons from the Literature for Socially Effective Responses to the Pandemic." *British Journal of Social Psychology* 59 (3): 703–13.

"Growth and Opportunity Project." 2013. Republican National Committee. https://gop.com/growth-and-opportunity-project/.

Helm, Madeline, and Mary Spicuzza. 2020. "'I Became a Lightning Rod': Wisconsin Health Officers Have Been Vilified and Threatened during COVID-19, and Some Have Quit." *Post Crescent*, December 10, 2020. https://www.postcrescent.com/in-depth/news/2020/12/10/wisconsin-health-officers-quit-during-covid-19-pandemic-amid-pushback/6428607002/.

James, Sarah. 2022. "Mea Culpa: The Role of Data Collection in Public Officials Acknowledging Policy Failure." *State Politics & Policy Quarterly* 22 (1): 96–119.

Karch, Andrew, and Shanna Rose. 2017. "States as Stakeholders: Federalism, Policy Feedback, and Government Elites." *Studies in American Political Development* 31 (1): 47.

Kendi, Ibram X. 2021. "We Still Don't Know Who the Coronavirus's Victims Were." The Atlantic. May 2, 2021. https://www.theatlantic.com/ideas/archive/2021/05/we-still-dont-know-who-the-coronaviruss-victims-were/618776/.

Patterson, Shawn Jr. 2020. "The Politics of Pandemics: The Effect of Stay-At-Home Orders on COVID-19 Mitigation | State Politics & Policy Quarterly | Cambridge Core." *State Politics & Policy Quarterly* 22 (1): 1–23.

"Policy Data – CUSP." n.d. Accessed March 28, 2022. https://statepolicies.com/data/.

Sanderson, Ian. 2002. "Evaluation, Policy Learning and Evidence-Based Policy Making." *Public Administration* 80 (1): 1–22.

Stolberg, Sheryl Gay. 2020. "Trump Administration Strips C.D.C. of Control of Coronavirus Data - The New York Times," July 14, 2020. https://www.nytimes.com/2020/07/14/us/politics/trump-cdc-coronavirus.html.

APPENDIX A: Dashboards and party labels

Table 1: Month[5] in 2020 of original dashboard publication

State	Month	State	Month
AK	March	MT	April
AL	March	NC	June
AR	June	ND	March
AZ	April	NE	March
CA	June	NH	June
CO	April	NJ	March
CT	April	NM	April
DE	April	NV	March
FL	April	NY	April
GA	April	OH	April
HI	March	OK	March
IA	March	OR	April
ID	April	PA	April
IL	May	RI	April
IN	March	SC	April
KS	April	SD	March
KY	April	TN	April
LA	April	TX	March
MA	April	UT	March
MD	April	VA	March
ME	June	VT	April
MI	March	WA	May
MN	April	WI	March
MO	June	WV	March
MS	March	WY	May

[5] I identified the month of original publication by using the Internet Wayback Machine. I searched the URL for each state's dashboard in July 2020 and identified the month in which the URL first was published.

Table 2: Detailed party labels for 2021 governors

State	Gov. 2021	Detailed Party
ALABAMA	Kay Ivey	R1
ALASKA	Mike Dunleavy	R1
ARIZONA	Doug Ducey	R1
ARKANSAS	Asa Hutchinson	R2
CALIFORNIA	Gavin Newsom	D
COLORADO	Jared Polis	D
CONNECTICUT	Ned Lamont	D
DELAWARE	John Carney Jr	D
FLORIDA	Ron Desantis	R1
GEORGIA	Brian Kemp	R1
HAWAII	David Ige	D
IDAHO	Brad Little	R2
ILLINOIS	J.B. Pritzker	D
INDIANA	Eric Holcomb	R2
IOWA	Kim Reynolds	R2
KANSAS	Laura Kelly	D
KENTUCKY	Andy Beshear	D
LOUISIANA	John Bel Edwards	D
MAINE	Janet Mills	D
MARYLAND	Larry Hogan	R3
MASSACHUSETTS	Charlie Baker	R3
MICHIGAN	Gretchen Whitmer	D
MINNESOTA	Tim Walz	D
MISSISSIPPI	Tate Reeves	R2
MISSOURI	Mike Parson	R2
MONTANA	Greg Gianforte	R2
NEBRASKA	Pete Ricketts	R1
NEVADA	Steve Sisolak	D
NEW HAMPSHIRE	Chris Sununu	R3
NEW JERSEY	Phil Murphy	D
NEW MEXICO	Michelle Lujan Grisham	D
NEW YORK	Andrew Cuomo	D
NORTH CAROLINA	Roy Cooper	D
NORTH DAKOTA	Doug Burgum	R1
OHIO	Mike DeWine	R3
OKLAHOMA	Kevin Stitt	R1
OREGON	Kate Brown	D
PENNSYLVANIA	Tom Wolf	D
RHODE ISLAND	Daniel McKee	D
SOUTH CAROLINA	Henry McMaster	R1
SOUTH DAKOTA	Kristi Noem	R1
TENNESSEE	Bill Lee	R2
TEXAS	Greg Abbott	R1
UTAH	Spencer Cox	R3
VERMONT	Phil Scott	R3
VIRGINIA	Ralph Northam	D
WASHINGTON	Jay Inslee	D
WEST VIRGINIA	Jim Justice	R3
WISCONSIN	Tony Evers	D
WYOMING	Mark Gordon	R2

APPENDIX B: OLS results

Note that Democratic governors are the reference category for models with detailed party labels

Table 3: Data collection index scores with broad party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	3.707	0.0961	38.57	1.107e-36
Gov_Dem	-0.09303	0.0963	-0.9661	0.3391
HealthAgencies	0.05537	0.0241	2.298	0.02616
CasesPer10K_June21	5.534e-06	4.893e-06	1.131	0.2639

Table 4: Data collection index scores with detailed party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	3.628	0.1119	32.43	2.331e-32
Party_Detailed_2021R1	0.1028	0.1267	0.8117	0.4214
Party_Detailed_2021R2	0.02406	0.1382	0.174	0.8626
Party_Detailed_2021R3	0.1587	0.15	1.058	0.2959
HealthAgencies	0.05106	0.02527	2.021	0.04941
CasesPer10K_June21	5.352e-06	5.1e-06	1.049	0.2997

Table 5: Racial index scores with broad party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	5.568	1.835	3.034	0.003998
Gov_Dem	1.228	0.6345	1.935	0.05929
HealthAgencies	0.1904	0.1543	1.234	0.2236
WhiteAlone	0.0119	0.02275	0.5233	0.6033
CasesPer10K_June21	-2.488e-05	3.486e-05	-0.7137	0.4791

Table 6: Racial index scores with detailed party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
Party_Detailed_2021R1	-0.9778	0.8075	-1.211	0.2325
Party_Detailed_2021R2	-1.677	0.9222	-1.819	0.07593
Party_Detailed_2021R3	-1.181	0.9985	-1.182	0.2435
HealthAgencies	0.1769	0.1617	1.094	0.2801
WhiteAlone	0.01533	0.02408	0.6367	0.5277
CasesPer10K_June21	-2.659e-05	3.56e-05	-0.7469	0.4592

Table 7: Analytical index scores with broad party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.565	0.2798	5.594	1.169e-06
Gov_Dem	0.05012	0.2803	0.1788	0.8589
HealthAgencies	-0.04123	0.07015	-0.5878	0.5595
CasesPer10K_June21	1.612e-05	1.424e-05	1.132	0.2635

Table 8: Analytical index scores with detailed party labels (OLS)

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	1.756	0.3011	5.832	5.948e-07
Party_Detailed_2021R1	0.1859	0.3411	0.5451	0.5884
Party_Detailed_2021R2	-0.788	0.3721	-2.118	0.03986
Party_Detailed_2021R3	0.4502	0.4039	1.115	0.2711
HealthAgencies	-0.07778	0.06801	-1.144	0.2589
CasesPer10K_June21	1.238e-05	1.373e-05	0.9015	0.3722