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# Political Attitudes and Behavior in a Pandemic: Factors Affecting Compliance with COVID-19 Policies

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# POLITICAL ATTITUDES AND BEHAVIOR IN A PANDEMIC: FACTORS AFFECTING COMPLIANCE WITH COVID-19 POLICIES

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# ABSTRACT

The ongoing COVID-19 public health crisis provides a unique opportunity to examine the role that public opinion plays in policy efficacy. More specifically, what factors contribute to different policy outcomes within the population? Governments and institutions at all levels have sought to incentivize compliance behavior utilizing different approaches. Statistical models were used to examine the relationship between attitudes and behaviors within the United States. Trust is the primary focus in this paper because of its role in a public health crisis with consideration for rules and norms of social interaction. The analysis herein shows that social trust is a significant consideration for policy-related outcomes while political trust is not. Additionally, ideology and attitudes supporting coronavirus policy provide some explanatory power when all components are factored into the final modeling.

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# CHAPTER ONE
# INTRODUCTION

The purpose of this thesis is to explore the relationship among public opinion, behavior, and policy through the lens of COVID-19. This pandemic provides a unique and powerful opportunity to examine how different factors affect attitudes, behavior, and ultimately the success of particular policies due to nearly ubiquitous media coverage, government action at all levels, and intense public interest that result in salience of policy efficacy. This is a rare situation wherein nearly every nation and individual alike are impacted by the choices of their government and others in society - highlighting political and social lenses. Resources have been committed to disseminating information, tracking all elements of the pandemic's effects, and identifying solutions. Measurable attitudes and behaviors at the state level will be considered in relation to COVID-19 policy outcomes.

The primary focus here is attitudinal trust and its role in the pandemic. A distinction between political and social trust is made to isolate their disparate effects. More specifically, demographic and political control variables are combined with measurements of trust at the state level prior to the public health crisis to examine the impact on policy attitudes and outcomes. The first hypothesis addresses a seemingly intuitive link between the two. The second and third hypotheses separate the impact of political and social trust as potential drivers of policy-related outcomes. Most importantly, social trust is predicted to be significant due to its more fundamental role in interactive dynamics of a pandemic and based on existing literature. The expectation is

that higher levels of social trust may result in increased policy compliance. Conversely, political trust is predicted to be insignificant because it is activated as a latent and secondary effect - perhaps after sorting of issue and policy positions by party or ideology through ongoing information feedback.

The domain of public opinion offers some explanation for the relationships between predispositions, attitudes, and behaviors. The literature on the topic addresses relevant matters such as the role and impact of elites on masses, effects of information and demographics, and the importance of salience on expressed opinions. The Oxford Handbook of Social and Political Trust says that trust "entails a state of perceived vulnerability or risk that is derived from individuals' uncertainty regarding the motives, intentions, and prospective actions of others" (Uslaner, 2018). Put another way, social trust is a "set of assumptions, beliefs, and expectations held by members of one group (specifically, the ingroup members) regarding the likelihood that the actions of another group and/or its individual members (the outgroup) will be beneficial, favorable, or at least not detrimental to their group's interests" (Uslaner, 2018). This may cut in favor of compliance or risk-averse behavior when there is no perceived outgroup but may become a detractor from cooperation when outgroups are perceived – such as in the case of partisan divides throughout the pandemic timeline.

This research is important because of the realization of ineffective policy and polarization during the pandemic. Lessons learned may be used in future crises to improve policy design, outcomes, and cooperation among elements of society so that potential harm can be further mitigated. More than one article has made the argument,

implicitly or explicitly, that variables in the political and social landscape have led to discernible differences in mortality. If problems are attributed to the wrong causes, future adjustments to correct or improve such responses will not necessarily achieve their aims.

The case for separately examining behavior and attitudes is primarily that people may express opinions that do not manifest into, or directly contrast with, behavior. This was highlighted in the classic piece *The American Voter*, as the authors referenced lack of correlation between principles and behavior and the funnel of causality for linked attitudes (Campbell, Converse, Miller, & Stokes, 1960). It may be the case, for example, that individuals answer survey questions by expressing support of conservative positions but vote for more liberal policies or candidates. Within the pandemic, it has been shown that people exhibit skepticism with various policies but comply with them nevertheless – such as the percentage of Republican voters who disagree with mask policies but report self-compliance (Pew Research Center, 2020).

Key questions drive this line of inquiry and establish the basis for a theoretical model. What factors lead to disparate responses to pandemic policy within the population? Is there a difference between impacts from political and social trust? How does political ideology and policy alignment affect outcomes? What preexisting factors may have affected the attitudes and behavior of citizens? Perhaps most importantly, what lessons are revealed in the analysis wherein policy effectiveness is reduced or nullified by behavior as a result of these attitudes? The relationship between variables discussed herein are relevant. News articles, survey responses, and data sources provide the basis for a provoking analysis.

# CHAPTER TWO
# LITERATURE REVIEW

An interesting and foundational take on public opinion provides a framework for parsing out important components in how opinions are formed and expressed. John Zaller develops the Receive-Accept-Sample model with four axioms in a conceptualization of the way in which information and predispositions interact to form expressed public opinion through survey responses (Zaller, 1992). He pairs it with theory to show how people vary in terms of attention to politics and how they transform information. He argues that probability for individual support of a position depends on a mix of salient positive and negative considerations when prompted. He also explores resistance to intense persuasive communications, for example from elites, depending in large part on contrary communication. Zaller looks at the relationship between masses and elites, as well as how attitude changes are linked to political awareness. He concludes that elite communication leads mass opinion by looking at historical cases. "Within the framework of the RAS model, the effect of political awareness or intellectual engagement with politics is to enhance the quality of attitude reports… that more accurately reflect underlying predispositions" (Zaller 1992, 85). In one example, he points out that public opinion shifted virtually overnight after a Nixon speech advocating for wage and price controls to battle inflation in 1971, moving Republican approval over 40 percent and overall support 10 percent afterward (97). Awareness-induced polarization of liberals and conservatives on partisan issues is empirically supported in the model (102). Regarding this effect, it would be predictable that polarization increases perhaps as a function of

enhanced political awareness. Social media and mass media are widespread and provide access to confirming or dissenting information at the behest of the user. This makes engagement with political discussions more accessible. “Political awareness increases likelihood of receiving messages and resisting information contrary to values” (266). The author also addresses the idea of relevance. “Salience is affected by any number of things such as recent news, survey structure, and interviewee. Attitude change, regarding long-term responses, results from exposure to changing ideas over time and predispositions” (267).

A classic model within the study of public opinion breaks political individuals into three types of people: apathetic, mostly passive, and those who are highly aware, knowledgeable, and engaged (Almond & Verba, 1963). This points to differences in awareness of the citizenry and touches on its impact in the social and political world. The authors discuss the relationship that types of political actors have with political stability, as well as lingering behavioral impacts from past political movements. Taking this point as an assumption, further analysis would be needed to determine the level of political awareness and engagement from the samples in given surveys since there may be relevant variance in the degree to which they impact social and political landscapes. At the very least, the work points to a link between mass behavior and political awareness.

Challenging the idea of an informed and rational public, Keeter and Delli Carpini make an effort to assess political knowledge of the electorate with empirical analysis using multiple data sets from the 1940s through the 1990s (Kuklinski, 1997). Low levels of knowledge continue despite improved education and access to information.

Motivation, cognitive ability, and opportunities to acquire information are particularly relevant. The authors lay out numerous advantages enjoyed by people who are more politically inclined or savvy. They also examine conflicting views on the perception and proper role of the public. Interestingly, they critique some assumptions that the public is rational even if individuals are ignorant. In addition, the authors engage with the idea of "contested truths" in political matters wherein cold, hard facts are not necessarily readily perceived or available. Instead, some subjectivity creates problems in measurement and analysis. The perspective offered herein is important to understand how public opinion contains subjective or misinformed elements that persist despite evidence to the contrary. This point carries into recent discussions regarding misinformation and its effects on the public related to vaccine efficacy. The Surgeon General recently issued an advisory pointing to specific sources and recommendations to address the problem (Stolberg & Alba, 2021).

Taking a different modeling approach, Philip Converse identifies a lack of standard political belief system shared by the population and examines cross sections of masses and elites to highlight a source of differentiation in their beliefs (Converse, 1964). One study on voter levels of conceptualization found that group interest motivated people more than elite information, education, nature of the times, or other factors previously considered. Opinions are constrained in belief systems that are more social, less psychological, and even less logical. This may coincide with social capital and social trust being relevant factors for analysis (Min, 2020). One interesting finding is that the most active political participants self-identify as independent but are in fact quite

partisan, while the least partisan were those with the least knowledge or concern for issues. Additionally, the piece examined a cross section of elites and masses and found wide differences in levels of constraint in their opinions. He noted that the visible public referenced quite often is made up of a small portion of sophisticated and engaged people that are not representative of the actual population. The work also points out that elites may form their idea of public opinion changes based on interactions with a small, like-minded group.

Theorizing about public opinion through a primary factor proves useful in three pieces from the literature. First, the authors of "The Responsive Voter" address the role that memory recall has on preferences and contrasts that with other independent variables during campaigns (Lodge, Steenbergen, & Brau, 1995). They provide a model for candidate evaluation and found that recall is a small factor; however, campaign messaging is a significant consideration. Voters recall very little information but incorporate campaign messaging in evaluation of candidates that provided a similar correlation to party identification. The authors make the case for determining under what conditions voters will intake and integrate campaign information into persistent candidate evaluation. From there, it is possible to determine how reasonable voters are and if the trust in their judgment is sound for democracy.

Second, an article from Stemson et. al. examines various elements of the relationship between presidential approval and economic conditions through survey data of voters from several decades (Stimson, Erikson, & MacKuen, 1992). They run through various models of public opinion and presidential approval wherein they isolate

independent variables to find the best predictor. The authors conclude that the strongest correlation is found with business expectations, insofar as economic conditions translate to future collective expectations of a prosperous economy. This is despite current conditions and is affected by elites, but the same conclusions cannot be drawn from individual data. The models run various current condition indicators that seem significant until compared to expected condition variables – providing support that the future is more valued. This may carry over to other observations about voters and how they make decisions. Combined with "The Responsive Voter" conclusions about recall being a small factor in candidate evaluation, it may be the case that public opinion throughout the pandemic is less dependent on past information. Instead, attitudes about policy and resultant behavior may be more a function of elite messaging, recent information, and future expectations about the direction of the country or economy.

A third piece adds another layer to the discussion. MacKuen and Marcus seek to expand models of voter behavior through understanding emotional responses during campaigns – specifically with anxiety and enthusiasm – as a positive component to their political engagement (MacKuen & Marcus, 1993). They use empirical tests to show that elites elicit such responses in the public and those public responses change throughout the campaign. The authors also highlight differences in how anxiety and enthusiasm manifest to affect which voters stay engaged and how attention to matters is impacted by anxiety. Perhaps more importantly, this should carry over to research on how elites and framing of information through various media affect voter emotions which, in turn, affect behavior.

Despite concerns about an inconsistent and uninformed public, the authors of *The Rational Public* make the case for a stable and slow-to-change public opinion (McCann, 1994). Page and Shapiro acknowledge potential for manipulation and misinformation from elites but maintain that Americans have reasonable expressions on the matter and can be characterized as a rational public collectively. It can be constituted by a majority of irrational people whose shortcomings are overcome through social interaction and statistical aggregation similar to market functions. If there is blame for dysfunction, it should be linked primarily to defects in political information delivery and elites' lack of responsiveness. Their analysis was done with surveys regarding policy over 55 years. The results were a large number of statistically significant changes confirming modest swings in public sentiment. They identify the potential for masking of larger subgroup swings through aggregation of results, with little shift in group preferences (McCann 1994). Overall, this work supports the idea of a rational public while also providing evidence against rapid swings in opinion from earlier pieces.

The idea of shortcuts to mass information in public opinion is addressed by Samuel Popkin. He makes the case for voters that reason through low information tools such as heuristics, media content, anecdotal evidence, and their "gut" feeling (Kinsey, 1993). They should not, he urges, be evaluated based on factual knowledge. He relies heavily on studies from the 1940s and includes elements of cognitive psychology. Popkin differs from some in the field by making the argument that education expands the issues that concern voters rather than simply providing deeper knowledge on political matters.

A different theory on public opinion comes from James Stimson. His work argues that mass opinion consists of moods that shift on the established conservative and liberal paradigm as a result of government action from policy (Beck, 1992). Mood is the average of survey answers regarding policy. He tries to craft a model based on a median voter that is core to his mood concept while acknowledging that some political topics are more complex. He also argues that mood is downstream of political ideology.

Recent research on public opinion has revealed important details to the current situation. An article published in 2020 briefly examines the dynamics of a fluid digital age – referencing curation, algorithms, and elusive information flow – and the innovation being used to adapt public opinion research (Edgerly & Thorson, 2020). They reference changes in methodology, patterns of content production and circulation, and explanations of political information inequalities. Some research cited here cuts against the idea of adaptive algorithms increasing partisan information and thus reinforcing ideological bubbles. The authors highlight that it may not be possible to separate the study of media's effect on public opinion with content production and distribution. More interestingly, one reference reinforces the claim that emotional responses increase enthusiasm through analysis of interactions on Twitter (192). Regarding information inequality, they identify a continued gap in political information for those less interested in politics despite technology advancements. Moreover, evidence is found that digital media use does not mobilize new activity for those less politically engaged.

An essential element to linking behavior and public opinion may be trust. Kenneth Newton casts doubt on traditional views of trust such as the relationship

between social and political components and trust as a predisposition at the individual level. Newton accepts the theory at the national level with aggregate data, but offers that there is an asymmetrical relationship between the two elements. He says, "social trust is expressed by people who feel they are generally surrounded by trustworthy people, and political trust is expressed by people who feel that their political system and its politicians generally perform satisfactorily" (Newton, 2001, p. 211). He examined trust in numerous countries over different periods of time and was able to highlight examples of political trust changing irrespective of social trust levels. He concludes that, "…healthy stocks of political capital cannot be built up in nations lacking social capital (Brazil, Romania, Argentina), but political capital can dwindle rapidly in countries, such as Finland, with well-developed social capital" (210).

Mary Anderson goes to the heart of the matter regarding trust and behavior related to political efficacy by examining telephone survey responses from 2004 (Anderson, 2010). Anderson mentions that trust and efficacy may be affected by social elements – and such considerations may be used to promote desired behavior. Specifically, she references the possible extension of "collective efficacy theory" and provides evidence that social relationships and participation in networks promotes social trust (60). The piece also explores policy efficacy as having internal and external elements that address the ability for an individual to influence politics and responsiveness of government to the citizens, respectively (64). The analysis demonstrates that "sense of community has a direct positive effect on personal trust even when these individual-level characteristics are taken into account" (80).

Political efficacy was further broken down into internal and external efficacy with the elements of effectiveness and responsiveness (Craig & Maggioto, 1982). The authors link political trust and discuss the positive relationship that efficacy has. They add that political trust is associated with external efficacy, but that internal efficacy is not related with attitudes about the political system or actors. Lastly, the authors assert that internal and external efficacy are only moderately related but have different effects on attitudes.

What does the phrase “trust in government” refer to exactly? The ambiguity is relevant to the matter at hand because of many different potential interpretations or levels of analysis. Stanley Feldman attempted to unravel this problem in his piece. He tackles the interpretation of responses to recurring surveys highlighting the steep decline in political trust since the 1960s that has been the subject of great inquiry (Feldman, 1983). Specifically, Feldman estimates effects of general compared to specific questions on trust in government. He points out an alternate interpretation of results as being indicators of attitudes on those in Washington rather than the broader political system due to question wording. Feldman concludes by uncovering “random and systematic measurement error" as causing more than half of overall variance in some existing analysis (351). Additionally, a stronger link exists between trust in Congress and trust in government perhaps partly due to the public’s perception of the two overlapping. Thus, it is confirmed that ambiguity within expressed opinion exists and must be parsed out for proper conclusions.

Political trust can fluctuate considerably at different levels of government, but much was not known about the state-by-state variance within the nation until Weinschenk

and Helpap's piece. They examine state-level trust through existing poll data. As they point out, trust in the federal government has varied from around 70 percent in the 1960s to less than 20 percent in recent years, while trust in state and local government has been fairly stable and relatively high (Weinschenk & Helpap, 2015, p. 26). The authors identify significant factors such as the economy, state ideology, polarization, and corruption that may play a factor at the state level while also identifying data that is not significant – despite being so at the local or national level (33). This points to the importance of considering the nuance at different levels of government for proper analysis.

Research from numerous organizations provide demographic information that is used in assessing expressed opinions. Pew Research Center provided a review of coronavirus-related survey data and highlighted differences among many facets including levels of trust, infections, employment, and education outcomes based on demographic factors such as race and political ideology (Deane, Parker, & Gramlich, 2021). They also issued a report in June 2020 highlighting disparity in outlook and policy attitudes along primarily ideological lines (Pew Research Center, 2020). Thorough data sets on longitudinal surveys such as the ANES and GSS provide an opportunity to examine preexisting factors like political and social trust that enable the establishment of a baseline and control for statistical analysis. In another example, a longitudinal study from survey participants in Israel found directional relationships between age and policy compliance (Levkovich, 2021).

Trust is the most important consideration in the list of model variables. Articles, reports, time-series studies, and analyses going back decades into American history address social and political trust. A direct review of social trust impacting COVID-19 transmission across 68 countries found that higher levels of trust was correlated with a quicker peak in new infections that could lead to combatting the virus faster while at the same time enabling more rapid initial transmission (Min 2020). An article addressing political trust in extreme situations points to the potential for citizens to look for institutions to deliver public services and base trust levels on expected outcomes (Ellinas & Lamprianou, 2014). Further, it highlights links between social, political, and economic factors. An article published in 2008 argues against previous research minimizing a significant relationship between these two types of trust and instead concludes that they are, in fact, correlated (Zmerli & Newton, 2008). The authors identify the unit of analysis as a considerable factor, in that a positive correlation has been found at the national level but not at the individual level. They point to research and survey design limitations in their summary of potential explanations.

Exploring political trust across different levels of government, authors of a separate article find evidence to the contrary of some existing scholarship on predictors of trust levels (Weinschenk & Helpap, 2015). They reference the need for additional analysis. Still other articles focus on specific institutions, such as the front-and-center CDC, and changes in trust levels through the pandemic. The authors of a RAND Corporation research report found a slight decrease of trust in the CDC while reported levels for the USPS and FEMA actually increased, with a wide range of demographic

differences accounting for the changes but no clear leading indicator (Pollard & Davis, 2021). These sources show that the dynamics of trust are not wholly understood or predictable and may vary depending on the unit of analysis.

Attitudes about specific policies implemented for COVID-19 are most readily available in journal and news articles. In one such example looking at western European nation survey responses using statistical tools, researchers found that lockdowns had a non-partisan effect of increasing political trust and the popularity of some incumbent political leaders (Bol, Giani, Blais, & Loewen, 2020, p. 497). Though they highlight that no consensus yet exists in the developing research, the authors point out studies suggesting partisanship as a strong indicator of policy positions in other areas and a desire for government intervention (498) that may be attributable to the "rally-around-the-flag effect" (502). A recent article from Pew revealed shifts in public opinion policies over shutdowns, social distancing, and masks as a function of time and partisanship (Deane, Parker, & Gramlich, 2021). Americans' attitudes on such matters have diverged throughout the pandemic timeline.

It has been shown in past research that the direction of the relationship between public opinion and policy is important and varies from indiscernible to bidirectional (Page, 1983, p. 189). Policy changes are sometimes made because of shifts in public opinion, and the current crisis may reveal such a case. One piece from the *American Political Science Review* highlighted the dynamics of policy as a response to public opinion (Stimson, Mackuen, & Erikson, 1995). They found that "policy responds dynamically to public opinion change. This responsiveness varies by institution, both in

level and in mechanism, as would be expected from constitutional design" and are broken down by various components of government (543-557). Representatives may modify behavior, messaging, and ultimately policy based on strategy and with electoral outcomes in mind (545). Perhaps surprisingly, they find evidence for significant response to short-term changes in public opinion that may result in policy changes (559).

One publication explored hypotheses related to COVID-19 vaccine hesitancy in the population. They found two factors predicting attitudes – vaccine history and perceived impact of the virus (Pogue, 2020). Those who were already accepting of other vaccines were more likely to receive a COVID-19 vaccine. The authors also noted, "an understanding of vaccines and immunity had no impact on the respondents' attitudes; the number of people they knew with COVID-19 also appeared to be non-influential on their decisions" (4). They highlighted timing of the survey in September 2020 and political issues as possible limitations of their results. This was before a vaccine was available. Respondents expressed concern about rapidity of development with potential unknown side effects, with 20 percent of people opting for 1-2 years for vaccination (8). Demographic factors were found to lack predictive power in their modeling. Interestingly, their finding for the pandemic's effect on America was significant but unclear as to which dimension was most salient. One possibility is alignment with components captured in social trust. Vaccination then became a policy focus.

Public policy is created in a complex environment of official and unofficial actors, bureaucrats, technocrats, systems, culture, economic and political systems (Birkland, 2020, pp. 2-31). It can be broken down into different domains that address

varying issues, and these domains may sometimes overlap or conflict in terms of scope and resources needed. There is also the complexity of interpretation of policy, challenges in disagreements throughout different levels of government, adjudication, and enforcement that may be hindered by unexpected resource limitations. One recent and prominent example makes this problem relevant. The CDC updated mask guidance to allow vaccinated people to forego face coverings in most locations. An article from the New York Times highlights the ensuing confusion and its relevance to attitudes and behavior (Sandoval, Taylor, & Smith, 2021). The authors point out disparities between levels of government, dissent among the citizenry and public health officials, and the role that business owners might play in enforcement. Some states wholly eliminated mandates, while in Minnesota the state and local level restrictions differed. Additionally, politicians had "expended significant political capital on mask orders in the face of protests and lawsuits…" but were unable to differentiate between vaccinated and unvaccinated people (Sandoval, Taylor and Smith 2021). Such a change in policy creates the potential for unintentional contradictory information among institutions and actors that may lead to changes in trust levels and subsequent outcomes that are undesirable for government entities.

The feedback between policy outcomes and attitudes regarding coronavirus policy includes information from elites and media. This factor may have a substantial impact on public opinion. An article from *Psychological Medicine* analyzing survey results from UK residents highlights the link between conspiracy beliefs and resistance to some desirable behaviors such as vaccination (Allington, 2020). More specifically, the role that

social media plays in the dissemination of misinformation is discussed. They find "a negative relationship between COVID-19 conspiracy beliefs and COVID-19 health-protective behaviours, and a positive relationship between COVID-19 conspiracy beliefs and use of social media as a source of information about COVID-19" (Allington 2020).

There are clear links between predispositions, attitudes, and behaviors within the study of public opinion – drawing primarily from Zaller's model for this analysis. These components are relevant when attempting to predict behavior from people within society. Examining such factors in light of the pandemic, policy makers will want to understand the nature of the relationship between these attitudes and behaviors to elicit desirable policy outcomes. Furthermore, analysis of the available data may reveal the effectiveness of policy so that adjustments can be made. The next step is to provide a theoretical structure to conduct analysis through.

# CHAPTER THREE
# THEORETICAL FRAMEWORK

The elements brought forth in the public opinion literature provide a framework to better understand public opinion and provide the theoretical foundations for its link to policy outcomes. Zaller identifies the impact that political representatives and elites can have in a short time frame (Zaller, 1992). He further examines the role that salience and polarization have on public opinion. Alvarez and Brehm's expansion of Zaller's work references the role that information plays when interacting with predispositions (Alvarez & Brehm, 2002). One theme of note is the function that elites have. In the cases of campaigns and the economy, evidence was found that elites have a significant impact on public opinion due in part to their influence on emotions. Enthusiasm and anxiety have been shown to affect voter behavior (MacKuen & Marcus, 1993). These elements are captured through feedback within the model. A relatively stable and rational public is supported by evidence as well (McCann, 1994). Popkin's case for reasoning through heuristics and media content is relevant here (Kinsey, 1993). The public and its expressed opinions are a core element to liberal democracy. The attempt at modeling how public opinion is formed comes from this central relationship. Thus, the relationship between trust and behavior of citizens is revealed. An argument for linking governmental action as a result of policy to shifts in public opinion was put forward by Stimson (Beck, 1992). A more recent framing of the problem supports an increase in political engagement through emotional social media interactions while at the same time maintaining a gap in

information and awareness to those who are disengaged or disinterested in politics (Edgerly & Thorson, 2020).

The literature on trust more specifically highlights the importance and necessity of distinguishing between social and political trust and considering the individual or aggregate levels of analysis differently (Newton, 2001). Social factors such as sense of community have been examined as relevant and may be particularly salient in differentiating behaviors during a public health crisis (Anderson, 2010). Numerous factors correlate to variation in trust across local, state, and federal levels of government (Weinschenk & Helpap, 2015), and the wording of questions may affect interpretation of data due to misalignment of what "government" refers to (Feldman, 1983).

A model for the relationship between predispositions, attitudes, and behavior is important in order to identify relevant elements that may be mapped to operationalize the argument. Statistical tools will be used on aggregate data sampling using OLS regression, and analysis of the model depicted in Figure 3.1 below will be conducted. First, there are important preexisting factors, including predispositions and demographic elements, that impact public opinion prior to the pandemic. As referenced in the literature review, these are well established in the field and include elements such as party identification and political ideology. Adding to that is a measurement for political and social trust. These variables affect the next component to the model – attitudes regarding COVID-19 policies. Specifically, metrics will include public opinion on mask mandates, vaccinations, and restrictions on social interaction. Finally, the last set of variables in the model are

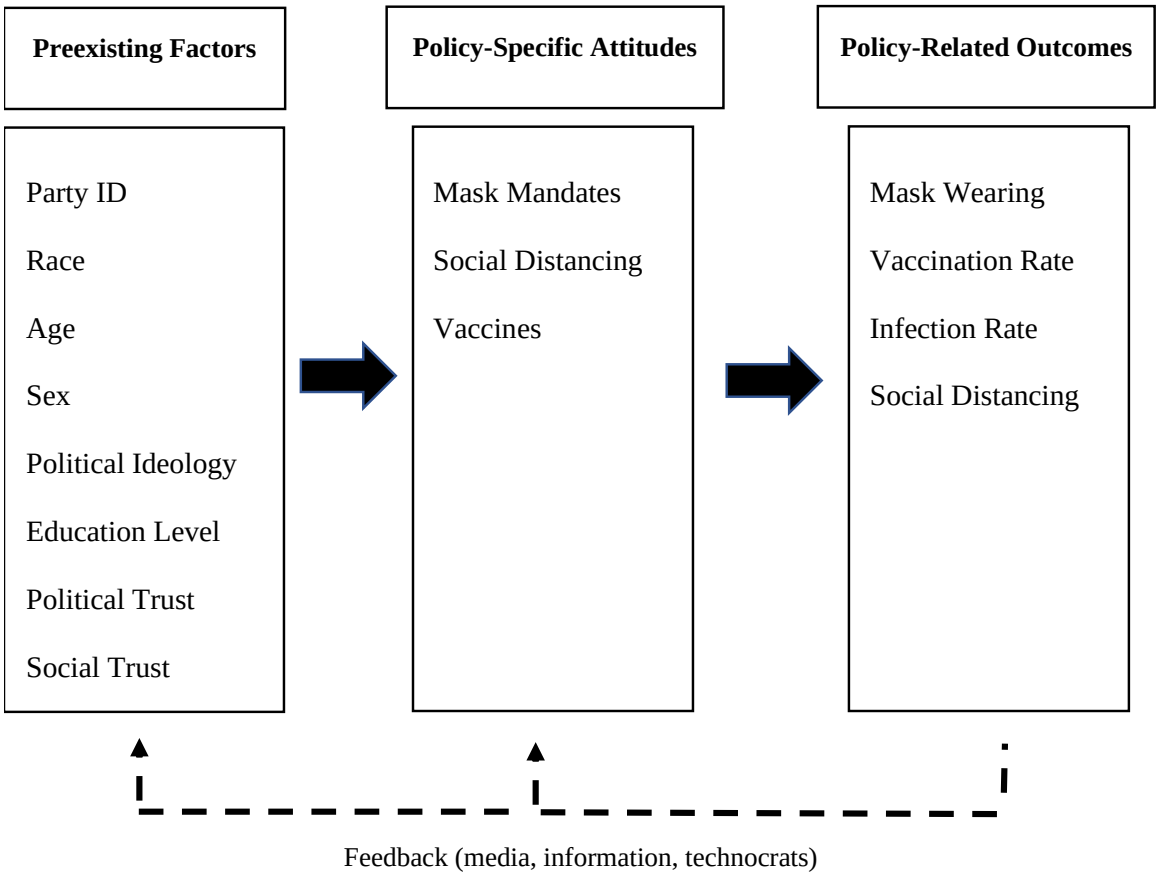


Figure 3.1 – Theoretical Model

measurable outcomes. Compliance with mask mandates, vaccination rates, social distancing, and overall infection rates will be analyzed. While infection itself is not a behavior, it is a metric widely tracked during the pandemic and results at least in part from the actions of the populace. Lastly, a feedback loop exists between outcomes and the prior levels. The information feedback from sources such as political actors, technocrats, institutions, media organizations, and the actions of others are relevant.

Analysis will be done with sampling of data from all states within the United States. The policies and political ideology of government entities varies widely across the country. However, the similarity in culture, history, and government structure provide homogeneity in the sample. Various articles and survey results from journals and media sources will be reviewed for anecdotal and qualitative analysis. Combined, these elements will provide a wide range of information for hypothesis testing as listed in Table 3.1 below.

The primary data set provides a breakdown on social capital and social trust by state and county across the United States as part of the Social Capital Project (U.S. Congress, 2018). This accounts for variables on race, age, education, and social trust. It is cited in a paper titled "The Geography of Social Capital in America" which defines the concept as "the aspects of our relationships that produce benefits for us" (5). The report is especially useful because it "establishes that the [social capital] index is consistently – and often strongly – related to a range of economic, social, and demographic indicators…" that are important because "if we neglect the health of

Table 3.1 – Hypotheses and Testing

| **Hypothesis** | **Testing** |
|---|---|
| H1: Policy-specific attitudes are positively correlated with policy-related outcomes | Conduct statistical analysis; determine relationship direction and significance |
| H2: Social trust will have the strongest positive relationship with policy-related outcomes | |
| H3: Political trust does not have a significant impact on policy-related outcomes | |

our associational life, we will misdiagnose the causes of many problems and tend to focus on economic priorities over social ones" (1-5). The report cited limitations in current state-level representative samples for surveys or research including Putnam's *Bowling Alone* and subsequent scholarship addressing social capital, instead containing results that were based on older data or represented the country more broadly (8-9). An additional data set utilized for full vaccination rate includes the COVID Risk and Vaccine Tracker listed under the COVID ACT Now non-profit organization tracking daily metrics related to the pandemic (CovidActNow, 2021). A KFF database tracking numerous relevant factors was used for the variable regarding sex distribution by state (KFF). Variables for party identification and ideology were pulled from a Harvard University dataset (Enns & Koch). Measures for positive political trust from a 2013 Gallup survey were used in the statistical analysis by combining percentage of people expressing a "great deal" or a "fair amount" of trust in the federal government by state (Jones, 2014). Attitudinal responses to various COVID policies were drawn from the Delphi Group's COVIDCast surveys conducted with Facebook and included thousands of daily participants across the country (Delphi Group, 2021). Finally, the COVID States Project provided a repository of survey trends measured across 14 waves in all states that was used for social distancing attitude and behavior variables (Jennifer Lin).

Trust has been examined in numerous articles addressing vaccination. In an Economist survey conducted by YouGov from late September 2021, a minority of Americans remain opposed to getting the vaccine (Frankovic, 2021). They point to cleavages along partisan, racial, and regional lines where people "lack trust – in vaccines,

in drug companies, or in the government" (Frankovic, 2021). The article shows more than 25% of unvaccinated people cite potential side effects, while 41% express distrust factors. It is not possible from this particular national survey to differentiate the lack of trust in government the emerges after partisans are on the losing side of presidential elections. Nevertheless, Republicans and Independents responded with a lack of political trust as the second most important reason for not being vaccinated after side effect concerns (Frankovic, 2021). Another striking difference can be seen in responses to positive levels of trust in the CDC, FDA, and Doctor Anthony Fauci. While Americans in general answered with "trust a lot or somewhat" at 50 percent, 49 percent, and 42 percent, respectively, those who are unsure of getting vaccinated or do not plan on doing so responded with positive trust levels at only 13 percent, 16 percent, and 6 percent (Frankovic, 2021). Instead, they report overwhelming numbers for distrust at each over 50 percent. Their sample consisted of 1,500 U.S. adult citizens and was weighted for national representation with a margin of error at less than 3 percent.

A Gallup survey on confidence ratings for major U.S. institutions from July 2021 provides some important insight into dynamics of trust across 14 entities as seen in the snapshot in Figure A.1 (Brenan, 2021). Average trust levels were at 33 percent, down 3 percentage points compared to a higher level reported in 2020 but at the same levels as 2019. For context, the highest average was 43 percent in 2001 and 2003. Changes in trust levels were not statistically significant in 8 of the 14 measured entities. Positive trust levels in Congress, the presidency, the Supreme Court, and television news were all below 40 percent and down slightly from 2020 (Brenan, 2021). Small business and the

military were the only institutions rating above 51 percent. The Gallup results do identify distinct polarization within their results, highlighting Democrats and Republicans for having positive trust in the military and small business but negative trust in banks, the criminal justice system, big business, and the Supreme Court. Furthermore, "Republicans have far more confidence than Democrats in the police and the church. Meanwhile, Democrats' confidence in the other eight institutions outpaces Republicans' by double digits" (Brenan, 2021). An average of 50 points has separated presidential approval for those identifying with the two parties since 2004. As the author notes, "…supporters of the president's party [are] much more confident than supporters of the opposition party, consistent with the greater party polarization in presidential job approval ratings" (Brenan, 2021). An important takeaway from the recurring surveys is a degree of stability in trust levels going back to 1993, with a range in average trust from 31 to 43 percent of respondents expressing "a great deal" or "quite a lot" of confidence. This provides some countervailing evidence to the notion that trust levels changed significantly after the 2016 election, though such criticisms cannot be dismissed. The most notable changes were a significant decrease for confidence in police for 2020 and a sharp increase for trust in the medical system and public schools. However, these spikes have reversed direction in 2021. Gallup surveyed 1,381 adults in the United States and weighted the pool of respondents to be nationally representative.

Some research has discussed trust while others reference confidence. To address potential questions about trust compared to confidence, one piece discusses the two concepts together in an assessment of generalized trust as a potential predisposition

(Brehm & Savel, 2019). The authors state that "the evidence ranges from Putnam's signature work on the idea of generalized trust as a component of social capital in the United States, to equivalent research in other nations…" (Brehm & Savel, 2019). However, the analysis references confidence and trust as both being supportive for their conclusions. They draw some distinction, saying "we acknowledge that 'confidence' and 'trust' are not identical concepts, certainly in some languages (including English), though the two are intimately related" (Brehm & Savel, 2019). Brehm and Savel identify linguistic overlaps and use the terms nearly interchangeably. The authors also point out examples when researchers use confidence data for trust analysis. The overall point is that trust and confidence are very closely related.

Trust has been examined in other research as a contributing and important factor for policy outcomes, showing that the "linkage between social capital, trust, and the quality of government at the state-level has been widely demonstrated empirically" (Cary Wu, 2020). Wu goes on to mention, "states that have higher levels of social capital tend to have higher testing rates (r=0.49) and states with more trust also have higher testing rates (r=0.33). The pattern holds, irrespective of Republican or Democratic state governance." This hints at an important disparity that will be explored with statistical modeling.

Based on Putnam's elaborations on social trust and social capital it might be expected that trust would fall due to Covid restrictions isolating people (Putnam, 1995). In one sense people might rally around the flag or cause, but the interruption of social connections may mitigate such potential. According to Putnam, "the theory of social

capital presumes that, generally speaking, the more we connect with other people, the more we trust them, and vice versa" (Putnam, 1995, p. 665). He makes the case for civic engagement and social trust correlation, and thus it may be true that as civic engagement drastically decreased in some sectors of American life, social trust eroded. The question is how persistent or residual is social trust? How much of a lag is there, and how far does it trail behind engagement? "Sorting out which way causation flows-whether joining causes trusting or trusting causes joining-is complicated both theoretically and methodologically, although John Brehm and Wendy Rahn (1995) report evidence that the causation flows mainly from joining to trusting" (Putnam, 1995, p. 666). Unfortunately, state-level metrics on trust is limited and, as of this writing, time-series data assessing social trust levels has not been identified.

# CHAPTER FOUR
# RESULTS AND DISCUSSION

## Results

The theoretical model includes various demographic factors and preexisting variables relevant to COVID-19. The point of emphasis is how these factors interact with attitudes and ultimately impact policy outcomes. All variables are understood to be state-level measures. The primary measurable outcome is percent of adults fully vaccinated. State-level data is readily available for this metric and is clearly defined. It would have been possible to examine partial doses as has been cited in news articles, but full vaccination is a more useful measure since it addresses compliance with perhaps the most desirable and widely discussed compliance behavior. The second policy outcome examined was percent of those reporting self-compliance with mask usage, followed by infection rate per 100,000 people. Although infection rate itself is not a direct policy outcome, it is the result of individual and social behavior. As such, it provides another important, albeit imperfect, metric to evaluate compliance and policy effectiveness. Finally, percentage of those self-reporting compliance with social distancing requirements is tested as a dependent variable. Attitudes were also included as relevant. Specifics used as dependent and independent variables included political trust, social trust, vaccine acceptance, and approval for social distancing.

Statistical diagnostic tools examining the distribution as well as potential multicollinearity, heteroskedasticity, leverage, normality, influence, and impact of outliers were utilized to identify significant issues within all models. Specifically,

multicollinearity was examined through usage of correlation and *vif* functions. Then, the models were scrutinized for problems with normality and heteroskedasticity using Breusch-Pagan, Cook-Weisberg, and Shapiro-Wilk tests, robust standard errors as needed, *gladder* functions to identify base form and alternate function form distributions, descriptive statistics, and scatter plots with residual values. The decision was made to proceed with models as-is when only marginal improvements would have been made if influential states were removed or with the addition of independent variables. Such adjustments did not outweigh the benefit of including as many relevant samples as possible while maintaining satisfactory degrees of freedom. The sample consisted of 47 states that included relevant data. The number was shy of the desired 50 because of limitations in data points for social trust in three states – Alaska, Delaware, and Hawaii. A summary of all variables used, broken down by state, can be seen below in Table 4.1.

The first set of models (depicted in Table 4.2 below) include the four primary dependent variables that relate to policy outcomes through behaviors. The second set of models include attitudes as dependent variables regressed against demographic factors. The final models combine attitudes and behavior together. As depicted in the first set of models, using demographic factors and trust levels as independent variables for their effects on various policy outcomes, support for H3 is found. Support for H2 regarding social trust shows significance in all models but mixed directional relationships among the dependent variables. The data sets range from 2006 to 2021 with the majority coming from 2013 and beyond. The decision to include this specific set of measures for demographic factors and trust were based on relevant literature review and research.

Table 4.1 – Variable Summary by State

| State | % Fully Vaccinated | % Wearing Mask Feb '21 | Infection Rate Feb '21 | % Social Distancing Feb | % ID as Republican | % Black | Median Age | % Male | % ID as liberal | % Adults with BA | % Positive political trust | Social Trust | Vaccine Acceptance | % Approve Social Distancing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | 30.77 | 90.68 | 32.08 | 41.41 | 36.15 | 26.4 | 38.6 | 48.1 | 12.99 | 24 | 57 | -1.07 | 78.35 | 77 |
| Alaska | 41.28 | 86.3 | 24.30 | 47.15 | 34.60 | 3.1 | 33.6 | 50.7 | 15.69 | 28.8 | 71 | . | 84.66 | 86 |
| Arizona | 38.14 | 91.82 | 42.92 | 42.55 | 32.49 | 4 | 37.1 | 49.3 | 16.79 | 28 | 57 | 0.06 | 82.9 | 76.6 |
| Arkansas | 32.81 | 83.9 | 45.02 | 43.53 | 36.31 | 15.4 | 37.7 | 48.4 | 12.54 | 21.5 | 65 | -0.5 | 81.24 | 80.2 |
| California | 47.23 | 96.7 | 29.97 | 56.68 | 26.30 | 5.6 | 36 | 49.4 | 26.29 | 32 | 49 | -0.18 | 90.38 | 89.2 |
| Colorado | 49.21 | 92.82 | 21.57 | 49.34 | 32.47 | 3.9 | 36.4 | 50.1 | 21.02 | 38.7 | 59 | 0.41 | 87.57 | 80.9 |
| Connecticut | 57.9 | 96.9 | 34.03 | 50.08 | 26.40 | 9.7 | 40.6 | 48.7 | 24.75 | 38 | 52 | 0.27 | 91.8 | 84.6 |
| Delaware | 46.59 | 97.55 | 23.26 | 55.84 | 28.77 | 21.1 | 33.8 | 47.5 | 22.49 | 55.4 | 61 | . | 83.2 | 88.4 |
| Florida | 42.7 | 90.34 | 35.69 | 51.42 | 33.17 | 15.4 | 41.6 | 48.5 | 17.39 | 27.9 | 52 | -0.47 | 82.84 | 83.7 |
| Georgia | 33.88 | 88.15 | 38.40 | 47.34 | 33.35 | 30.7 | 36.2 | 48.2 | 16.57 | 29.4 | 63 | -1.15 | 79.58 | 80.3 |
| Hawaii | 50.09 | 98.16 | 5.21 | 57.04 | 15.41 | 1.7 | 38.5 | 48.8 | 33.41 | 31.4 | 57 | . | 86.67 | 91.6 |
| Idaho | 34.61 | 80.62 | 19.11 | 40.67 | 42.24 | 0.6 | 35.7 | 49.9 | 12.50 | 26.2 | 65 | 0.07 | 77.5 | 82.1 |
| Illinois | 43.11 | 93.54 | 21.15 | 39.57 | 24.55 | 14.1 | 37.4 | 48.7 | 23.32 | 32.9 | 28 | -0.22 | 86.68 | 70 |
| Indiana | 38.13 | 89.11 | 25.41 | 46.46 | 32.75 | 9.1 | 37.4 | 49 | 16.39 | 24.6 | 68 | -0.08 | 81.17 | 83.5 |
| Iowa | 46.17 | 88.19 | 21.52 | 47.67 | 32.72 | 3.2 | 38 | 49.5 | 18.60 | 27.2 | 67 | 0.98 | 80.84 | 82.3 |
| Kansas | 40.35 | 90.25 | 28.89 | 38.85 | 34.47 | 5.6 | 36.2 | 49 | 13.81 | 31.6 | 56 | 0.38 | 80.57 | 79.1 |
| Kentucky | 40.99 | 89.27 | 43.24 | 49.99 | 34.83 | 7.8 | 38.6 | 49 | 13.07 | 22.7 | 53 | -0.79 | 80.11 | 83 |
| Louisiana | 33.26 | 89.2 | 25.97 | 48.54 | 31.30 | 31.9 | 36.2 | 48.1 | 13.86 | 23 | 48 | -0.99 | 83.41 | 81.8 |
| Maine | 58.76 | 92.28 | 17.60 | 54.46 | 27.88 | 1.2 | 44 | 48.4 | 22.19 | 29.3 | 40 | 0.53 | 86.61 | 88.7 |
| Maryland | 52.95 | 97 | 21.70 | 59.91 | 24.39 | 29.2 | 38.3 | 48 | 24.97 | 38.4 | 49 | -0.26 | 92.14 | 90 |
| Massachusetts | 58.3 | 96.14 | 36.95 | 50.13 | 17.35 | 6.6 | 39.4 | 48.6 | 26.58 | 41.2 | 58 | 0.22 | 94.52 | 86.5 |
| Michigan | 44.91 | 92.94 | 12.60 | 42.47 | 30.09 | 13.7 | 39.5 | 49 | 20.30 | 27.4 | 54 | 0 | 83.69 | 78.5 |
| Minnesota | 49.3 | 91.5 | 15.55 | 39.63 | 30.76 | 5.6 | 37.8 | 49.6 | 19.27 | 34.2 | 61 | 1.32 | 87.96 | 76 |
| Mississippi | 28.5 | 87.97 | 30.87 | 48.76 | 35.93 | 37.4 | 36.7 | 47.5 | 14.89 | 21 | 61 | -1.17 | 79.17 | 81.7 |
| Missouri | 36.67 | 86.69 | 23.02 | 42.61 | 29.52 | 11.5 | 38.3 | 48.7 | 16.42 | 27.6 | 56 | 0.1 | 80.82 | 79.1 |
| Montana | 40.8 | 83.62 | 23.86 | 33.3 | 34.14 | 0.4 | 39.8 | 49.9 | 16.33 | 29.9 | 68 | 1.29 | 80.6 | 74.5 |
| Nebraska | 44.6 | 84.61 | 19.13 | 50.61 | 38.43 | 4.6 | 36.2 | 49.7 | 13.55 | 30 | 73 | 1.15 | 84.61 | 86.5 |
| Nevada | 39.65 | 93.7 | 23.60 | 27.29 | 29.72 | 8.2 | 37.5 | 49.7 | 21.01 | 23.2 | 52 | -1.43 | 85.2 | 69.3 |
| New Hampshire | 54.12 | 92.74 | 26.03 | 34.8 | 31.54 | 1.2 | 42.4 | 49.4 | 20.68 | 35.5 | 66 | 0.77 | 86.1 | 74.2 |
| New Jersey | 53.34 | 95.9 | 43.21 | 43.33 | 27.41 | 12.7 | 39.5 | 48.7 | 24.23 | 37.5 | 62 | -0.4 | 89.97 | 79.9 |
| New Mexico | 51.03 | 94.37 | 21.38 | 54.91 | 30.03 | 1.8 | 37.2 | 48.8 | 22.02 | 26.7 | 55 | -0.35 | 90.39 | 88.5 |
| New York | 51.04 | 96.57 | 44.15 | 48.9 | 21.97 | 14.4 | 38.2 | 48.4 | 27.28 | 34.7 | 53 | -0.36 | 89.22 | 78.3 |
| North Carolina | 38.09 | 90.19 | 40.31 | 54.73 | 34.84 | 21.2 | 38.3 | 48 | 17.36 | 29 | 51 | -0.82 | 82.1 | 82.1 |
| North Dakota | 37.8 | 81.62 | 5.21 | 52.89 | 37.19 | 2 | 35.2 | 50.5 | 14.29 | 28.2 | 77 | 1.71 | 75.73 | 89 |
| Ohio | 42.75 | 92.52 | 26.77 | 48.95 | 32.17 | 12.1 | 39.3 | 48.9 | 18.22 | 26.7 | 54 | -0.18 | 81.44 | 82.4 |
| Oklahoma | 36.15 | 84.99 | 48.85 | 44.79 | 38.95 | 7.1 | 36.2 | 49 | 11.28 | 24.5 | 63 | -0.16 | 77.5 | 78.5 |
| Oregon | 50.4 | 93.82 | 13.11 | 48.61 | 32.18 | 1.8 | 39.1 | 49.2 | 22.03 | 31.4 | 54 | 0.57 | 88.13 | 76.2 |
| Pennsylvania | 47.22 | 91.54 | 29.87 | 48.44 | 33.86 | 10.6 | 40.6 | 48.7 | 20.47 | 29.3 | 46 | -0.19 | 84.7 | 79.5 |
| Rhode Island | 55.75 | 92.62 | 43.00 | 47.16 | 24.33 | 5.4 | 39.9 | 48.9 | 26.84 | 32.5 | 40 | -0.06 | 90.43 | 82.3 |
| South Carolina | 36.28 | 90.36 | 62.00 | 51.46 | 35.58 | 27.1 | 38.8 | 47.7 | 15.39 | 26.5 | 55 | -0.88 | 83.4 | 85.2 |
| South Dakota | 44.09 | 73.68 | 15.38 | 36.02 | 37.19 | 1.6 | 36.8 | 50.4 | 14.49 | 27.5 | 74 | 1.69 | 80.26 | 73.6 |
| Tennessee | 33.92 | 85.1 | 35.97 | 40.59 | 32.27 | 16.7 | 38.5 | 48.4 | 13.58 | 25.4 | 59 | -0.96 | 80.75 | 80.4 |
| Texas | 38.72 | 91.96 | 40.17 | 49.11 | 37.07 | 11.6 | 34.2 | 49.1 | 14.94 | 28.1 | 72 | -0.55 | 84.63 | 85.4 |
| Utah | 35.39 | 91.99 | 32.70 | 43.71 | 45.86 | 1 | 30.3 | 50 | 11.67 | 31.7 | 75 | 0.5 | 86.97 | 79.3 |
| Vermont | 62.94 | 94.47 | 18.16 | 51.39 | 23.47 | 1.1 | 42.6 | 49.4 | 28.59 | 36.2 | 57 | 1.42 | 91.97 | 83.4 |
| Virginia | 49.27 | 93.75 | 40.13 | 53.95 | 32.97 | 18.9 | 37.8 | 48.4 | 19.22 | 36.9 | 62 | -0.32 | 87.88 | 84.9 |
| Washington | 51.08 | 92.86 | 15.78 | 53.89 | 27.10 | 3.5 | 37.6 | 49.7 | 23.03 | 33.6 | 55 | 0.65 | 88.55 | 87.6 |
| West Virginia | 35.85 | 89.92 | 27.75 | 40.4 | 39.16 | 3.4 | 41.9 | 49.1 | 12.52 | 19.6 | 51 | -0.83 | 76.9 | 77.4 |
| Wisconsin | 46.93 | 85.87 | 18.40 | 52.15 | 29.26 | 6.2 | 39.1 | 49.3 | 19.34 | 28.4 | 57 | 0.59 | 84.7 | 81.8 |
| Wyoming | 33.24 | 79.25 | 14.46 | 36.33 | 44.22 | 1.1 | 36.8 | 50.9 | 11.08 | 26 | 76 | 0.67 | 74.46 | 66.5 |

Table 4.2 – Regression models for policy-related outcomes

| **Regression Models for Outcomes** | | | | |
|---|---|---|---|---|
| | **Model 1.1** | **Model 1.2** | **Model 1.3** | **Model 1.4** |
| | % Fully Vaccinated | % Wearing Mask Feb '21 | Infection Rate Feb '21 | % Social Distancing Feb '21 |
| % ID as Republican | 0.1303 (0.1747) | 0.2097 (0.1772) | 0.0285 (0.5485) | 0.6185 (0.3858) |
| % Black | **-0.3018*** (0.0828)** | **-0.1897* (0.0840)** | **-0.7294** (0.2599)** | -0.0569 (0.1828) |
| Median age | **0.6822** (0.2242)** | -0.2598 (0.2273) | -0.2604 (0.7038) | -0.9859 (0.4951) |
| % Male | **-3.0481* (1.2427)** | **-2.6012* (1.2604)** | **-12.5929** (3.9019)** | **-8.4029** (2.7447)** |
| % ID as Liberal | **1.0136*** (0.2285)** | **0.6809** (0.2317)** | -0.6133 (0.7173) | **1.1606* (0.5046)** |
| % Adults with BA | **0.4551*** (0.1318)** | **0.3393* (0.1337)** | **0.9195* (0.4140)** | -0.1590 (0.2912) |
| % Positive Political Trust | 0.0424 (0.0622) | -0.0416 (0.0631) | 0.3644 (0.1954) | -0.0053 (0.1375) |
| Social Trust | **1.8204* (0.8983)** | **-2.8854** (0.9111)** | **-10.2912*** (2.8205)** | **4.2467* (1.9840)** |
| | | | | |
| Intercept | 131.3655 | 202.637 | 625.846 | 460.064 |
| N | 47 | 47 | 47 | 47 |
| R-squared | 0.9203 | 0.7665 | 0.5862 | 0.3905 |
| F-ratio | 54.83 | 15.60 | 6.73 | 3.04 |
| * p≤ 0.05; **p≤0.01; ***p≤0.001 (numbers in parentheses are standard errors) | | | | |

The variables used here were fairly normally distributed and did not present repeated significant errors in the modeling. There was not much variation with regard to attitudes related to coronavirus policy – as a steady majority expressed support for the vaccine and social distancing. The mean for both were above 80 percent. Positive political trust saw a broad range between 28 and 77 percent while social trust was measured on a 5-point scale. Self-reported mask compliance was high overall – above 73 percent nationally - while social distancing and full vaccination rates were between 27 and 63 percent. Control variables for age and sex did not vary widely across states. Political ideology and partisanship had similar standard deviations, with a wider range being present for the latter across states. The percent of the population that was Black showed the highest range and standard deviation across the board for control variables, while infection rate was the highest among policy-related outcomes.

The analysis for Models 1.1-1.4 starts with a regression of percent fully vaccinated on various state-level metrics. These consisted of percent of the population identifying as Republican, percent of the population that is Black, median age, percent male, percent identifying as liberal, percent with a bachelor's degree, percent expressing positive political trust, and finally the level of social trust on a five-point scale.

**Model 1.1**

First examining the policy outcome in percent of those fully vaccinated in June 2021 shown in Model 1.1, the variables for race, age, sex, ideology, education, and social trust were all statistically significant at the 95% confidence level using a p-value of 0.05. All results reported are on average and while holding other variables in the model

constant. An increase of 1 percent in the population that is Black is associated with a decreased fully vaccinated rate of 0.3 percent or 3 less people per 1,000 population. An increase in the median age of a state's population by one year is associated with an increase in the full vaccination rate of 0.6 percent or 6 more people per 1,000 population. An increase of 1 percent in the population that is male is associated with a decreased fully vaccinated rate of 3 percent or 30 less people per 1,000 population. An increase of 1 percent in the population that is identifies as liberal is associated with an increase in the fully vaccinated rate of 1.0 percent or 10 more people per 1,000 population. An increase of 1 percent in the population that has a bachelor's degree is associated with an increased fully vaccinated rate of 0.5 percent or 5 more people per 1,000 population. An increase of social trust among the population by 1 on a 5-point scale is associated with an increased fully vaccinated rate of 1.8 percent or 18 more people per 1,000 population. The variables for measuring percent identifying as Republican and percent expressing positive political trust were not statistically significant. In terms of goodness of fit, the $R^2$ value for this regression model was 0.9203 which explains 92.03% of the variation in the model. The F-statistic value of 54.83 has a probability value less than 0.001 which is much smaller than an alpha-level of 0.05 associated with a 95% confidence level. The decision is to reject the null hypothesis that the sample was randomly drawn from a population where the regression model explains none of the variation in the rate of full vaccination among state populations. Therefore, the value of $R^2$ for this sample is statistically different from zero. The descriptive statistics for this model are depicted in Table A.1.

All tests for Model 1.1, were within limits and resulted in no significant concerns requiring adjustments to variables or sampling. A positive correlation was found for social trust (depicted in Figure A.2) and ideology. Five states – Illinois, Kentucky, Louisiana, Maine, and New Mexico – exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose.

**Model 1.2**

Testing for Model 1.2 regarding self-reported mask compliance in February 2021 were within limits for most testing parameters but exhibited a slight negative skew. The model failed the heteroskedasticity test using the *hettest* function but passed another test using the Shapiro-Wilk metric. Robust standard errors were used to correct for this and are provided in Table A.2.

The tests on Model 1.2 for heteroskedasticity and skewness/kurtosis were barely within the 95% confidence level value of 0.05. No adjustments to variables or sampling were made. The $R^2$ value was 0.7665 and five variables were found to be statistically significant in the model. A negative correlation was found for social trust (depicted in Figure A.3) and sex. Idaho, South Dakota, and Utah exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. Political trust was not statistically significant.

## Model 1.3

All tests for Model 1.3 were within limits with the exception the test for skewness which was outside the 0.05 p-value by 0.06. The strongest effect came from the education level variable, and when dropped the skewness test passed. However, the decision was made to accept these conditions due to the marginal differential in passing and the desire to maintain consistency across models. Thus, there were no significant concerns requiring adjustments to variables or sampling. The $R^2$ value was 0.5862 and four variables were found to be statistically significant. A negative correlation was found for social trust (depicted in Figure A.4) and sex. Four states – Maine, New Mexico, Rhode Island, and South Carolina – exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. The tests on Model 1.3 for heteroskedasticity was barely within the 95% confidence level value of 0.05. Political trust was not statistically significant.

## Model 1.4

All tests for Model 1.4 examining self-reported social distancing as a policy outcome in February 2021 were within limits and resulted in no significant concerns requiring adjustments to variables or sampling. The $R^2$ value was 0.3905 and three variables were found to be statistically significant. A positive correlation was found for social trust (depicted in Figure A.5) and ideology, while a significant negative relationship was identified for sex. Illinois, Nevada, North Dakota, and Utah exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the

initial model based on plot results and the desire to include all possible states unless serious disparities arose. Political trust was not statistically significant.

Analysis in plotting results from Model 1.4 revealed two potential influential observations – Nevada and Illinois – as depicted in Figure A.6. The regression was executed again with dummy variables for those two states. The resulting regression output is listed in Table A.3. The $R^2$ value nearly doubled to 0.5642 and ideology remained statistically significant. However, social trust and sex were no longer significant, while age in the revised model is statistically significant.

The next set of models focuses on attitudinal factors related to COVID-19. The decision was made to include political and social trust as attitudes because they are at the center of this research. Although trust can be viewed from the dispositional lens and thus could have been excluded from the attitude-level modeling, such psychological or personality analysis perspectives are outside the scope of this paper. The research design herein relies largely on measurable trust levels according to survey responses. Results from the four OLS regressions are summarized in Table 4.3 below. These models assessed each attitude in isolation and did not include policy outcomes. The intent was to determine other preexisting factor impacts on specific attitudes, with vaccine acceptance and approval of social distancing policy being specifically linked to COVID-19. Measures for mask policy attitudes by state were not included in this second set of models because data was not found during the research timeline.

Table 4.3 – Regression models for policy-specific attitudes

| **Regression Models for Attitudes** | | | | |
|---|---|---|---|---|
| | **Model 2.1** | **Model 2.2** | **Model 2.3** | **Model 2.4** |
| | Social Trust | Positive Political Trust | Vaccine Acceptance | Approve Social Distancing |
| % ID as Republican | -0.0268 (0.0314) | 0.2241 (0.4814) | 0.1036 (0.1471) | 0.0335 (0.3268) |
| % Black | -0.0159 (0.0147) | 0.0435 (0.2309) | -0.0858 (0.0705) | -0.2584 (0.1567) |
| Median age | 0.0685 (0.0391) | -0.6821 (0.5753) | -0.3466 (0.1757) | -0.7515 (0.3906) |
| % Male | **0.6148** (0.2013)** | 5.4225 (3.0968) | **-2.3575* (0.9460)** | **-5.3690* (2.1024)** |
| % ID as Liberal | -0.0655 (0.0398) | -0.6546 (0.5930) | **0.5568** (0.1812)** | 0.2872 (0.4026) |
| % Adults with BA | **0.0714** (0.0209)** | 0.3936 (0.3005) | **0.4235*** (0.0918)** | 0.0644 (0.2040) |
| | | | | |
| Intercept | -32.59773 | -192.9695 | 187.7414 | 367.2108 |
| N | 47 | 47 | 47 | 47 |
| R-squared | 0.6761 | 0.5081 | 0.8070 | 0.2679 |
| F-ratio | 13.92 | 6.89 | 27.87 | 2.44 |
| * p≤ 0.05; **p≤0.01; ***p≤0.001 (numbers in parentheses are standard errors) | | | | |

## Model 2.1

All tests for Model 2.1 were within limits and resulted in no significant concerns requiring adjustments to variables or sampling. A positive correlation was found for sex and education. Three states – Mississippi, Nevada, and West Virginia – exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. The $R^2$ value was 0.6761 and two variables were statistically significant.

## Model 2.2

Testing for Model 2.2 regarding positive political trust was within limits for most parameters. However, the model failed tests for skewness/kurtosis and heteroskedasticity. Running the model through the Cameron & Trivedi's decomposition of IM-test did not find heteroskedasticity. Nevertheless, robust standard errors were used to correct for this and are provided in Table A.4.

No adjustments to variables or sampling were made in the initial model. Hawaii, Illinois, and Mississippi exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. The $R^2$ value was 0.5081 and no variables were statistically significant in the original model, but sex became significant with robust standard errors. A positive correlation was found for sex after this adjustment. Analysis in plotting results from Model 2.2 revealed one potential influential observation – Hawaii – as depicted in Figure A.7. The regression was executed again with a dummy variable

for this state. The resulting regression output is listed in Table A.5. The $R^2$ value improved to 0.5712 while sex and education became statistically significant.

**Model 2.3**

Testing for Model 2.3 regarding vaccine acceptance was within limits for most parameters and quite similar to Model 2.2. However, it failed tests for skewness/kurtosis and the Shapiro-Wilk metric for heteroskedasticity. The *hettest* function did not find heteroskedasticity and reviewing the descriptive statistics did not reveal skewness or kurtosis beyond the heuristic values. Robust standard errors were used to correct for heteroskedasticity and are provided in Table A.6.

No adjustments to variables or sampling were made in the initial model. Alaska, Delaware, and Georgia exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the initial model based on plot results and the desire to include all possible states unless serious disparities arose. The $R^2$ value was 0.8070 and three variables were statistically significant in the original model. A negative correlation was found for sex, while a positive relationship was identified for ideology and education. Analysis in plotting results from Model 2.3 revealed one potential influential observation – Hawaii – as depicted in Figure A.8. The regression was executed again with dummy variables for this state. The resulting regression output is listed in Table A.7. The $R^2$ value improved to 0.8596 while race and age became statistically significant.

**Model 2.4**

All tests for Model 2.4 were within limits and resulted in no significant concerns requiring adjustments to variables or sampling. A negative correlation was found for sex. Alaska, Delaware, Illinois, Maryland, Nevada, North Dakota, Utah, and Wyoming exceeded the Cooks D value of 0.08. The plot used for influential observations is included in Figure A.9 due to the number of states exceeding the heuristic threshold. The decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. The $R^2$ value was 0.2679 and one variable was statistically significant.

The last statistical test is to execute OLS regression with combined modeling for policy outcomes that include all measured attitudes. First, Model 1.1 is adjusted by adding vaccine acceptance and social distancing approval attitudes to create Model 3.1. The regression outputs are shown in Table 4.4 below.

**Model 3.1**

All tests for Model 3.1 were within limits and resulted in no significant concerns requiring adjustments to variables or sampling with the exception of multicollinearity. Ideology exceeded the threshold for the *vif* function, and five sets of variables exceeded the correlation threshold. These issues notwithstanding, a positive correlation was found for social trust and age. Three states – California, Kentucky, and Utah – exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities

Table 4.4 – Regression Models for Combined Attitudes and Outcomes

| **Regression Models for Combined Attitudes and Outcomes** | | |
|---|---|---|
| | **Model 3.1** | **Model 3.2** |
| | % Fully Vaccinated | % Social Distancing Feb '21 |
| % ID as Republican | 0.0886 (0.138) | **0.5470* (0.2060)** |
| % Black | **-0.1490* (0.0720)** | 0.1550 (0.1030) |
| Median age | **1.1440*** (0.1990)** | -0.2590 (0.2840) |
| % Male | 0.1490 (1.1800) | -0.8980 (2.1700) |
| % ID as Liberal | **0.4700* (0.2140)** | **0.7450* (0.3030)** |
| % Adults with BA | **0.2800* (0.1160)** | 0.0244 (0.1820) |
| % Positive Political Trust | 0.0066 (0.0500) | -0.1520 (0.0549) |
| Social Trust | **1.5930* (0.7310)** | 1.6930 (1.1920) |
| Vax Acceptance | **0.6500*** (0.1640)** | -0.1410 (0.2290) |
| Attitude Soc Dist | **0.1830* (0.0704)** | **1.0390*** (0.1100)** |
| | | |
| Intercept | -95.4000 | 3.1946 |
| N | 47 | 47 |
| R-squared | 0.9532 | 0.8353 |
| F-ratio | 73.36 | 18.26 |
| * p≤ 0.05; **p≤0.01; ***p≤0.001 (numbers in parentheses are standard errors) | | |

arose. There were no significant issues with heteroskedasticity or normality. The $R^2$ value was 0.9532 and seven variables were statistically significant.

**Model 3.2**

Running the same concept through the worst performing model in the first series, Model 1.4 was adjusted to include the additional attitude measures. Testing for Model 3.2 regarding percent avoiding contact with others, or social distancing, was within limits for most parameters. However, the model failed the Breusch-Pagan test for heteroskedasticity. Additionally, ideology exceeded the threshold for the *vif* function addressing multicollinearity. Running the model through the Cameron & Trivedi's decomposition of IM-test and the Shapiro-Wilk test did not find heteroskedasticity problems. Nevertheless, robust standard errors were used to correct for this possibility and are provided in Table A.8.

No adjustments to variables or sampling were made in the initial model. Idaho, Kansas, Nevada, and Wyoming exceeded the Cooks D value of 0.08. However, the decision was made to keep those states in the model based on plot results and the desire to include all possible states unless serious disparities arose. The $R^2$ value significantly improved to 0.8353 and three variables were statistically significant in the original model, but positive political trust also became significant with robust standard errors. Unsurprisingly, a positive correlation for attitudes about social distancing were found.

Support for H1 was identified in Models 3.1 and 3.2. More specifically, attitudes on social distancing were statistically significant in Model 3.2 at the 99.9% confidence

level. However, collinearity was detected in the correlation matrix so the result may be a function of that interaction. As a counter point, positive attitudes about social distancing were also significant in the model addressing full vaccination rate and it was not collinear as identified in the same matrix. Model 3.1 addressing the percent of those fully vaccinated showed that attitudes measured as positive vaccine acceptance were statistically significant along with six other variables. This result is not surprising, as it is nearly intuitive, but more sensitive measures that do not create potential collinearity problems need to be examined with future data sets on additional measures.

Some useful answers are revealed in conclusion when returning to the initial questions that prompted this research. Quantitative analysis from modeling in this paper have demonstrated a strong distinction between impacts of political and social trust. The ideas operate differently in this context. Interestingly, overall support for H2 was mixed. Social trust was positively correlated in models for vaccination rate and social distancing behaviors. However, it was negatively correlated in mask compliance and infection rate. One possible explanation is that social trust translates differently to certain policies. If people are highly trusting of others to exercise sound judgment, overt preventive measures such as mask compliance may not be viewed as critical. Additionally, as referenced in the literature, high levels of social trust could result in more interaction among people and thus a higher infection rate for COVID-19. However, these results are somewhat contradictory. It may be the case that higher social trust results in lower infection rates as evidenced in this analysis because people are taking precautions even outside of policy prescriptions. Going back to the Oxford Handbook, two possible

explanations are referenced under psychological barriers to trust with groups. Social categorization research showed ingroup positive bias and, along with the discontinuity effect, demonstrated distrust in outgroup members with other factors remaining the same (Uslaner, 2018). More thorough analysis is needed to identify what other variables may be driving the outcomes.

Social trust and sex were significant in all four of the policy outcome models. Political trust, on the other hand, was not significant in any of them – providing support for H3. This may be because the pandemic impacts the social dynamic more directly and thus it is primary and salient for the public, or it may be a function of time and dynamics when the data was sampled. When conducting regression of attitudes alone, sex was significant in three of the four results – with a positive relationship on social trust and a negative relationship with regard to vaccine acceptance and social distancing attitudes. Education was significant for two models and ideology was significant in only one of the four initial attitudinal models. The $R^2$ results were moderate-to-high across the board (lowest value of 0.2679) and only one model produced zero statistically significant variables. Based on the regression outputs herein, party identification, race, and age are not significant variables that drive attitudes related to COVID-19 policy. Perhaps this is due to a measurement error as a disparity between self-reported attitudes and behaviors and real-world outcomes. When predispositions and attitudes interact with information to produce policy outcomes, only ideology and positive attitudes regarding social distancing are significant in both models. Granted, there were potential problems with multicollinearity that need further analysis, but such results were restricted to one or two

variables. Interestingly, party identification was only significant in one model. If it is the case that partisanship impacts media exposure for those most politically aware, it could be assumed that party identification would be a significant variable impacting attitudes and behaviors. However, the operationalization of any clear disparity is only evident in ideology here. Perhaps this merits further statistical analysis given the correlation between those two variables in most of the models.

Two nationally representative survey samples referenced some predictable responses as well. Trust levels for institutions, including primary governmental bodies, remain low and largely stable, even accounting for dynamics after 2016. Numerous examples of perceived hypocrisy as covered through news media also generated some negativity and may have impacted policy compliance. Social trust is a clear driving force in policy outcomes. It may be the case that when trust is low in institutions, experts, political elites, information sources, or other relevant domains, people look to others in their community such as friends and family. One could argue that dynamics within the culture and society are primarily social rather than political.

It is useful to cross-examine results here with other research that has become available in recent months. A longitudinal study of the virus and vaccine hesitancy noted disparity in risk perception, trust, and information consumption along party lines (Fridman, Gershon, & Gneezy, 2021). Specifically, “Republican and Democratic participants in our study reported consuming different sources of information… similar to vaccine attitudes, Republicans’ trust in the media decreased significantly more during our study than Democrats’, suggesting these patterns might be related” (Fridman, Gershon, &

Gneezy, 2021). They also address ideology and party identification, noting "polarization on vaccine measures—both attitudes and intentions—is driven primarily by self-identified Republicans' gradual movement away from their initial responses whereas Democrats' responses remained largely stable" (Fridman, Gershon, & Gneezy, 2021).

## Discussion

The concept of trust is especially important to the hypotheses laid out in this analysis. One excerpt on examining generalized trust as a predisposition stated "'generalized trust' in the form of a predisposition to trust appears to exist (or be in crisis) in the minds of survey respondents across the globe, and for decades" (Brehm and Savel 2019). Though there is no apparent consensus on the matter, if trust is treated as a predisposition, then the measurement and analysis of it primarily at the attitudinal level is problematic. Proper metrics would need to be referenced and controlled for, while models running trust as a dependent and independent variable must be differentiated so as to avoid conflation. These steps were not taken, as the assumption herein is to view trust as an attitude resulting from predispositions activated by information and other factors. It could also be argued that trust levels should be measured before and during the pandemic for proper comparison because the political and social landscape may have shifted substantially in light of the 2016 and 2020 election and events in the summer of 2020. Social trust metrics by state were limited to the data set identified for this research, and political trust was in part identified as fairly stable, albeit with partisan cleavages, as measured in the Gallup time-series surveys (Brenan 2021). Thus, it is not possible to

dismiss such dynamics as playing an integral role in attitudes and behaviors. This work would need to be extended to properly address such arguments.

There are other potential problems with this research design. One well-known dilemma is the ecological fallacy in making deductions about individuals and their characteristics from analysis of aggregate data. In addition, there are a myriad of other variables that may be necessary to include in the suggested modeling. Trust is a complex concept and could be broken down differently to measure more precise attitudes and correlations. For example, trust in institutions such as the CDC and FDA are relevant here. Trust in experts or technocrats may be more salient as well. Political trust could be analyzed at the federal, state, and local level.

The variables selected for regression modeling could be chosen differently. The measures utilized were picked for specific reasons, but analysis results would have shifted if the independent variable for race, education, and political trust were changed. It is also the case that the pandemic has been a very dynamic environment with continuous changes to policy, public opinion, elite discourse, social interaction, and many other factors as cases and deaths went up and down. Governments and institutions created all sorts of tiered response levels based on relevant metrics. Therefore, it is undoubtedly the case that measuring these variables at different points in time would reveal unique insights other than what has been observed in a very limited snapshot here. Future research intentions are to address this shortcoming to fully control for these variables as a function of time and infection dynamics.

It could be argued that vaccination rates as measured early in the pandemic were not really a result of attitudes but rather were a function of federal, state, and local logistic parameters (AJMC Staff, 2021). All adults were deemed eligible for the COVID-19 vaccine as of a 19 April 2021 deadline from President Biden (AJMC Staff, 2021). An additional factor affecting trust levels or vaccine attitudes may have been reports of contamination, side effects, fake vaccines, and the pausing of the Johnson & Johnson version in April 2021. Vaccine hesitancy or acceptance is an important consideration. As one article put it, attempts to implement a federal vaccine mandate "even if supported by science and legal precedent dating back more than a century - could create a groundswell of opposition that would prove counterproductive to public health" (Zurcher, 2020). At the time of the article's publishing in December 2020, 60% of Americans were prepared to take the vaccine according to the Pew Research Center. However, some of the lack of support for vaccinations may be unrelated to the pandemic. One study highlighted by an AJMC report showed that just 52% of Americans took the flu vaccine, with lower rates in Black and Hispanic adults as compared to White adults (AJMC Staff, 2021). Other noteworthy milestones are referenced in the AJMC timeline. The first Emergency Use Authorization for COVID-19 vaccines from the FDA was on 11 December and 14 million doses were administered by the end of the year. Messaging from the highest levels of government included a strong endorsement of vaccine efficacy. President Biden had established a goal of 100 million doses in his first 100 days in office – later increasing to 200 million doses. A time-series analysis would allow a more nuanced view of policy impacts related to milestones.

Further methodological shortcomings exist herein. Intentionally selecting only a few cases for comparison undercuts any attempt at generalization and reveals the problems with small-N analysis. This methodology also cannot avoid selection bias that is integral to sources of information and data that are not all-encompassing of various factors or perspectives. The choice to focus on the United States at the state level was intentional for relevance to field of study and for the sake of simplicity, but there were limitations in data availability across all states. Many of the assumptions regarding the underpinnings of public opinion may be criticized due to their origination from limited research or data sets. For example, conclusions about voter behavior drawn from presidential campaigns may not carry over to crisis response or more complex issues present in the COVID-19 environment.

Existing work on crises in political or social science may already have similar modeling. However, there is enough novelty with coronavirus that overlapping conceptual framing within the existing body of literature does not seem to be significant. Other events involving global interest and compelling international action that come to mind are war and climate change, but the dedication of resources to the pandemic provide a sense of salience and immediacy that has no current rival worldwide. The impact of COVID-19 in terms of cases and deaths of disease is on a scale not seen in recent history, and modern methods for measuring public opinion really developed in the mid-1900s.

Themes throughout the literature also point to the role of media and elites. Technological advancements since the last worldwide crisis craft a different landscape through which to examine the problem. News and messaging are virtually ubiquitous.

Internet connectivity in developed countries provide access to all manner of information sources with any number of interpretations. The role of widespread misinformation and miscommunication are also important to consider. Social media brings a unique layer of complexity to an already saturated environment of information. Public figures such as experts, political representatives, and influencers can instantly connect with people to share information. One final consideration is the polarized political and social landscape in the United States that existed prior to COVID-19. This may need to be tested by comparison to another similar country that did not have the same underlying tension or political dynamic.

There are important extensions of this research that would aid in its robustness. Obvious potential correlated variables should be tested after the original models are analyzed to identify supplemental elements or problems such as multicollinearity and identify alternatives. This would include demographics, risk perception, health status, socioeconomic considerations, and even external factors such as the economy that have been examined in the existing literature. Furthermore, political trust would need to be measured more thoroughly at multiple levels to determine the proper relationship. There is also the possibility that trust in government could be influenced by a myriad of factors outside of those relevant to pandemic response. As an example, lack of political trust may be due to feelings about Congress and have nothing to do with state policy. Future intentions are to run these models with variables for unified and split party control of state governments, policy differentiations, and separation of legislative and executive trust levels.

Next, the focus on public opinion related to policy could expand to include business restrictions, social interactions such as funeral and hospital attendance, and other restrictions on liberty temporarily imposed due to the pandemic. This expansion of policy considerations and their impact on opinion could help identify which policy areas were most salient. Conducting time-series analyses as cases and deaths rise and fall throughout the crisis may reveal different variable impacts, correlations, and relationships. Some of the data sets were not available for analysis at the onset, and it is not possible to examine post-pandemic changes because it is ongoing. There is also the complication of city and county dynamics within each state that could be examined on its own. Measured behaviors could expand with the inclusion of unique activities deemed criminal such as violation of physical distancing rules. Finally, the empirical analysis should be extended to include more comparative analysis across nations. Selected states may contrast democracies with autocracies, developmental levels, historical, and demographic factors.

Future scholarship should consider why social and political trust may have shifted throughout the crisis. An area of interest discovered during this research was the role of perceived hypocrisy or shifting standards in changing perceptions and attitudes. It is not clear to what degree hypocrisy from political elites reduces trust. However, research has established that "hypocritical political behavior has very negative consequences and can affect individuals' attitudes toward political candidates… political misconduct can – independently of particular cognitive effects – result in negative emotional responses, i.e., anger" (Christian von Sikorski, 2020). Policy responses taken in an effort to slow the spread or reduce risk rely on numerous communications media outlets for dissemination.

This requires a regular interaction on the part of citizens to monitor information sources. It may be the case that people are more attentive than normal to the ongoing political response. A case is routinely made by political representatives in setting requirements or recommendations for the public in the name of safety. However, when standards are unequally applied or shift over time without thorough explanation, or when elites run afoul of their own policies either accidentally or intentionally, it may be reported. The perceived hypocrisy likely impacts trust in policy makers and even perhaps the policies themselves. At least one website has been setup to track this specific occurrence and has logged over 70 such reports as of September 2021 (COVID Hypocrisy: Policymakers Breaking Their Own Rules, 2020). The authors found that hypocrisy increased negative emotions and attitudes of those involved in the study, but there was no carryover effect on voting (Christian von Sikorski 2020). It is possible to infer, then, that the real-world implications of a negative response to hypocrisy fall short of changing behavior and thus are not as strong as other relevant factors, but the possibility should still be examined.

Cooperation is needed for combating a phenomenon that spreads largely by social interaction, and trust has a significant impact. The results presented here should provide some context as to what factors help explain variations in attitudes and behaviors regarding this public health emergency. The hope is that research during the largest worldwide crisis in recent memory can be used to craft more effective policy and manage expectations for how the public might respond. Admittedly, this research did not get to the source of the problem in why policy outcomes may have been contrary to those anticipated or desired by their implementors. Therefore, no real policy prescriptions or

guidance can be given. However, the consideration of and differentiation between social and political trust is important. As collective efficacy theory would suggest, social relationship promotion may help improve cooperative behavior, while isolating people may actually undermine these efforts. Understanding what factors affect policy compliance should help inform policy makers and manage expectations for how the public might respond.

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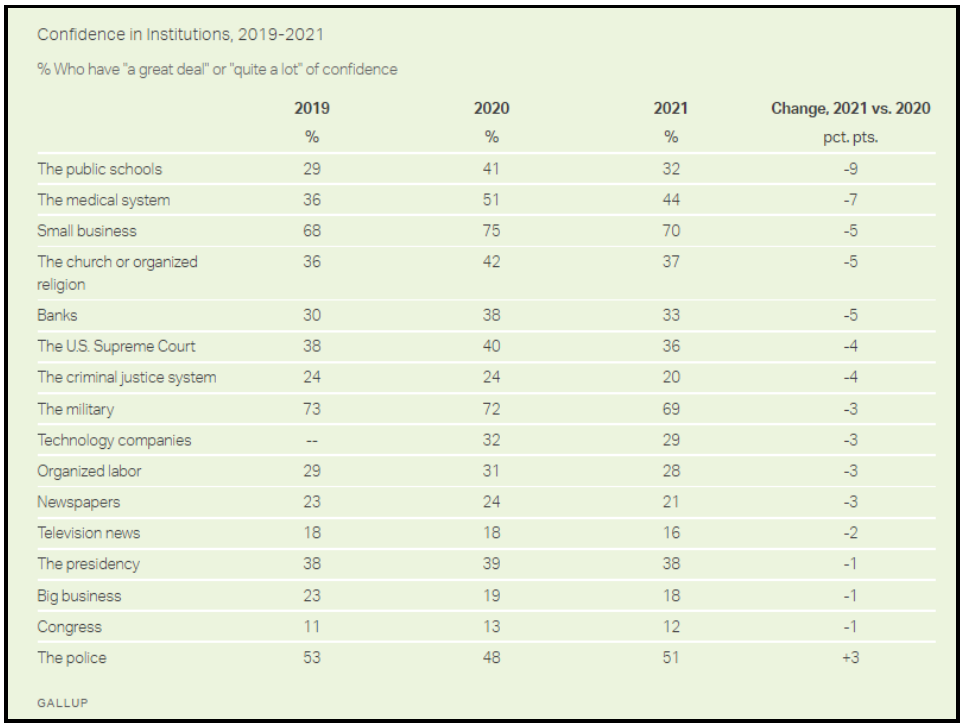
# APPENDIX



Confidence in Institutions, 2019-2021

% Who have "a great deal" or "quite a lot" of confidence

| | 2019 | 2020 | 2021 | Change, 2021 vs. 2020 |
|---|---|---|---|---|
| | % | % | % | pct. pts. |
| The public schools | 29 | 41 | 32 | -9 |
| The medical system | 36 | 51 | 44 | -7 |
| Small business | 68 | 75 | 70 | -5 |
| The church or organized religion | 36 | 42 | 37 | -5 |
| Banks | 30 | 38 | 33 | -5 |
| The U.S. Supreme Court | 38 | 40 | 36 | -4 |
| The criminal justice system | 24 | 24 | 20 | -4 |
| The military | 73 | 72 | 69 | -3 |
| Technology companies | -- | 32 | 29 | -3 |
| Organized labor | 29 | 31 | 28 | -3 |
| Newspapers | 23 | 24 | 21 | -3 |
| Television news | 18 | 18 | 16 | -2 |
| The presidency | 38 | 39 | 38 | -1 |
| Big business | 23 | 19 | 18 | -1 |
| Congress | 11 | 13 | 12 | -1 |
| The police | 53 | 48 | 51 | +3 |

GALLUP

Figure A.1 – Confidence in Institutions, Gallup, 2021

Table A.1 – Descriptive statistics

| Descriptive Statistics | % Fully Vaccinated | % Mask Feb | Infection Rt Feb | % Social Distancing | % ID Republican | % Black | Median Age | % Male | % ID Liberal | % Adults with BA | % Positive Pol Trust | Social Trust | Vaccine Acceptance | % Social Distancing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 50.00 | 47.00 | 50.00 | 50.00 |
| mean | 43.74 | 90.32 | 28.11 | 46.80 | 31.90 | 10.20 | 37.95 | 49.02 | 18.71 | 30.03 | 58.28 | 0.02 | 84.22 | 81.35 |
| sd | 8.26 | 5.13 | 11.80 | 6.84 | 6.02 | 9.48 | 2.44 | 0.79 | 5.24 | 6.18 | 9.76 | 0.79 | 4.71 | 5.46 |
| min | 28.50 | 73.68 | 5.21 | 27.29 | 15.41 | 0.40 | 30.30 | 47.50 | 11.08 | 19.60 | 28.00 | -1.43 | 74.46 | 66.50 |
| max | 62.94 | 98.16 | 62.00 | 59.91 | 45.86 | 37.40 | 44.00 | 50.90 | 33.41 | 55.40 | 77.00 | 1.71 | 94.52 | 91.60 |
| skewness | 0.29 | -0.93 | 0.41 | -0.54 | -0.34 | 1.16 | -0.20 | 0.31 | 0.58 | 1.43 | -0.32 | 0.34 | 0.09 | -0.47 |
| kurtosis | 2.26 | 3.94 | 2.97 | 3.03 | 3.65 | 3.50 | 4.23 | 2.79 | 2.70 | 6.97 | 3.74 | 2.45 | 2.31 | 3.14 |

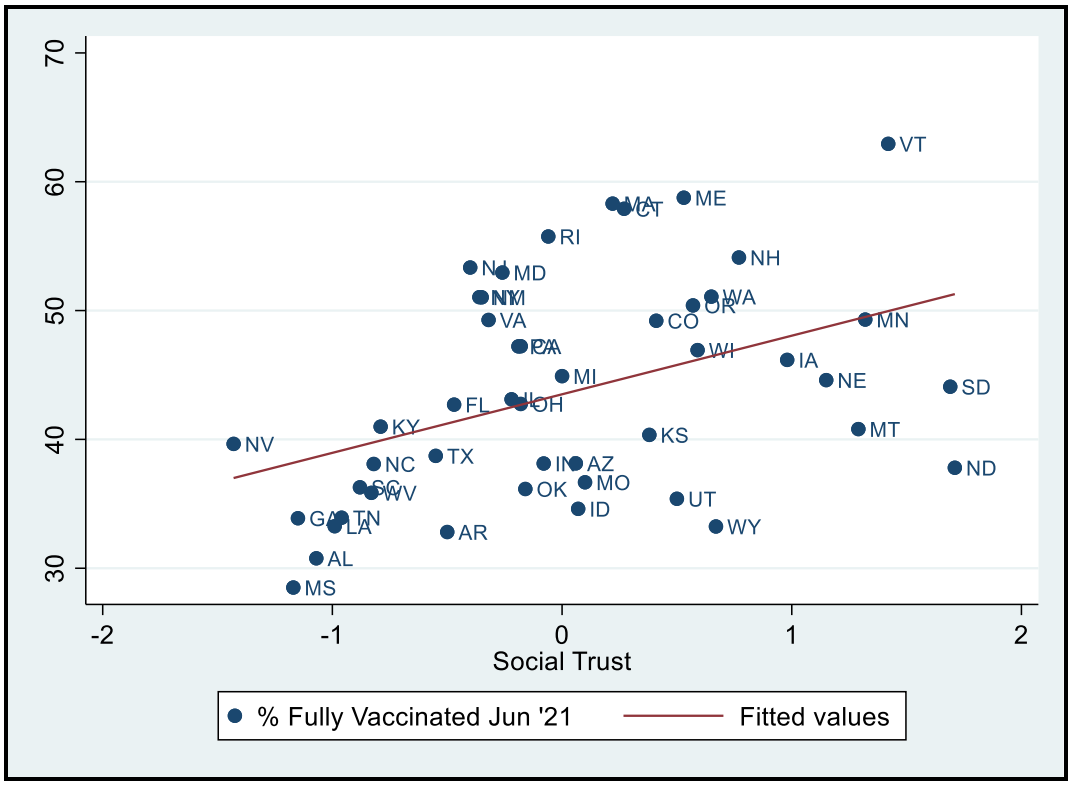



Figure A.2 – Model 1.1 scatter plot for social trust and percent fully vaccinated

Table A.2 – Model 1.2 robust standard error regression results

| VARIABLES | % Mask Compliance |
|---|---|
| Party ID | 0.210 |
| | (0.170) |
| Race | -0.190* |
| | (0.0824) |
| Age | -0.260 |
| | (0.210) |
| Sex | -2.601* |
| | (0.984) |
| Ideology | 0.681*** |
| | (0.182) |
| Education | 0.339*** |
| | (0.102) |
| %Pos Pol Trust | -0.0416 |
| | (0.0499) |
| Social Trust | -2.885*** |
| | (0.949) |
| Constant | 202.6*** |
| | (50.33) |
| Observations | 47 |
| R-squared | 0.767 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

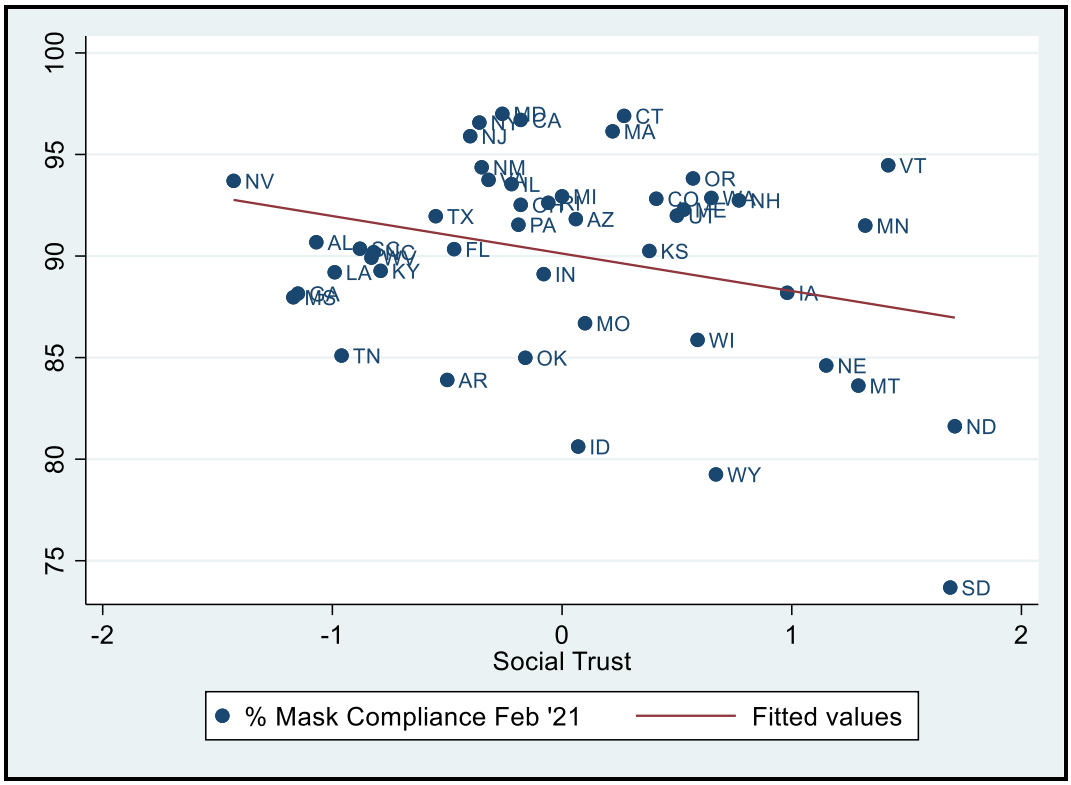



Figure A.3 – Model 1.2 scatter plot for social trust and percent wearing a mask

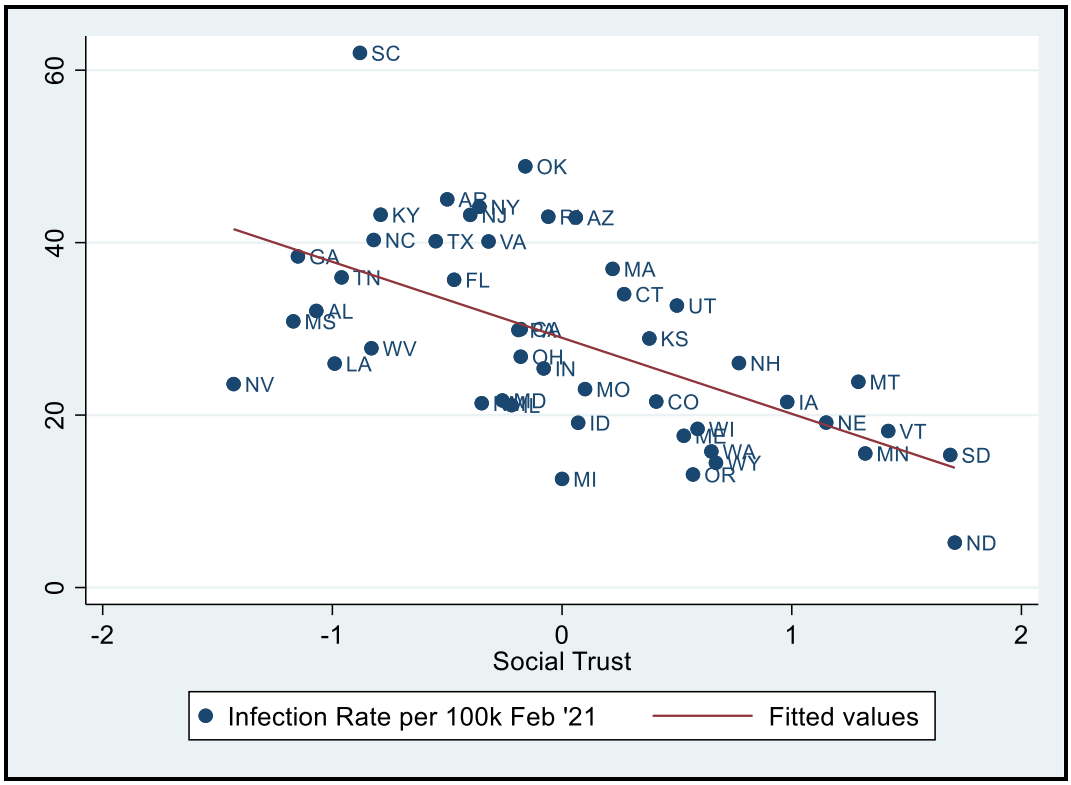



Figure A.4 – Model 1.3 scatter plot for social trust and infection rate

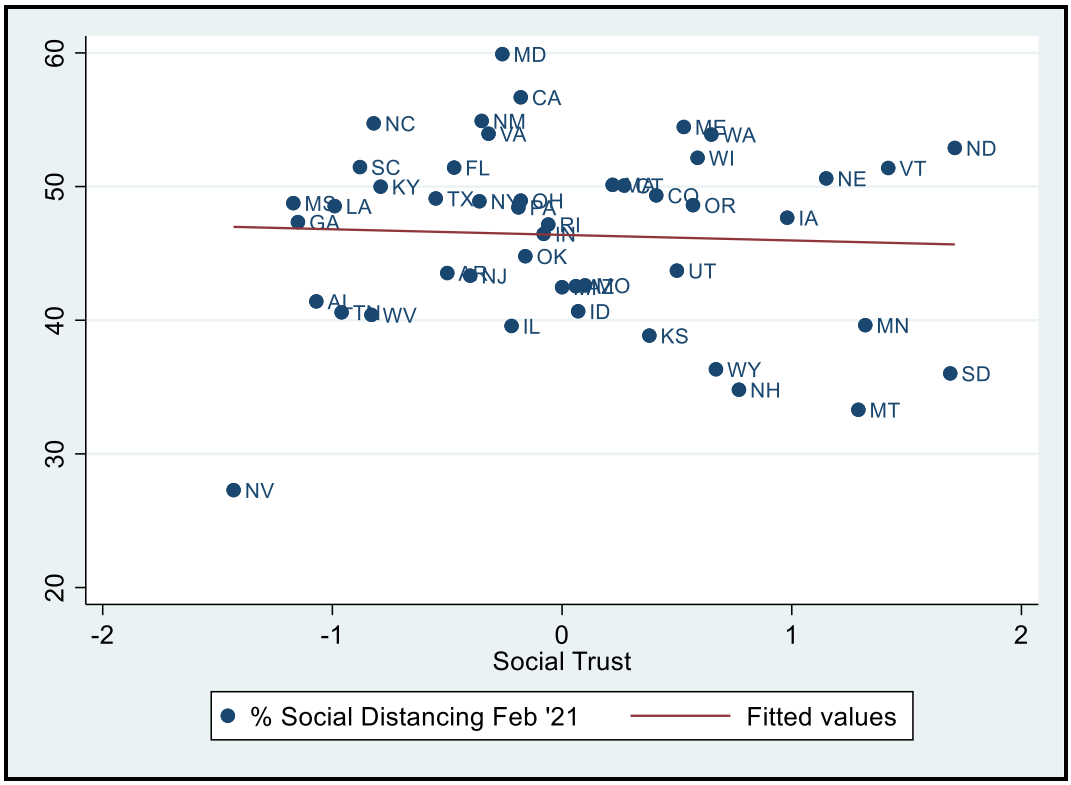



Figure A.5 – Model 1.4 scatter plot for social trust and percent social distancing

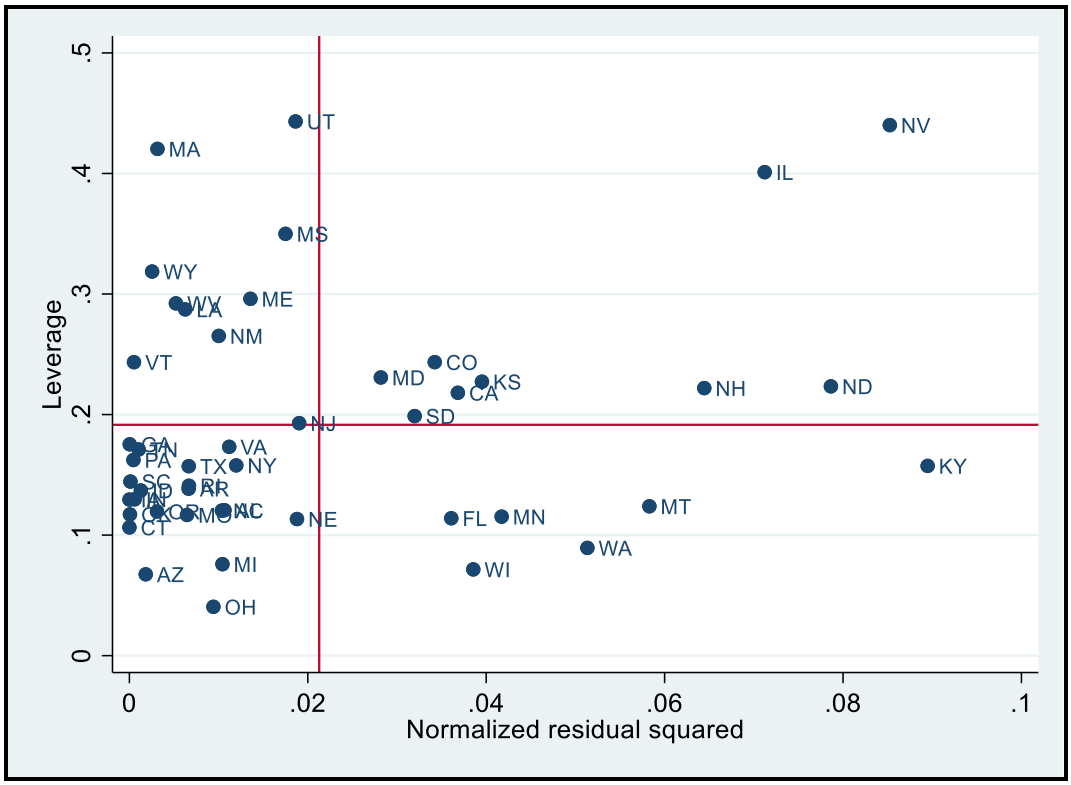



Figure A.6 – Model 1.4 scatter plot for influential observations

Table A.3 – Model 1.4 regression results with dummy variables for Illinois and Nevada

| VARIABLES | Social Distancing |
|---|---|
| Party ID | 0.386 |
| | (0.341) |
| Race | 0.0527 |
| | (0.162) |
| Age | -1.186* |
| | (0.447) |
| Sex | -3.675 |
| | (2.744) |
| Ideology | 1.112* |
| | (0.450) |
| Education | -0.246 |
| | (0.260) |
| %Pos Pol Trust | -0.197 |
| | (0.147) |
| Social Trust | 2.167 |
| | (2.006) |
| Illinois Dummy | -16.85* |
| | (6.519) |
| Nevada Dummy | -19.50*** |
| | (6.743) |
| Constant | 257.7 |
| | (138.8) |
| Observations | 47 |
| R-squared | 0.564 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

Table A.4 – Model 2.2 robust standard error regression results

| VARIABLES | Positive Political Trust |
|---|---|
| Party ID | 0.224 |
| | (0.474) |
| Race | 0.0435 |
| | (0.196) |
| Age | -0.682 |
| | (0.566) |
| Sex | 5.423* |
| | (2.238) |
| Ideology | -0.655 |
| | (0.577) |
| Education | 0.394 |
| | (0.320) |
| Constant | -188.9 |
| | (118.7) |
| Observations | 47 |
| R-squared | 0.508 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

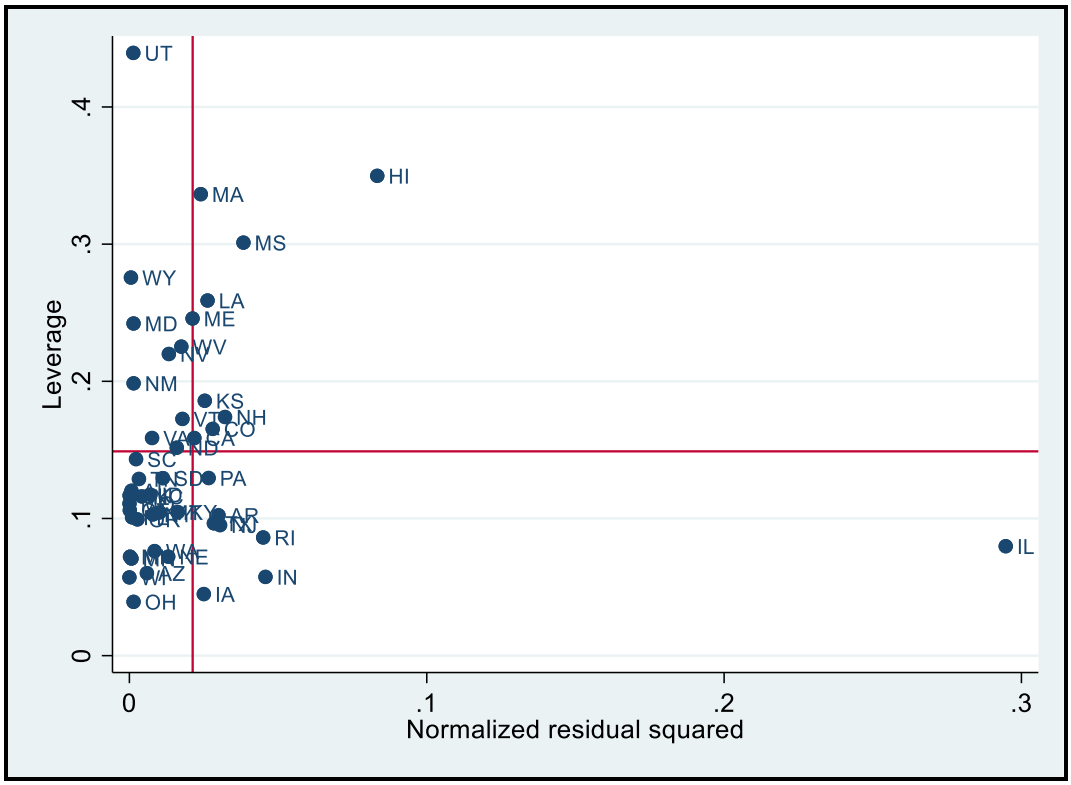



Figure A.7 – Model 2.2 scatter plot for influential observations

Table A.5 – Model 2.2 regression results with dummy variable for Hawaii

| VARIABLES | Positive Political Trust |
|---|---|
| Party ID | 0.314 |
| | (0.457) |
| Race | 0.146 |
| | (0.222) |
| Age | -0.278 |
| | (0.570) |
| Sex | 6.224* |
| | (2.947) |
| Ideology | -0.995 |
| | (0.578) |
| Education | 0.661* |
| | (0.305) |
| Hawaii Dummy | 20.82* |
| | (8.693) |
| Constant | -249.4 |
| | (154.1) |
| Observations | 47 |
| R-squared | 0.571 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

Table A.6 – Model 2.3 robust standard error regression results

| VARIABLES | Vaccine Acceptance |
|---|---|
| Party ID | 0.104 |
| | (0.148) |
| Race | -0.0858 |
| | (0.0885) |
| Age | -0.347 |
| | (0.210) |
| Sex | -2.357 |
| | (1.225) |
| Ideology | 0.557* |
| | (0.207) |
| Education | 0.423*** |
| | (0.125) |
| Constant | 187.7*** |
| | (63.36) |
| Observations | 47 |
| R-squared | 0.807 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

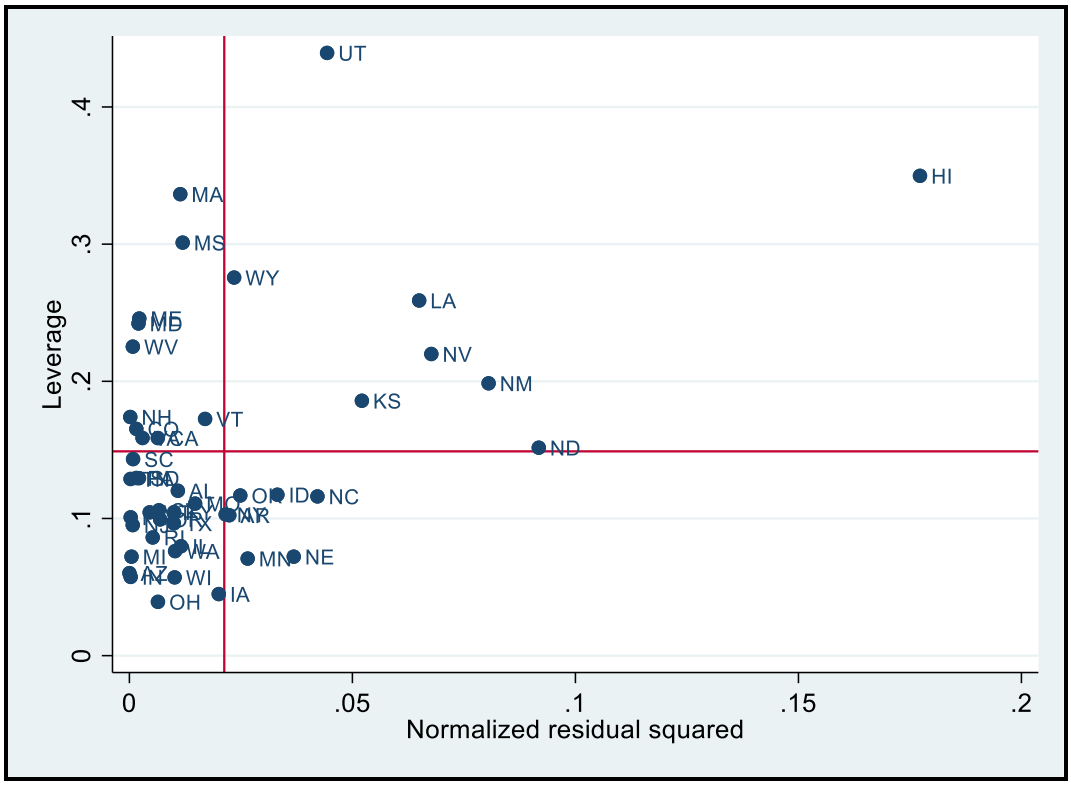



Figure A.8 – Model 2.3 scatter plot for influential observations

Table A.7 – Model 2.3 regression results with dummy variable for Hawaii

| VARIABLES | Vaccine Acceptance |
|---|---|
| Party ID | 0.0636 |
| | (0.127) |
| Race | -0.131* |
| | (0.0621) |
| Age | -0.527*** |
| | (0.159) |
| Sex | -2.714*** |
| | (0.822) |
| Ideology | 0.708*** |
| | (0.161) |
| Education | 0.304*** |
| | (0.0852) |
| Hawaii Dummy | -9.273*** |
| | (2.426) |
| Constant | 214.7*** |
| | (43.00) |
| Observations | 47 |
| R-squared | 0.860 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

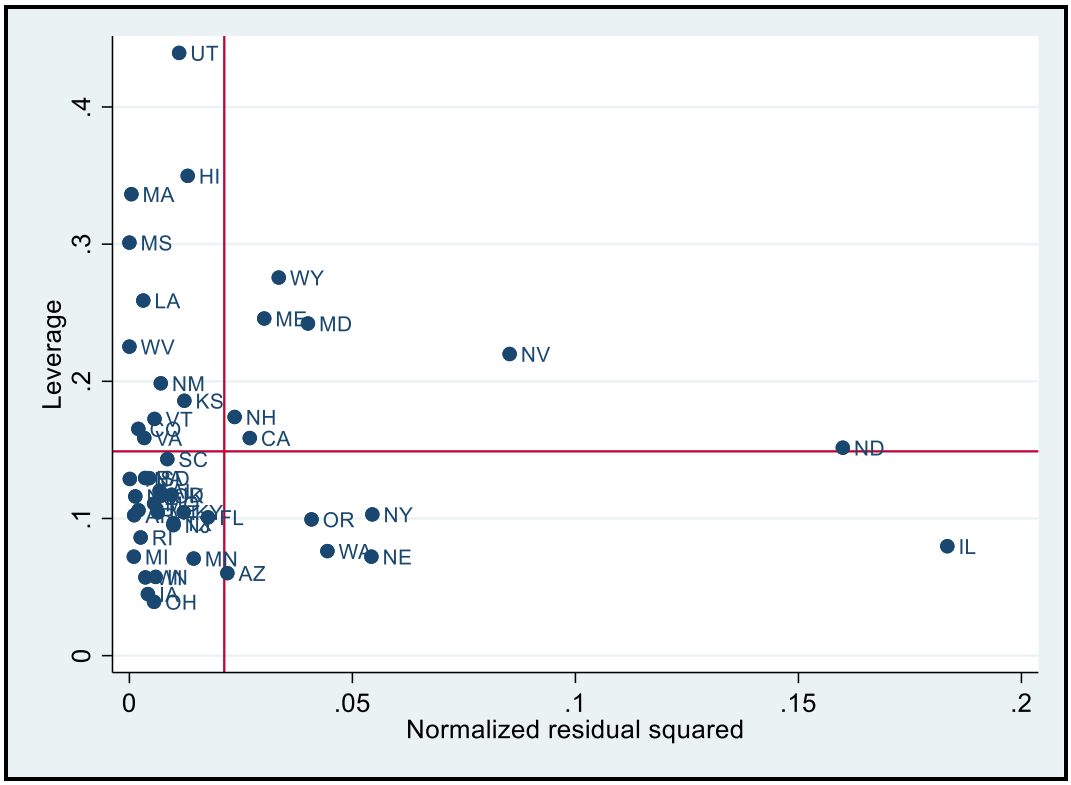



Figure A.9 – Model 2.4 scatter plot for influential observations

Table A.8 – Model 3.2 robust standard error regression results

| VARIABLES | % Social Distancing Feb '21 |
|---|---|
| Party ID | 0.547* |
| | (0.206) |
| Race | 0.155 |
| | (0.103) |
| Age | -0.259 |
| | (0.284) |
| Sex | -0.898 |
| | (2.170) |
| Ideology | 0.745* |
| | (0.303) |
| Education | 0.0244 |
| | (0.182) |
| % Positive Political Trust | -0.152*** |
| | (0.0549) |
| Social Trust | 1.693 |
| | (1.192) |
| Vaccine Acceptance | -0.141 |
| | (0.229) |
| Approve Social Distance | 1.039*** |
| | (0.110) |
| Constant | 3.195 |
| | (121.1) |
| Observations | 47 |
| R-squared | 0.835 |
| Standard errors in parentheses | |
| *** p<0.001, ** p<0.01, * p<0.05 | |

# VITA

Christopher R. Palmer was raised in the great state of Tennessee by his incredible parents. There he met the love of his life, and they were married after he joined the Air Force. Together they raised two amazing children while traveling to bases around the nation and in the United Kingdom. Chris was blessed to receive many great opportunities, and he found a passion in teaching. He earned an undergraduate degree online at Ashford University while serving as an aircraft maintenance instructor. He later decided to pursue a professional career in education after being accepted into a graduate program in Political Science. His research focus is on American politics and public opinion.