Fall 10-20-2022

Understanding the Interconnection between Public Health and Political Behaviors in a Politically Polarized Context: The Impact of Race, Political Attitudes, and Policy Factors on the US COVID-19 Pandemic Response.

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DISSERTATION

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy.

Department of Political Science
Albuquerque, New Mexico, USA

December, 2022

Dedicated to my parents: Mrs. Rebecca Mendoua, and Mr. Ferdinand Nkouaga. I could not have done this without your emotional support.

Acknowledgements

I would like to express my gratitude to all people who helped me throughout this journey.

First, I would like to express my deepest appreciation to my dissertation committee. Dr. Gabriel Raymond Sanchez served as the Chair of this committee and his help and guidance have been invaluable. Dr. Michael S. Rocca, Dr. Loren Collingwood, and Dr. Nicholas Edwardson served as wise committee members and generously provided knowledge and expertise throughout and beyond this research.

To my friends, and my siblings: Carol, Michel, Patrick, Bertrand, and Abel your patience and understanding, and emotional support are priceless.

Finally, to my wife, Kimberly Wu: your love and understanding helped me along this journey. I can never be grateful enough for your support.

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Abstract

This dissertation evaluates the interconnection between health and political behaviors in a polarized context such as the United States. The COVID-19 pandemic unveiled the current political polarization and the structural health disparities among racial communities. Using the system theory delineated by David Easton, this dissertation demonstrates that health attitudes and behaviors in the electorate can influence voting behaviors, as was the case with the 2020 US presidential election. An evaluation of the 2021 African American COVID-19 Vaccine Polls (AACVP), and the 2020 Collaborative Multiracial Postelection Survey (CMPS) demonstrates that factors such as public health compliance, trust in federal health institutions, and health policy preferences explain political behaviors such as vote choice. While public health compliance, trust in federal health institutions, and support for Medicare for all are positively related to voting for Biden, these variables are all negatively related to voting for Trump. As health attitudes/behaviors explain vote choice, political and structural

factors resulting from the power dynamics of the political system influence and shape health attitudes and behaviors. This dissertation shows that political factors such as partisanship and trust in local members of Congress can explain health behaviors such as COVID-19 vaccination uptake. Besides, policy factors such as access to healthcare and health insurance coverage are also significant predictors influencing COVID-19 vaccine uptake. Finally, this dissertation demonstrates that race-related discrimination, trauma, and policy issue help explain COVID-19 vaccine hesitancy among communities of color.

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Chapter 1

Introduction and Theoretical Background

The advent of the SARS-CoV-2 pandemic (aka COVID-19) has unveiled not only the complex interdependence (Keohane & Nye Jr, 1973) between countries in the world but also the interconnection between different sectors of public life. At the national level, decision-makers had to adapt the policymaking processes to provide public responses to the pandemic. The current pandemic has influenced aspects such as the management of the national economy, foreign policies, and the interaction between the electorate and the decision-makers. Changes due to the pandemic affecting public life certainly influenced attitudes and behaviors within the American population. Among those attitudes and behaviors, those related to politics and public health warrant further attention. Most research addressing political attitudes and behaviors take political factors such as partisanship, political culture, and accountability as the primary determinant of political attitudes (approval) or political behavior (political participation). Only a few research addresses structural determinants of health as factors explaining political attitudes and behaviors (C. J. Carpenter, 2010; D. Carpenter, 2012; J. Pacheco & Fletcher, 2015; Lerman et al., 2017). Public health is assumed to be an

outcome of the political system. Analyzing health as an outcome suggests a formal/informal relationship between the government's actions and the citizens' needs. Understanding constituents' preferences are the base for the success of any policymaking (Lupia, 2011), especially in the health sector. Political participation and public opinions help governments and political leaders to capture preferences in the electorate.

Easton (1955) with his system theory argues that the political system can be regarded as a black box where societal changes arouse demands among the constituents (social environment) and affect policy change. In that sense, the political system characterizes all the social interactions that determine the coercive allocation of values within the society (Sorzano, 1975). Inputs (values, demands, public issues...) get processed within the political system through bargaining and negotiation. They produce authoritative policy responses to maintain the status quo or alter the current context. The effect of the policy produces "outcomes" that influence the attitudes and behaviors of the constituents (social environment). If the issues (inputs or demands) are not effectively resolved, policy responses will arouse new demands from the constituents and create a new cycle in the political system.

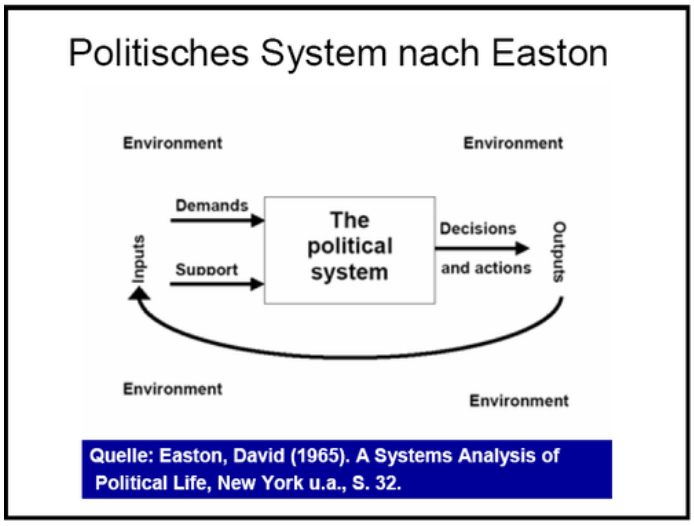

Figure 1.1: Political system (Easton, 1965).

Easton (1965) argues that political phenomena are like biological phenomena, where

actions and reactions result from causal effects. Health policies in that logic can be considered as an "output" of the political system, which is incorporated into the social environment and may cause new demands in the political system. This complex system reflects a co-constitution between the agency and the structure. While structure refers to the institutional arrangement determining the basket of goods (possible choices) in society, agency refers to micro-phenomena related to free will at the individual level (Bourdieu, 1977, 1990b; Barker, 2003).

Addressing how demands from constituents are born and shaped is an essential aspect of the system theory. While (Converse, 1964) argues that constituents base their demand on individual beliefs and rational preferences, other scholars argue that preferences in the electorate are modeled around ideological values (Feldman, 1988; Hurwitz & Peffley, 1987a,b; Herrmann et al., 1999). As it is the case with COVID-19 pandemic, public health-related issues are expressions of demands based on rational and ideological factors. Constituents' attitudes and perceived behaviors regarding the COVID-19 responses tend to have been influenced by political ideologies (Hart et al., 2020; Halpern, 2020; Bolsen & Palm, 2021).

To understand how health not only influences the power dynamic of the political system, but also is shaped and modeled by the structural forces of the political system, it is important to analyze how micro-level health attitudes and behaviors in a specific political context influence political attitudes and behaviors. Bourdieu (1990a) refers to the concept of *habitus* to explain the process through which social context, by stabilizing rules and norms (both formal and informal), shapes and models human behaviors. Through *habitus*, the structural stability of the system is maintained by accepted societal norms. Beliefs and accepted norms are functions of ideologies and political factors in society. Bourdieu (1977) argues that the concept of *habitus* describes the dynamics of action-reaction between the structure and the agency. Socially accepted norms are consolidated through socialization agents such as political party, education, race, ethnicity, and family.

Health attitudes and behaviors, in that sense, are influenced by sociopolitical dynamics. Political socialization is an essential factor that structures *habitus*. Hyman (1959) argues that " political socialization is conceptualized in terms of 3 dimensions: participation or involvement in politics, radical or conservative goals, and democratic or authoritarian forms. " This suggests that political factors such as ideology, political regime, and political culture influence human behavior and consolidate *habitus*. This dissertation addresses the interconnection between health and political behaviors in a major public health issue such as the COVID-19 pandemic. To address such kind of question, this dissertation implement a co-constitution perspective of the structure and the agency, by questoning, on one hand, the political phenomena influencing public health behaviors, and on the other hand, by evaluating how health policy feedback from the constituents help explains reported political behaviors such as vote choice.

As the COVID-19 pandemic has been an overarching event affecting many aspects of public life, governments have tried to address the pandemic most efficiently. Vaccination, for example, is the strategy that most experts, pundits, and governments have adopted worldwide, particularly in the United States, to address the pandemic. However, a significant proportion of the population worldwide, and in the United States, is still skeptical about getting the COVID-19 vaccine. Indeed, around 11% of the population in the United States is still not vaccinated.[1] Skepticism about vaccination is not the only public health issue that slows down policies implemented to ward off the pandemic. Institutional guidances intending to control the spread of COVID-19, such as mask-wearing, social distancing, self-quarantine, and others, have been negated by a significant proportion of the population. What could explain this state of affairs? Are structural and political factors influencing public health compliance by the constituents? How does the feedback loop mechanisms

[1]For more information, visit the https://ourworldindata.org/covid-vaccinations?country=USA. Last retrieved on March 10 2022.

influence the power dynamics within the political system? To answer these questions, I will address in Chapter II how public health behaviors affect the political system by analyzing the 2020 presidential election vote choice. Then, in Chapter III, I will analyze the political determinants of COVID-19 vaccination uptake. Finally, in Chapter IV, I will address the race-related factors influencing COVID-19 vaccination hesitancy. The rest of the chapter will addresses the theoretical background used throughout this dissertation.

1.1 Health as an input of the political system

Addressing health as an input of the political system implies understanding the origin of health behaviors and the factors influencing its development. This help evaluates their impact on the power dynamic within the political system. The following paragraph addresses exogenous forces (focus events) and endogenous (elite polarization) affecting health attitudes and behaviors.

1.1.1 COVID-19 pandemic through the lens of the Focus event theory

Focus event theory explains how demands get filtered out by level of salience before entering the political system. Kingdon & Stano (1984) argues that exogenous factors beyond the control of the political system are decisive in influencing demands from the constituents to the government. The COVID-19 pandemic is a good example. Facts such as social interaction between people, dynamics affecting the economy, and aspects related to political participation have been adversely influenced by the COVID-19 pandemic. Nevertheless, the pandemic was the main point on the government's agenda and political institutions such as political parties. Gunter (2005) argues that focus events are opportunities for policy entrepreneurs to move and advance new demands in the political system and break the

existing policy monopolies. Policy entrepreneurs may use narratives and symbols to increase salience and influence public attention towards a specific social issue. Baumgartner & Jones (2010) argue that attention to focus events tends to increase when advanced by influential political groups. Through influential political groups, demands from the constituents get filtered out through a process of group coalescence, where policy entrepreneurs regroup interests and preferences to build powerful advocacy coalition groups and provoke policy change. Political parties are usually the venue for policy entrepreneurs to create and organize advocacy coalition groups.

Downs (1972) observes that while focus events are decisive in altering the power dynamics within the political system, the attention given to them decreases rapidly with time. We can see how implementing public health guidance such as COVID-19 vaccination, social distancing, and mask-wearing has gradually affected the level of attention that constituents give to the salience of the pandemic. The more constituents respect and apply the public health guidance, the more attention towards the salience of the pandemic among the population tends to decrease. To understand how the salience of an issue influence the constituents' behaviors, theory such as the Purposive Belief System (PBS) addresses the psychological factors influencing constituents' attention to institutional responses.

1.1.2 Understanding health behaviors through the lens of public opinion theories: the theory of Purposive Belief System

The theory of the purposive belief system suggests that citizens are rational enough to evaluate social issues affecting their lives and to assess potential solutions likely to solve them (Page et al., 2011). Citizens' perceptions and rationales on the social issue tend to be influenced by existing political ideologies, which tend to be stable over time (Feldman, 1988; Hurwitz & Peffley, 1987a,b; Herrmann et al., 1999). Individuals use the "political predispo-

sition"(Page et al., 2011) such as political ideologies and partisanship as shortcut heuristics to understand social phenomena and make their choice. Any policies from the government that appear to negate those political predispositions are perceived as threats to individual values and beliefs. Constituents express their preferences to the government through the lens of those political predispositions. According to the purposive belief system theory, individuals construct their policy preferences based on "perceived threats" and "favored goals" regardless of the type of policy from existing political beliefs and ideologies that they incorporated through prior political socialization (Page et al., 2011). People are informed of the impact that politics have on their lives and express their preferences on politics based on held beliefs and political predispositions. Understanding existing political predisposition in society explains why the aggregation of individual preferences tends to follow coherent patterns based on known ideologies (Wolfinger & Rosenstone, 1980).

Exogenous choc, such as the COVID-19 pandemic, are threats that influence health and political behaviors. Expressed preferences on how the pandemic should be handled stem from beliefs and political predispositions that constituents have consolidated throughout their lives. Conservative ideologies, for example, are pro-status quo by favoring traditional institutions, beliefs, and values. In western countries, individual liberties, property rights, and the minimization of the role of the government are at the core of conservative ideologies (Andrew, 1998; McLean & McMillan, 2009). Conservative ideologies generally tend to be associated with right-wing political parties such as the Republican party in the United States (Vincent, 2009) and advocate for a *laissez-faire* economic policy. COVID-19 pandemic is a example of how political ideologies tint health-related preferences of the constituents in the United States. A significant part of the population tends to refute any restrictive policies affecting individuals' liberties such as mask-wearing, social distancing... Kemmelmeier & Jami (2021) for example argue that conservatives have been associated with lower rate mask-wearing and thus less likely to follow similar guidelines. This observation suggests

that the way constituents address public health guidance is a function of cultural beliefs and political predispositions. Besides, as public health guidance such as social distancing affected the functioning of the economy by restricting social transactions in the market, such public health guidelines are perceived as a threat by conservatives (Simonov et al., 2020). As culture and political predisposition are determinant factors influencing health attitudes/behaviors and their impact on the power dynamic within the political system, other structural factors related to life experience, such as existing health disparities also influence health-related preferences.

1.1.3 Communication coverage, priming, and public opinion: the case of health disparities in the US

The question of health disparities and how they relate to politics have been intensively evaluated (Bloche, 2004; Steinbrook, 2004; Webb et al., 2011; Rodriguez, 2018). Social-economic status and race tend to be related to health status and access to health care. Poverty appears to be negatively related to access to health care (Kosa et al., 1969; Haan et al., 1987; Wagstaff, 2002; DeNavas-Walt, 2010). As minorities in the United States are concentrated in lower classes (Reeves et al., 2016; Rokeach & Parker, 1970), communities of color are more affected by health disparities than White communities. The salience of health disparity varies across races and may explain divergences in policy preferences in public health. Demands from the social environment for specific policies function not only on held beliefs and political predisposition but also by life experience, which is shaped by social-economic status and race. When beliefs about health status are centered more around access and behaviors than social-economic status and race, people are more likely to favor conservative health policy (Robert et al., 2008). On the other hand, when people's beliefs about health status are grounded on social-economic status and race, people are more likely

to favor a liberal type of health policy.

As principal sources of information, media influence people's attitudes and behavior. Information diffused by media can either consolidate prior held beliefs or political predispositions or weaken them. Lazarsfeld et al. (1954) observe that voters tend to present confirmatory biases when exposed to media. Voters tend to pay more attention to media reinforcing their prior beliefs than those negating them. As media are required by the law to be transparent and impartial (Gunther & Mughan, 2000), media in overall and television media, in particular, are perceived by the electorate as a neutral source of information compared to political parties. However, the media shape and influence voters' preferences through the process of priming. Priming can be regarded as a process where media suggest a ranking in terms of issue-salience to the audience (Pan & Kosicki, 1997). Through priming, media filter issues that the electorate should pay attention to evaluate the government and the dominant political party ruling the government. Iyengar et al. (1982) contends that the "priming effect" of media is negatively related to political knowledge. Voters with low political knowledge will use media as a shortcut heuristic to evaluate the government action and the ruling political party in the government. Scheufele & Tewksbury (2007) go further by arguing that media rank the policy issues in terms of salience and suggest benchmarks to evaluate the government performance. Policy issues presented as highly salient by the media will influence voters' perceptions of the government's overall performance. In that logic, the government that failed on media-primed policy issues is more likely to receive a bad evaluation from the electorate despite its good performance in other sectors.

Niederdeppe et al. (2013) observe that communication about health disparities affects public opinion on health policies. People construct and consolidate beliefs on health disparities based on the state of news coverage on the issue and their ideological predisposition. Barrington (2007) observes that by presenting health as the only consequence of personal behaviors, news coverage and commercials reinforced conservative beliefs on health policy.

Gilbert & Malone (1995) argue that people tend to have a "correspondence bias" in health perceptions and behaviors. Specifically, people tend to link bad health outcomes to others due to their behaviors. While such analyses are relevant, social-economic status certainly influences how people handle their health. While healthy behavior should be promoted, it is also essential to address the social-economic determinants of health disparities (Viswanath & Emmons, 2006). Policy intending to improve the quality of care may be preferred by the majority, while policy intending to address health disparities may be favored by the minorities in the population. Adler (2007) argues that when voter turnout is dominated by people from the upper class and thus with better health status, the salience of health disparities is low, and the likelihood of health policy addressing disparities in the population is lowered.

Existing discrimination, such as medical racism in the social environment, affects the functioning of the political system and the response to public health issues. Scholars such as Chae et al. (2011); M. Woo et al. (2011), and Sternthal et al. (2011) demonstrate the existence of structural inequality in terms of supplies of health goods and services such as insurance coverage, access to health providers, and quality of health services across racial groups in the United States. As race is treated as a biological construct (Boyle, 1970; Keil et al., 1977; Gardner Jr et al., 1984), researchers such as A. J. Schulz et al. (2002); Massey (2004), and D. R. Williams & Sternthal (2010) show that African Americans and other communities of colors are less likely to receive quality health services than their White counterparts. Increasing the level of information about health disparities in the public affect preferences on health-related policies. Framing and narratives are potent instruments for influencing beliefs about health behaviors and expressed preferences on health policy. Niederdeppe et al. (2008) find that framing and narratives raising public awareness of social determinants of health influence beliefs about health policy and politics in the electorate. As people become increasingly aware of the importance of non-medical determinants of health, their beliefs, perceptions, and preferences on health policy and politics evolve (Wilkinson & Marmot,

2003). Following the logic expressed by Niederdeppe et al. (2008), it appears that racial health disparities are results of social constructs that stem from racial categorization in society. The following paragraph elaborates on the impact of categorization and social construction in health-related policymaking process.

1.1.4 Social Construction, categorization, and the policymaking process

The policymaking process is an intersubjective process considering political facts, societal values, and norms. Stone (1997) with her concept of "policy paradox" argues that the policymaking process is not linear and entirely rational. Bargaining and negotiation are principal characteristics of the policymaking process. The case with the COVID-19 pandemic is evident. There was no unanimous consensus about handling the issue at the federal and state levels. The "struggle over ideas" (Stone, 1997) exists at each step of the policymaking process, from the agenda-setting to the evaluation stage. Every stakeholder has an essential role in the policymaking process. Constituents, for example, have a significant influence in the policymaking because of their voting power and other type political participation such as lobbying and civil protests. Policies and politics are interrelated in the policymaking process; decision-makers, to ensure to be reelected, need to strategically evaluate and manage the values and preferences of their constituents. This may explain why decision-makers often use social construction to implement distributive policy. Narratives such as "underserved" for example, are used by decision-makers to categrorize groups within the population. Race usually serves as the primary identifier to categorize groups in society. The 2020 US presidential election demonstrates how both the Democrat and the Republican party implemented race-based electioneering.

Stone (1997) argues that decision-makers need to categorize constituents to implement

constituent-based policy. Starting with the assumption that decision-makers are reelection seekers (Mayhew, [1974] 2004), policymakers need to politicize values and prioritize those values that maximize their chances of being elected/re-elected.[2] To do that, decision-makers need to categorize their constituents based on those values. While categorization is not inherently racialized, there is a strong correlation between race and social-economic status (L. H. Reyes & Stanic, 1988), with communities of color more likely to be in lower socioeconomic classes than white communities. Political parties, for example, to garner votes from specific social groups strive to establish reputations in specific policy areas. The Democratic party, for example, is well known to favor affirmative-action types of policy as well as programs promoting diversity and inclusion in the public sector (M. A. Craig & Richeson, 2014). The fact that Black communities tend to vote for the Democratic party systematically might be a result of such strategies implemented by the Democratic party (Cameron et al., 1996).

The 2020 presidential election demonstrates how categorization can be a powerful electioneering tool. Biden garnered a large pool of black voters by targeting Blacks and communities of color in his narrative. Social construction and categorization policies are forms of "cost/benefit" analysis where political entrepreneurs maximize their chance to be elected/reelected by implementing constituents-based policy. As health policy preferences have been a significant factor influencing the power dynamics of the political system notable during the 2020 US presidential election, institutional responses to public health issues tend to influence also constituents' health attitudes and behaviors.

[2]Mayhew ([1974] 2004) assuming that members of Congress are reelection seekers, argues that members engage in three activities to increase their chances of reelection: advertising, positions taking, and credit claiming. Through advertising, members of Congress consolidate their image and contact with constituents by making frequent trips home. Position-taking refers to the fact that members seek to take action that will please their constituents. Credit taking refers to the fact that members of Congress take credit for any distributive policy or pork-barrel benefit gained by their constituencies.

1.2 Health as an output of the political system

With a high contamination rate and adverse effects on human immunity, COVID-19 is not only a significant public health issue but also a significant economic and political issue. Chauhan et al. (2021) argue that with pervasive issues such as COVID-19, it is imperative to elaborate strategies that limit the virus's expansion and adverse social impact. Simon (1976) in addressing the determinants of the decision-making process argues that absolute rationality (substantive rationality) is a utopia. Decision-makers are constrained not only by available information but also by time. Instead of substantive rationality, decision-makers implement procedural rationality, which can be regarded as the decision that is good enough to solve a social issue. Besides, other political factors affect the decision-making process and constituents' responses. Polarization appears to be a significant factor influencing the policymaking process.

1.2.1 Elite Polarization and public opinion in the health sector in the US

Political parties have been striving to establish clear boundaries between their programs and policy proposals to differentiate their agenda through the left-right ideological spectrum. Aldrich & Freeze (2011) argues that political parties' elite continuously tries to label their party with specific policy preferences, especially in salient topics such as health care management, abortion law, gun policies...As ideologies have become more connected to political parties, with Democrats more likely to be Liberals and Republicans more likely to be conservative (Abramson et al., 2011; Grynaviski, 2010), political parties' elites can establish an evident reputation for their parties in terms of policy preferences. By promoting policy-based reputations, political leaders signal to the electorate their policy preferences. Representatives from the same states, different political parties, and the same constituents

tend to express different policy-based preferences. Grofman et al. (1990) observe that there has been an increase in the ideological gap between representatives from different political parties. This gap has been increasing in the last fifth decades.[3] This suggest political elites' motivation go beyond Mayhew ([1974] 2004)'s reelection-seeking goal to incorporate more Fenno (1973)'s policy preference goals.

As the elite's polarization coupled with the desire for political leaders to win elections influence attitudes and behaviors among the electorate, understanding the election structure is another important factor explaining the interaction between the candidates and the electorates. The case of activists and primary voters is a good example. While most voters in the general election are not sophisticated enough to clearly distinguish left to right political ideology (Converse, 1964), political activists tend to understand more the differentiation between liberal and conservative ideology and establish their ideological preferences. Aldrich (1983) argues that activists and voters involved in primary elections tend to have more polarized views than the average voter. Although, voters are increasingly able to perceive the difference between parties in terms of ideological preferences (eg. With the perception in the electorate that Democrats are more likely to be liberals than Republicans in: Abramowitz & Saunders, 2005), winning primaries implies working strategically with activists that tend to have extreme ideological viewpoints. As elite polarization tends to be acknowledged by the electorate (Aldrich & Freeze, 2011), activists influence not only elite polarization but also polarization among the electorate.

The current pandemic is an excellent example of how elite polarization affected public policy preference among the electorate regarding managing the pandemic. Hagen et al. (2022), in analyzing COVID-19 vaccine acceptance in the United States, argue that activists and elite polarization have tremendously influenced vaccine acceptance among the electorate.

[3]Check out Pew Research Center: The Polarization in today's Congress has roots that go back decades. Last retrieved 07/23/2022.

Specifically, COVID-19 anti-vaccine have been intensively active on platforms such as Twitter and have influenced their followers and political leaders. Block Jr et al. (2022) go further by arguing that by moving from the left to right on the political ideology spectrum, COVID-19 vaccine acceptance decrease. This shows that liberals are more likely to accept the COVID-19 vaccine than their counterpart conservatives. Members of Congress, for example, have displayed contradictory preferences in terms of the management of the COVID-19 pandemic. J. Green et al. (2020) find that Democrats have been discussing more the internal management of COVID-19 and fostered the awareness of health-related risks associated with the pandemic. At the same time, Republican members of Congress focused more on China and the opening of the economy. The pandemic that happened on the eve of the 2020 US presidential election has undoubtedly affected the polarization among the electorate regarding managing the pandemic. Campaign strategies implemented by the main political parties and their candidates revolved primarily around the question of the management of the pandemic.

1.2.2 Political event as determinant factors explaining health behaviors: the specificity of the 2020 presidential election

The 2020 presidential election has been one of the most contentious elections in the United States because of aspects such as polarization, health disparities, and significant public health issues related to the COVID-19 pandemic. These events seem to have affected voters' behavior. According to AP News, the COVID-19 pandemic has had a detrimental effect on Donald Trump's reelection. Indeed, polls done by The Associated Press-NORC Center for Public Affairs Research suggested that a few weeks before the election, most Americans highly criticized the way Donald Trump handled the pandemic during his presidency.[4]

[4]Get more information on AP NEWS:AP-NORC poll: Americans critical of Trump handling of virusLast retrieved 12/5/2021 at 2:09 pm MDT.

Specifically, the survey suggests that overall, 54% of Americans disapproved of how Donald Trump handled the COVID-19 pandemic. However, there are sharp variations in presidential approval across political party affiliations. In comparison, 84% of Democrats disapproved of how Trump managed the pandemic, and only 21% of Republicans disapproved of his approach. This suggests that partisanship and political ideology have influenced perceptions about the management of public health issues.

The COVID-19 public health pandemic unveiled other structural issues in the United States. Social issues such as health disparities and structural racism appeared to have been exacerbated by the pandemic. Bitecofer (2020) observes that the desire by the Trump administration to subordinate the COVID-19 public health concern to the efforts to reopen the economy complicated the pandemic management. Political narratives using images and cues have influenced the public health behavior of the electorate. The politicization of mask-wearing by the Trump administration adversely affected the response of some Americans vis-à-vis the public health guidance. By openly refusing to wear face masks in many public events, the Trump administration cues their electorate to distrust health institutions such as the CDC and implicitly boycott public health guidance. This politicization of public health guidance seems to have been detrimental to the Republican party, leading to the loss of the presidential election and the majority of the Senate.

1.2.3 Political Polarization: the effect of political parties, political leaders, and media

Fiorina (2017) observes that the polarization in the US is characterized by a high level of affection between the members and the party, but also an increase of distrust between political parties. This distrust has been observed during the institutional response to the COVID-19 pandemic. According to the YouGov 2020[5], a high percentage of Republicans considered

[5]Check out this link: "Reuters: Misinformation between Democrats and Republicans."

the COVID-19 pandemic to be overestimated by the Democrats and Liberal mainstream media. President Donald Trump categorized liberal media as "fake news," demonstrating the continuity of political polarization in the media realm (KhudaBukhsh et al., 2021).

The effect of intraparty fragmentation has diminished because of the hyper-political polarization observed during the 2020 presidential election. The influence of progressists in the Democrat party has been downplayed by the increased polarization between Democrats and Republicans. Bitecofer (2020) observes that despite the internal fragmentation in the Democrat party, the party manage to unite its leaders to support Biden during the 2020 presidential election.

Media and political elites play an essential role in the observed polarization in the United States. Parties candidates use media, particularly television coverage, to advance and polarize policy debates (Mughan & Aaldering, 2017). Parties' candidates take advantage of televised debates to present their programs and to criticize and invalidate that of their opponents. The televised political debate between party leaders helps the electorate evaluate the candidate and its political party (Druckman, 2003). Gidengil (2011) finds that televised political debates are influential in explaining vote choice among unsophisticated voters. Voters with low political knowledge are highly likely to make their vote choice based on a televised political debate between parties' candidates. The level of charisma as delineated by Weber (1978) during televised debates significantly affects vote choice among unsophisticated voters. The more a candidate appears charismatic during the debate, the more likely he/she is to receive votes from unsophisticated voters. Leaders with high perceived charisma can also influence voters' attitudes and behaviors regarding salient policy issues (E. A. Williams et al., 2009).

Through framing, media are potent determinants of political attitudes and voting behaviors. Framing is the process of constructing narratives to convey specific meaning and alter the targeted audience's behavior. Entman (1993) argues that framing is "a way to describe

the power of communicating text." Media framing during the pandemic caused support and hesitancy toward public health guidance and mandates. While liberal mainstream media such as CNN and MSNBC advocated for public health guidance, other conservative media such as Fox News and OAN have been downplaying the relevance of the public health mandate in addressing the pandemic.

Hart et al. (2020) find that the polarization in COVID-19 response strategies has been exacerbated by news coverage through framing. This is evident in the United States, which registered over one-fourth of the number of deaths worldwide due to COVID-19. Polarization has been observed in how media present scientific evidence. Hart et al. (2020) demonstrate that political elites have been more conspicuous in news coverage regarding the management of the COVID-19 response than scientists. Van der Linden et al. (2021) point out the blooming of conspiracy theories, especially among conservative media such as Fox News and News Max, intending to undermine the validity of the CDC mandates for social distancing and mask-wearing.

These discrepancies among mainstream media demonstrate the deep divide between conservatives and liberals about managing the pandemic in the United States (Milligan, 2020). For example, the rally around the flag theory suggests that governmental support increases in times of crisis. Constituents tend to be more flexible in lowering their liberties for the country's greater interest. In that logic, one could argue that ideologies and partisanship polarization tend to disappear in times of conflict (Mueller, 1970). However, the COVID-19 pandemic does not fit into the rally around the flag theory. On the contrary, the pandemic seems to have exacerbated the ideological and partisanship divide in the United States (Krishnamurthi & Salib, 2020). Events such as the Black Live Matter protests and January 6, 2021, and the US Capitol attack are expressions of political tension surrounding the COVID-19 pandemic (Scher, 2020). Besides, vaccine hesitancy is an excellent example, demonstrating how political polarization has affected public health behavior, notably with some regions in

the United States reporting more COVID-19 vaccine hesitancy rates than others (Southern states). Understanding the structural determinants of vaccination acceptance in the United States involves addressing tools used by the political system that influence the policymaking process.

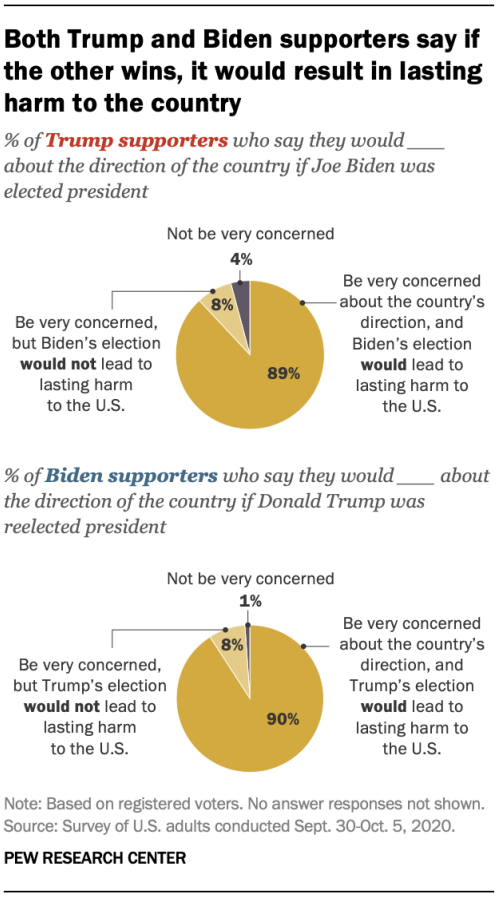

Figure 1.2: polarization among the electorate during the 2020 presidential election

1.2.4 Framing and the policymaking process through the lens of the Narrative Policy Framework

The Narrative Policy Framework, as developed by researchers such as M. D. Jones & McBeth (2010), Shanahan et al. (2018), emphasizes the impact of language and narratives in shaping attitudes and behaviors among the electorate. Political leaders and political en-

trepreneurs use narratives not only to move their political preferences but also to maintain their position. The COVID-19 response, as implemented in the US and worldwide, is a good example. Narratives and images encouraging respect for public health guidance, such as social distancing, mask-wearing, and vaccination, have significantly influenced public acceptance. For example, social distancing has been regarded as the best way to protect families and communities. Understanding narratives is vital because it helps decision-makers advance policies and gets more information about electorates' preferences.

Decision-makers in the policymaking process need to consider the measurement of expressed preferences and those of actual preferences. Understanding preferences help shape general and specific policies for targeted groups. Targeted groups refer to the constituents to whom a policy is directed. K. B. Smith & Larimer (2018) observe that language style and narratives influence policy perceptions. Language and narratives are connected with the targeted population's existing social norms and values. The more the language and narratives differ from social norms and values, the less likely the policy will succeed. Conversely, the policy is more likely to succeed when language and narratives match existing social values and norms. Edelman (1964) argues that symbols, when politicized are decisive in shaping reality. This is evident with the politicization of the COVID-19 vaccination campaign. While Liberals have presented vaccination as the best strategy to return to normal, Conservatives emphasized the norms of free will and personal liberties. When social facts are politicized, relativity becomes a rule of thumb. The existence of framing in politics makes Edelman & Mitofsky (1990) argue that narratives in politics are a "political spectacle" designed to favor some viewpoints over others.

1.3 Dissertation data source

1.3.1 African American COVID-19 Vaccine Poll (AACVP)

To analyze and evaluate the relationships addressed above, I use data from the 2021 African American COVID-19 Vaccine pool, which is a survey designed and implemented by the African American Research Collaborative (African American Research Collaborative, 2021). The African American Research Collaborative Team is an association of researchers from various backgrounds and races, designing and implementing a "national representative sample across race and ethnicity with large respondent bases of Black, Latino, Asian American and Pacific Islander, Native American and White populations." Overall their COVID-19 Vaccine pool sample comprises 12,887 adults interviewed nationally from May 7, 2021, to July 7, 2021. "The survey was implemented with a mix of phone and online lists that are nationally representative of each racial group. Overall, 31% completed the survey on the phone and 69% online. Phone sample included both cell-only households as well as those with landlines." [6]

"The American COVID-19 Vaccine Poll is a partnership between the African American Research Collaborative and The Commonwealth Fund. In addition, the Robert Wood Johnson Foundation supported an expansion of the poll in the Native American community, and the W.K. Kellogg Foundation supported expansion in New Mexico" (African American Research Collaborative, 2021). The survey was designed by an experienced team that has successfully implemented large survey projects, notably in 2016, 2018, and 2020. The methods used in the surveys are "mixed-mode randomized stratified sample that offers respondents the opportunity to be interviewed by live interviewer-assisted cell phone or landline phone, text-to-web, email invitation, and panel listed sample self-administered online survey" (African American Research Collaborative, 2021). This approach is optimal in limiting

[6] Check out: "African American COVID-19 Vaccine pool."

missing responses from participants (H. Z. Wong et al., 2021). In addition, this design would improve the quality of responses by giving more options to the respondents (Lynn, 2020). Another important aspect of using a mix-mode randomized stratified survey is the minimization of non-coverage bias (Sala & Lillini, 2014). This validate the survey as representative of the social-demographic characteristics of the actual population.

To ensure the efficiency of possible statistical inference drawn from the sample, the designers and investigators of the survey implemented a post-stratification weight with ranking algorithms by race based on the 2019 American Community Survey (ACS) census estimates. This methodology has proven to be more efficient and effective for statistical analysis and inference compared to ordinary random sampling (MacEachern et al., 2004; Zamanzade & Vock, 2018). Post-stratification weight applied to ACS helped to correct demographic deviation between the sample and the population (Callaghan et al., 2020).

To ensure that the sample has a significant number of minorities, researchers from the African American Research Collaborative relied on "pre-stratification quotas." They ensured that the randomness of the interview selection was not violated. Pre-stratified randomization was also implemented by the designer and principal investigators of the survey to maximize the representation of minorities in the sample (Lennon et al., 2022).

Survey respondents were asked about their perception of the COVID-19 vaccine implementation in the United States. Questions related to vaccine uptake and vaccine hesitancy are discussed as dependent variables, respectively, in chapters 3 & 4. The survey also addresses the question related to the political climate surrounding the COVID-19 response policymaking process. Vote choice during the 2020 presidential election is discussed in the second chapter. Overall, the question addressed in the survey intends to improve our comprehension of the socio-cultural and political factors influencing vaccine uptakes and hesitancy.

1.3.2 Collaborative Multi-Racial Post-Election Survey (CMPS)

The Collaborative Multi-Racial Post-Election Survey (CMPS) is the second data source used in this dissertation. This UCLA survey is a well-known survey addressing policy and political attitudes in the electorate, specifically among racial groups in the United States. The 2020 CMPS sample is about 15000 respondents. With such a high sample, the CMPS is one of the best surveys used for sociopolitical analysis. In addition, the sample has a significant proportion of Blacks, Latinos, and Whites respondents, which allows for advanced racial comparison in terms of policy preferences. Besides, contrary to the AACVP, the CMPS allows controlling for registered voters, which is required for political participation-related research. The sampling methodology is similar to the AACVP assuring the sample's representativeness.

Chapter 2

Health attitude and behavior as Input: Analysis of the relationship between Public health attitudes and vote choice during the 2020 presidential election

While most research in health politics (Heidenheimer, 1973; Pollitt, 1993; Navarro et al., 2006; Ostrow & Adams, 2012) considers health behavior as an output of the political system, this chapter intends to address health behavior as an input. Easton (1965) defines the political system as a "system of interaction in any society through which binding or authoritative allocations are made." Contrary to a stasis approach, analyzing questions related to health politics through the lens of the political system offers a window to understand the dynamics of policy change (Almond, 1965).

System theory applied to political science helps to clarify the process of political devel-

opment leading to policy change. Parsons (1980) sees systems in social science as complex configurations where institutions, organizations, and social groups interact functionally and assure the system's stability. Spencer (1882) see a system as a biological body where each component behaves as an organ to maintain the system's overall stability. This suggests an interdependence between the components of the system but also an existing equilibrium. Specialization and the division of labor are at the core of any social system. Any changes affecting the division of labor and thus the equilibrium of the system are said to be "dysfunctional," while any operation maintaining the equilibrium of the system is said to be "functional" (Almond, 1965). The political structures and institutions vested with an authoritative power of resources and value allocation are core organs of the system. Besides, organization and social groups such as political parties, interest groups, mainstream media, and racial and ethnics group are organs influencing the political system through diverse forms of political participation, such as lobbying (interest groups), gatekeeping (political parties), voting blocks (race and ethnic groups), priming and framing (media).

Understanding public health within the spectrum of the political system allows for identifying factors that affect policy change in health politics. The 2020 presidential election has been a peculiar election not only because of the advent of the COVID-19 pandemic but also because of the loss of the incumbent candidate after his first term (Blood & Riccardi, 2020). This election also had one of the highest voter turnouts in American politics since 1900, with more than 66% participation of the total eligible voters. Voting is one of the most critical measures of political participation. The 2020 presidential election unveiled politics' importance in shaping voters' attitudes and behaviors. By voting in a high percentage, voters acknowledged their capacities to influence change in the country (McDonald, 2020). Despite social restrictions caused by the COVID-19 pandemic, voters used various strategies to ensure their votes were counted. Mail-in voting is one aspect that significantly affected the political participation of the population during the 2020 presidential election. Besides,

early voting during the 2020 presidential election broke a new record with about 110 million votes. This record in early voting is the result of implementing mail-in voting.

This chapter focus on vote choice during the 2020 US presidential election. The defeat of President Donald Trump during the 2020 presidential election after his first term revealed changes in the power dynamic within the political system. Indeed aspects such as "incumbent advantage" in political elections in the US suggest that incumbents have higher chances of getting reelected in elections than non-incumbents. Mayhew (2008) in analyzing whether the incumbency advantage can be applied to the incumbent president in presidential elections, find that the incumbent party loss is more pronounced when the candidate at the presidential election is not the incumbent president. Peskowitz (2019) and Ansolabehere et al. (2007) argue that incumbents are more likely to get reelected because of factors such as name recognition (they do not need to advertise their name as the constituents already know them), information and government resources, and party financial support. With structural advantages that incumbents have compared to their competitors, what could explain the defeat of President Trump during the 2020 presidential election? While some research has been done addressing aspects such as negative rhetoric theory (Ross & Caldwell, 2020), this chapter analyzes the public health cues that influenced voters' choices during the election. Specifically, the chapter addresses whether political cues related to health politics and policies by Donald Trump can be associated with the 2020 presidential election outcome. In that sense, I analyze whether aspects such as public health compliance and trust in federal health institutions help explain vote choice during the 2020 US presidential election.

2.1 Background

Questions related to health policy were at the core of the debate during the 2020 US presidential election. Access to health care during a major pandemic is salient (Galea et al., 2020).

Health politics have been an essential component on the agenda of both Democrats and Republicans, and the responses to COVID-19 have only reinforced the political divide between the two parties. The primary debate in health politics and policy in the US remains between the proponents of universal coverage and supporters of non-universal coverage. Health reforms have been implemented to better the quality of the health care system in the United States. The principal challenge is a reform in health care that will make America closer to universal health coverage without causing state and federal budget deficits.

The system theory as developed by Easton (1955, 1965, 1981) is a useful modelization of the political system placing demands from the social environment at the beginning of the policymaking process. Demands can be expressed under different forms of political participation, such as voting out, lobbying, and political association. Other demands imply support from the social environment to decision centers within the political system. Supports can be voting in, taxes payment, campaign finance, institutional compliance... Decision centers process demands and support from the social environment and allocate resources and values affecting the social environment (the constituents). Inputs (demands and supports) generated from the social environment get processed through decision centers in the political system that produce outputs (distribution and redistribution of values and resources) which can cause new demands by feedback loops relaunching the cycle.

Learning is an essential component of the system theory. Feedback from the social environment can agitate the power dynamics within the political system and lead to policy change. D. A. Crow et al. (2018) argues that crises create and consolidate intra-group learning in the decision center. The fact that information is fragmented makes the learning process an unavoidable component of policy change (Moynihan, 2008). However, Stern (1997) argues that politicizing policy issues undercuts the learning process. For example, the COVID-19 pandemic in the United States has been politicized and used by both Democrats and Republicans during the election campaign for the 2020 US presidential election. J. Green

et al. (2020) find that Democrats perceived the COVID-19 pandemic as the main issue that should be primary on the executive's agenda, while Republicans emphasized saving the national economy. To understand the relevance of the system theory in American politics, the following sections address the dynamics of the decision-making process of vital American institutions such as the executive and legislative branches.

2.1.1 Power structure and the dynamics of decision-making process

The balance of power coupled with the complexity of the United States Congress explains the difficulty of passing major reform in the health sector. When the power dynamic within the political system is fragmented, only negotiation, bargaining, and compromise are keys to a smooth policymaking process. Allison (1971) argues that the American political system is based on consensus-building, where conflicting preferences and interests oppose each other. W. A. Rosenbaum (1985) observes that incrementalism is the rule in a fragmented power structure. Decision-makers tend to opt for "satisficing" decisions that can be defined as the sub-optimal decision for the constituents that nonetheless are perceived to be good enough in the eyes of the decision-makers (Simon, 1976). Major reforms within the political system tend to be punctuated equilibrium. That characterizes dramatic or non-incremental changes affecting the political system's power dynamic and policy monopoly. Major health reforms such as the Social Security Act, Medicare and Medicaid Act, and the Affordable Care Act are examples of punctuated equilibrium (Baumgartner & Jones, 2010; Boushey, 2012; Morone, 2013).

A unified power structure (unified government) can be another characteristic of the political system. In this kind of power structure, the same political party controls the two chambers of Congress and the executive. The policymaking process in a time of unified

government is more accessible than in a fragmented power structure. A dominant political party can quickly advance its policies as policy gridlock become unlikely (McNamara et al., 1996). However, a unified government is not a guarantee of significant reform. Despite a majority of the Democratic Party in both chambers of Congress, President Truman, for example, could not pass national health insurance because of the opposition of powerful ideology-based groups such as the American Medical Association (AMA). To understand why health policy is the source of polarization in American politics and was salient during the 2020 US presidential election, it is important to understand the debate in health politics prior to the election.

2.1.2 Political transition and health debate post the 2016 presidential election

Winner of the 2016 US presidential elections, President Donald Trump, made clear his ambition to bring change in health politics and policy in the US. One of the important features of President Trump's health sector policy was repealing some provisions of the Affordable Care Act. Notably, the individual mandate forcing people to have health insurance, whether private or public, was repealed. Another important provision of the ACA repealed by President Trump with the support of conservative advocacy groups was the review of Medicaid eligibility, reducing the number of people eligible for Medicaid expansion (Rice et al., 2018). With an expansion of the uninsured following the decisions of the Trump administration, racialized health disparities rose. The disparities have been more conspicuous during the COVID-19 pandemic, with people of color infected at a higher rate than their White counterparts (S. Rosenbaum et al., 2021). Structural inequalities by race in the health sector in the United States is well documented (Byrd & Clayton, 2001; Musumeci et al., 2015; Blumenthal et al., 2020; Bernstein et al., 2020; Selden & Berdahl, 2020).

A significant shift in health politics and policy in the United States from the Obama administration to the Trump administration is the power dynamics in the health sector between the federal government and the states. While in the Obama administration, the federal government tended to be more present in the health sector, the Trump administration gave more weight to states in managing health policies (D. K. Jones, 2017). The primary debate remains on the relationship between health insurance and health outcomes. While some research advocates for a positive relationship between health insurance coverage and the overall health of the population (Garrett et al., 2009; Moreno-Serra & Smith, 2012; Frenk & De Ferranti, 2012), other state-based approaches advocate for more flexibility for states to manage Medicaid (S. Rosenbaum et al., 2021). Conservative advocacy groups have successfully advanced the passage of the American Health Care Act (AHCA) in 2017, which gave more power to the states in managing health policies.

Elections are potent instruments at the hands of the citizens to influence the policymaking process in their country. Advocacy groups and political entrepreneurs seek to win elections to advance their concerns on the political agenda. Patel & Rushefsky (2014) argue that decision-makers tend to favor decisions with short-term benefits during the election year to ensure their reelection to the detriment of decisions with long-term benefits. The electoral calculation is reinforced by the fact that members of Congress and the president have different terms lengths and diverse interests to defend. These facts weighed on the political debate between the two parties during the 2020 US presidential election. In addition, the advent of the pandemic increased the salience of these health-related questions, which undoubtedly affected voting behaviors.

2.1.3 Leader effect, populist rhetoric, and policy preference

Candidates' agenda and policy preferences influence vote choice among the electorate. To win elections, party candidates need to elaborate discourses likely to appeal to many

voters. *Political rhetoric* is used by party candidates to convince a significant portion of the electorate. By appealing for policy change, political candidates use priming and framing techniques to influence the electorate's attitudes and behaviors. Priming, as they raise new information about a current policy issue, and framing as they present the information as a failure more or less related to the opponent's policy preference. Asen (2002) observes that political rhetoric tends to divide the electorate into two categories, the public, which is targeted by the rhetoric for electoral support, and the counterpublic, who is the public excluded from the policy-agenda of the candidate (political leader). A well-known example of political rhetoric is populist rhetoric. Populist rhetoric is social-economic-based political rhetoric focusing on race, ethnicity, and immigration policies. Candidates using populist rhetoric will present the current institutions as corrupted and favoring the interest of a minority to the detriment of the majority. As society is presented as structurally corrupted and unequal, only a charismatic leader in a Weberian sense is capable of restoring justice. Populist rhetoric tends to be fruitful in times of major exogenous choc and/or economic recession (White, 2016). Party candidates will take advantage of existing challenges among a significant portion of the population to advance populist rhetoric through priming and framing. Berman (2021) observes that a political leader using populist rhetoric will be perceived as a leapfrog representative in the left-right ideological spectrum. Besides being charismatic, a populist leader must advance extreme ideological policy preferences to convince and consolidate his/her party base. A direct consequence of populist rhetoric is that it creates and reinforces an artificial hierarchy between the targeted public and the counterpublic regarding access to public goods and services. Populist rhetoric intends to limit redistributive policy toward the counterpublic and thus increase the gap in power sharing between the two groups (Habermas et al., 1974).

Populism rhetoric is usually at the base of different forms of widespread engagement that will either increase support for the candidate or provoke outrage in the electorate and

decrease support for the candidate. President Trump has used populist rhetoric to increase and consolidate his supporters base. The 2021 United States Capitol attack is an example of the effect populist rhetoric can have on the electorate. Since his election in 2016, President Trump has demonstrated hostilities against what he called the "establishment" or the "deep states." According to President Trump, the Democratic party establishment does not defend the interest of the American citizens but the interest of powerful corporations Michaels (2017). He considers himself the only candidate representing American citizens' interests. To do so, Trump repeatedly targeted immigrants and categorized them as counterpublic in his policy agenda. By stereotyping Muslims as terrorists, President Trump's rhetoric significantly influenced public opinion on the matter of Muslim migration. Collingwood et al. (2018) for example, find that a Trump policy signed on January 27th, 2017, that intended to ban Muslims from US immigration, has provoked outrage in the electorate and decreased Trump's presidential approval. This suggests populist rhetoric and practices can either reinforce voter's policy preferences (Bishin et al., 2016) or alter those preferences in the opposite direction (Collingwood et al., 2018). Besides Muslims, president Trump used populist rhetoric against Blacks and Latinos immigrants. Gonzalez (2019) argues that President Trump built his campaign by categorizing Latino immigrants as inherently violent and dangerous to the American culture. Sanchez & Gomez-Aguinaga (2017) observe that the divisiveness nature of president Trump campaign and racialized policy explained the low level of support of Latinos for Trump. President Trump's populist rhetoric also extended to African immigrants by calling Haiti and African nations "shithole countries" (Olubela, 2018; Q. Williams, 2020; Villazor & Johnson, 2019). Such populist rhetoric is likely to reinforce racial mobilization and solidarity, which explain racial voting block (Sanchez & Gomez-Aguinaga, 2017; Zepeda-Millán & Wallace, 2013; Barreto et al., 2007), and inter-racial cooperation (Jones-Correa et al., 2016; Collingwood et al., 2018). Although these kinds of affirmations have caused outrage among a significant proportion of the population,

they have reinforced many anti-immigration policy preferences. Analyzing voting behaviors in the United States during significant elections such as the presidential election implies considering political party leaders' effects and political rhetoric. While the leader effect is essential to understanding voting behaviors, the literature suggests that partisanship is significant in predicting vote choice in the United States.

2.1.4 The importance of partisanship in voting behavior in the US

Understanding the determinant of voting behaviors implies considering political factors influencing vote choice. Partisanship has been regarded as a significant factor that affects political behaviors (Wattenberg, 1981; Campbell et al., 1980; Rose & Mishler, 1998; Campbell et al., 1980). While scholars such as Reiter (1993); S. C. Craig (1985); Brady & Ettling (1984); Niemi & Weisberg (1976), and Franklin et al. (2009) argue for a decline in the relevance of partisanship for explaining voting behaviors in the United States (partisan dealignment), Bartels (2000) observes that partisanship remains a significant force influencing not only voting behaviors but American politics. The increase in voter turnout seems to be caused by partisanship. Downs (1957) argues that as self-interest is at the core of political behaviors, voters will participate in politics to influence policies affecting their life, and political parties will strive to translate voters' preferences into their ideological spectrum. Page & Shapiro (2010) observe that by translating voters' preferences into ideological lenses, political parties cause overt ideological clashes in politics (polarization) and engage the electorate in politics. Even though political participation such as voting is marginal at the individual level, and the level of information required to make the correct choice is overpriced and may contradict the rationale behind voting (Ansolabehere, 2006), salient issues such as race politics, wealth redistribution, and abortion laws are examples of voters' policy preferences politicized by

parties that stimulate interests in terms of political participation among the electorate. Voters find political parties as shortcut heuristics, helping them minimize the cost associated with the quest for information required to make their choices. By stimulating the electorate to participate politically, political parties help reduce Olson (2009) 's free-ride issue, where voters leave the responsibility to vote to other voters and are still able to reap the fruit of the election. Besides, partisanship does not only influence voter turnout but also vote choice. Converse & Dupeux (1962) in analyzing trends in partisanship in France and the United States, observe that partisanship explain significantly vote choice in both countries, which goes beyond the political context. This suggests that according to the Converse & Dupeux (1962), short terms exogenous choc (focus event) affecting the political system will not significantly influence the impact of partisanship on vote choice. Phenomena such as swing votes are temporary and marginal and cannot significantly negate the effect of partisanship on vote choice.

By being the channel where individuals can candidate for election and providing valuable informational resources and technical support to the candidate, political parties are at the core of elections in the United States. Shively (1979) argues that the effect of partisanship on voters is negatively related to their level of political knowledge. The fewer voters are politically sophisticated, the more they are to use political parties as a shortcut heuristic in their vote choice. Bartels (2000), in analyzing American presidential elections from 1956 to 1996, finds that party loyalty has been a strong determinant of voting behaviors. Parties influence people's government performance evaluation and suggest how voters should participate politically. Political parties are forms of socialization agents that influencing not only individuals' attitudes about politics but also family attitudes. Jennings et al. (2009) find that party loyalties tend to be hereditary, with children generally keeping their parent's political party when getting adults. Butler & Stokes (1969) go further by arguing that party identification increase with age. By providing cues to partisans through priming and

framing, partisanship can be regarded as a measure of social group identity that crystallizes individuals' political predisposition throughout their life (D. P. Green et al., 2004; Tesler, 2015). Voters will choose their parties not only for shortcut heuristics but to shape and reinforce their group identity.

Partisanship is reinforced by media and leader effects (Snow & Altheide, 1979). Party leaders, through media, influence policy proposals and public opinion. Gerber & Green (2000) argue that political parties' electioneering improves voter turnout. Campaign advertisement through media and other forms of political mobilization strategies are effective in increasing voter participation. Indeed, Ansolabehere & Iyengar (1994) find that exposure to campaign advertisements is positively associated with voting choice. The more people see candidates' political party advertisements, the more they are to vote for them. Political parties use media platforms to promote their image and label (Prat, 2006). By using political parties as a shortcut heuristic, voters tend to align their values and policy preferences with their party (Wattenberg, 1981; Campbell et al., 1980). The more parties differ in policy preferences, the easier the voters can identify parties' preferences and match them. Policy polarization is, therefore, a significant factor influencing party identification. While during the 1970s, there was an ideological overlap between Democrats and Republicans (Erikson, 1972; Mann & Wolfinger, 1980), the rise of political polarization in the last decades has been accompanied by the decrease of ideological overlap between the Democratic Party and the Republican Party (Hetherington, 2001). Lupu (2015) argues that voters tend to reinforce their party attachment during policy polarization. Carmines & Layman (1997) in the same logic argues that voters' party loyalties tend to increase when values-related policies are at stake. Questions such as abortion rights or LGBTQ+ rights, for example, tend to increase partisanship in the United States, where voters choose parties that match their preferences regarding values and ideology. Fiorina et al. (2008) observe a significant correlation between partisanship and policy preference in the electorate. Partisanship shapes not only

political behaviors among the electorate but also the political behaviors of the party candidates. Campbell et al. (1980) argue that political parties serve as the social organizations with the primary goal of shaping and consolidating party affection among followers (positive partisanship) and mistrust of out-parties organizations (negative partisanship).[1]

Political parties provide valuable information to political candidates based on their evaluation of the electorate, and political leaders use parties to implement policies that will reassure their reelection. Binder et al. (1999) find that political parties influence decision-makers policy preferences to match voters' preferences. This helps increase the party's credibility among the electorate and thus partisanship. A corollary of partisanship is negative out-party perception. P. R. Miller & Conover (2015) argue that there is a positive relationship between partisanship and polarization as partisanship tends to increase out-party competition. Bankert (2021) argues that the increase in party attachment explains the increase in out-party disdain (negative partisanship), where the out-party perceives each party as not only unqualified but dangerous for the country (Mason, 2015; Rogowski & Sutherland, 2016).

2.1.5 Beyond partisanship: economic voting and political knowledge

While partisanship serves as a shortcut heuristic for voters to understand political phenomena and make their vote choice, other factors such as the candidate's past performance also serve as cues to voters in their vote choice. Kramer (1971), in analyzing the electorate vote choice in both congressional and presidential election in the United States between 1896 and 1964, observe that economic conditions, especially during the year of the election, is a determinant factor influencing vote choice. Kramer (1971) argues that vote choice follows a rational process, where voters evaluate both their individual and national state of the econ-

[1]Survey question such as "Is there any party you would never vote for?" has been used by scholars such as Medeiros & Noël (2014), and Rose & Mishler (1998) to measure negative partisanship.

omy and choose the candidate they believe will maximize their interests. Kerr (1944), and Pearson & Myers (1948) observe that voters tend to maintain their support for the government in times of prosperity and vote the government out in times of recession. Fair (1996) find that voters can do a retrospective evaluation of the state of the economy and evaluate whether or not the incumbent candidate or party performed well during their administration. As voters get more informed about political phenomena, they rely less on the partisanship heuristic to make decisions.

Voters' ability to prospective and retrospective evaluations of the candidates could result from increased education and political knowledge in the electorate. Dalton (1984, 2013) and Norris (1999) argue that expanding knowledge and education has given rise to a more politically sophisticated electorate, now able to understand political phenomena and make their appraisal of social issues. As education has become accessible to the mass population, Holmberg (2007) the explosion of information and communication techniques has fostered the transfer of information from media, and experts to the electorate, making the voter more autonomous in terms of information seeking. This "cognitive mobilization" (as called by Heath, 2017) suggests that educated voters are more likely to understand salient issues and express rational policy preferences.[2] While the Michigan school presents partisanship as a stable political identity transferred through the socialization process, Fiorina (1981) argues that voters have been politically sophisticated enough to evaluate parties' performance and either punish or reward parties during elections. Since the candidate reflects the party policy preferences, voters retrospectively evaluate the incumbent candidate to establish their preferences about the party in the election. This suggests that it is more the political context than partisanship that influences vote choice. The salience of issues varies from one context

[2]Although, according to the cognitive mobilization theory, education and mass media make people rely less on partisanship shortcut heuristic, Huber et al. (2005); Lupu (2015), and Albright (2009) find that partisanship do increase with level of education, as the electorate is able to understand the expressed parties policy preferences.

to another; in a major event such as a pandemic, questions related to the management of the pandemic may be more salient than prior policy issues (Huber et al., 2005).

2.2 Theories

C. R. Berry & Howell (2007) argue that whether at the national or local level, voters tend to vote out representatives or political leaders if they judge those representatives as not good enough in their position. As argued in the previous section, the advent of the COVID-19 pandemic a few months before the 2020 US presidential election has influenced voters' policy preferences. While partisanship help explains voting behaviors and political attitudes, policy factors in time of significant public issue are influential in explaining voting behavior, mainly vote choice. McAllister (2007) observe that voters tend to evaluate candidates instead of political parties in making their electoral choice; this could explain the decline in partisanship observed these last decades. An analysis of the 2020 presidential election suggests that most voters have chosen to vote out the incumbent president Donald Trump because of his poor performance managing the pandemic.[3] This suggests that health-related policy issues were an essential determinant of presidential approval during the months preceding the 2020 US presidential election. Aspects such as the role of federal health institutions, public health compliance, and expressed health policy preference by presidential candidates are among the theories used in this chapter to explain vote choice during the 2020 presidential election.

2.2.1 Public Health Compliance

Defined as the beliefs, values, perceptions, representations, attitudes, and behaviors affecting lifestyle, personal health, and community health (Gochman, 1988), health behaviors

[3]A Reuters poll showed that only 37% Adult Americans approved the way Trump handled the COVID-19 pandemic while 59% disapproved. https://www.reuters.com/article/us-usa-election-trump-coronavirus/trumps-handling-of-coronavirus-pandemic-hits-record-low-approval-reuters-ipsos-poll-idUSKBN26T3OF. Last retrieved 04-01-2022

in society determine the level of success of any public health policymaking process. Public health compliance can be regarded as the general acceptance (external compliance) by the public of public health regulations and its internalization at the individual level (internal compliance). Public health compliance is an essential component of the success of any public health policymaking process. The willingness of the population to follow public health recommendations, guidelines, and mandates increases the likelihood of the policy's success. Social learning is an essential component of public health compliance. Bandura (1971) observes that the population's willingness to learn by replicating institutional guidelines and imitating others determines the level of compliance within a population. Bargain & Aminjonov (2020) observe that compliance with public health guidance has been the most important factor explaining the success of policies intending to control the pandemic.

Furthermore, public health compliance seems to be influenced by political and socioeconomic factors. Jost (2017) observe a cognitive asymmetry between liberals and conservatives, with conservatives over-weighing structural stability and individual freedom more than liberals. These tendencies prompt conservatives to be risk-averse toward changes likely to increase institutional power to the detriment of individual freedom. Political elites influence the attitudes and behaviors of their constituents through cues and information they share. J. Green et al. (2020) observe that political polarization among elites has been the major hindrance to institutional response against the COVID-19 pandemic. The 2020 presidential election exemplifies how polarization influenced health attitudes and behaviors regarding managing the COVID-19 pandemic. Public health institutions such as the Center for Disease Control and Prevention (CDC) enunciated guidances and guidelines to contain the spread of the COVID-19 pandemic. Principally, in the absence of a cure, the CDC advised the public to practice social distancing, mask-wearing, and self-quarantine in case of potential exposure, as well as other guidance.

As public health compliance implies limiting personal liberties to the greater good of

society, it tends to be perceived by a significant portion of the population as a "symbol of government overreach" (Kahane, 2021). The "Anti-Mask League" in 1918 is an excellent example of how ideological perception can prompt anti-public health compliance. In 1918, around four to five thousand individuals organized protests in San Fransico to oppose the mask-wearing mandate established to contain the spread of the Spanish flu (Crosby, 2003). The same kind of behavior has been observed during the current COVID-19 pandemic. Hauser (2020) observes that there have been protests against mask-wearing in many states in the US. These protestors tend to find their ideological support from President Trump.

As soon as the CDC implemented mask-wearing guidances, President Trump publicly expressed his unwillingness to follow those guidances.[4] This position taken by President Trump in the matter of mask-wearing certainly influenced the public health behaviors of a significant portion of the population (J. Green et al., 2020). During the first presidential debate between him and vice President Bien, President Trump criticized his political opponent, saying, "Every time you see him, he has got a mask. He could be speaking 200 feet away from them, and he shows up with the biggest mask I have ever seen." [5] President Trump systematically chose not to wear face masks in public appearances. These cues have certainly influenced the electorate. Many States decided to implement the mask-wearing mandate in their jurisdiction because of President Trump's reluctance to implement that at the federal level. Consistency from the political system regarding responses is a critical determinant of the policymaking process (Knight & Nadel, 1986). President Trump downplayed the COVID-19 pandemic and contradicted health institutions such as the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC). This position taken by President Trump has caused mixed responses from the political system and has undoubtedly influenced public health behaviors in the electorate.

[4]Check out: "In His Own Words, Trump on the Coronavirus and Masks," New York TimesLast retrieved August 22nd, 2022.

[5]Same reference as footnote 4.

Contrary to his opponent, President Biden used mask-wearing to symbolize his political campaign. Placing control of the COVID-19 pandemic is his priority. President Biden promises to "shut down the virus, not the country." [6]

Hypothesis I: Public health compliance is negatively related to voting for Trump and positively related to voting for Biden.

2.2.2 Trust in federal health institutions

Federalism refers to power-sharing in governance between the federal government and the states. While confederations are not powerful enough to provide unifying responses to social issues, unitary power tends to infringe on personal liberties. Federalism lies between the confederation system and the unitary system. The main question about federalism is how power is distributed between the federal government and the states. The role of states in major policy issues such as health fuels debates between federalists and anti-federalists. Powers beyond enumerated powers are sources of debate between conservatives and liberals. While conservatives tend to be less federalist and pro-state, liberals tend to be more federalist. In health matters, states are endowed by the American constitution with the power of managing health politics and policy within their jurisdiction. While health policy is not part of the federal enumerated power, health management is a field where the federal government tends to intervene the most through reforms. Ideological debates on the relevance of the federal government in the health sector demonstrate the complexity of federalism in the United States. A significant debate regarding the management of COVID-19 has been whether the response should be universal and thus handled by Federal Institutions or whether the COVID-19 management should be handled at the state level. The COVID-19 pandemic has been a good test of federalism in the United States.

[6]Check out: Joe Biden: I'm going to 'shut down the virus', not the US – videoLast retrieved: August 22nd, 2022.

Addressing the interconnection between federalism and health policy unveils discrepancies between states and the federal government and among the voters and citizens across states. Because questions related to federalism usually originate from ideological spectra, support for federal health institutions is a way to situate constituents' preferences about sources of health policy. Trust in federal health institutions is the proxy I use in this chapter to measure constituents' preferences on federalism and health policies. Trust in federal health institutions is a good measure of subjective perceptions about the federal government's role in health policy and politics. In democratic societies, citizens transfer part of their freedom to elected officials (representatives) to act on their behalf. These representatives are part of the institutional apparatus constituting the government. In the United States, democracy is expressed through a representative form of government (indirect democracy), where both direct and indirectly elected officials act on behalf of the population to minimize collective action problems. Representatives can act either as trustees or as delegates. In the trustee model of representation, voters elect their representatives based on his/her competence. Trustees, on the other hand, compared to delegates, have autonomy in representing their constituents.

Fox & Shotts (2009) employ the term of *free mandate* to characterize the relationship between the trustees and their constituents. Contrary to the trustee representation model, the delegate model of representation is based more on substantive representation. While trustees can substantively represent their constituents, the delegates act more like a spokesperson and cannot derail from their constituents' interests. Tomba (2018) refers to the term of *imperative mandate* to characterize the relationship between the delegate and their constituents. Both trustee and delegate representation models are forms of popular sovereignty where the people indirectly influence the political machinery. Regardless of representation, public trust is at the base of the relationship between the citizens and their government. Both the executive and the parliament are vested in public trust. In the *Federalist 57*, James Madison

argues that Congress representatives are at the core of the public trust between the federal government and the people because of term limits and regular elections (James Madison as cited in Sorenson, 1995).

Regarding the executive branch, Alexander Hamilton, in the Federalist 70, argued that the balance of power between the executive and the legislative is what reinforces the public trust (Alexander Hamilton as cited in Wedel, 2011). Federal health institutions are the emanation of the federal government in the health sector. In an overarching social issue such as the COVID-19 pandemic, federal institutions are the channel by which the federal government implements responses.

Federal public health institutions such as the Centers for Disease Control and Prevention are part of the institutional apparatus that constitute the American Democracy. Decisions as guidance emanating from these institutions are expressions of responses of the democratic system to a public health concern. For the federal government to implement optimal policies, particularly in the health sector, policies need to be expressed clearly with a good level of coherence Kowitt et al. (2017) argue that trust in federal health agencies is positively related to support for health policy. Policy consistency is an essential component of political trust. Trust in federal health institutions is a component of trust in the federal government. Hetherington (1998) observes that trust in the president facilitates trust in federal agencies. Mixed messages and disagreement within components of the political system adversely affect political trust toward federal institutions. Chanley et al. (2000) find that declining trust in federal government agencies results from mismanagement among core institutions such as the executive or the legislative.

President Donald Trump has manifested disagreement with federal bureaucracy throughout his term. As states implemented CDC guidance, President Trump suggested he had the power to force states to stop respecting public health guidance provided by federal agencies

such as the CDC to reopen their economies.[7] Rutledge (2020) observes that the skepticism of President Donald Trump on relying on public health institutions for COVID-19 responses is a cause of his failure to address the pandemic management. By considering federal institutions as a part of the "deep state," President Donald Trump reinforced mistrust of federal institutions among the electorate (McIntire et al., 2019). To fulfill his fight against what he considers the "deep state," President Trump attempted to fire top experts and pundits within federal health agencies, such as the CDC. Early at the onset of the COVID-19 pandemic, President Donald Trump attempted to fire Nancy Messonnier as she alerted the American public of possible disruptions to their life due to the pandemic. Rutledge (2020) argues that President Trump systematically contradicted central guidance advanced by federal public health agencies that tend to promote the closure of the economy to address the pandemic.

Vice president Biden proposed a comprehensive program under the label "Build Back Better" during his presidential campaign. His program implies more federal government intervention in matters such as the economy, managing the COVID-19 pandemic, and global warming. Specifically, the federal government will invest massively in infrastructure and buildings and promote green energy. Biden emphasized during his campaign that he wanted to bring back the trust between the federal government and the constituents. Regarding managing the COVID-19 pandemic, Biden promises to follow the science and institutional guidance offered by federal accreditated institutions such as the Food and Drugs Administration (FDA) and the Center for Disease Control and Prevention (CDC). During the presidential debate, Biden affirmed that he "will choose science over fiction" and would "represent all" Americans whether they voted for him or against him.[8] By such expressions, Biden sent cues to the electorate that his administration, if elected, would be based on political trust between the constituents and the federal government.

[7]Check out: Trump claims 'total' authority, over govs, to reopen economyLast retrieved 08/23/2022.
[8]Check out:Biden: 'We're going to choose science over fictionLast retrieved 08/23/2022.

Hypothesis II: Trust in federal public health institutions is negatively related to voting for Trump and positively related to voting for Biden.

2.2.3 Health policy preferences: Medicare for all

Health politics in the US is a field where ideology-based groups confront each other to influence and model the health care system. While the US remains the only developed country without universal health insurance coverage, many advocacy groups fight to maintain this state of affairs. An attempt by President Theodore Roosevelt to establish national health insurance in 1915 has been ferociously denounced by conservative advocacy groups as being "socialist" and "un-American" (Morone, 2013). Any compulsory intervention of the federal government in the health field is perceived as anti-capitalism. This philosophy found its roots in the thoughts of the English philosopher John Locke, who argued that the role of any government is to assure the promotion of individuals' freedom. James Madison notably reinforces this ideology with his "Federalist 10". According to Madison, the divergences in values and preferences among factions and advocacy groups express individual liberties and can only be fully expressed through a representative government (De Visscher, 1950; Storing, 2008). Liberalism, which is at the core of the conservative ideology in the United States, is based on the conception that all preferences, values, and interests should be able to penetrate the political system. Equal access and opportunity are the guarantees of an individual's freedom. In the health sector, the continuous debate between pro-universal health coverage and non-universal health coverage is among the controversial debate in American politics. While liberals advocacy groups have advocated for a single-payer system where the federal government pays for all expenses related to health care, conservative advocacy groups have advocated for a pure market-based health system where price and payment are ruled under the law of the market. The passage of the Social Security Act by President Franklin Roosevelt in 1935, where any aspect related to universal healthcare coverage was devoided by Congress,

was the first step toward a middle ground between liberal and conservative advocacy groups (Kennedy, 1999). The passage of Medicaid (health assistance for the poor) and Medicare (health assistance for the elderly) by President Lyndon B. Johnson, was the first form of partial universal health coverage based on age and level of income. Everyone meeting the criteria are eligible to benefit from those programs. The Affordable Care Act (ACA), signed by President Barack Obama, has expanded further Medicaid coverage and health insurance through a marketplace. People with income reaching 138% of the federal poverty level threshold are eligible to take advantage of Medicaid assistance (Centers for Medicare & Medicaid Services, 2020).

Health politics is a field where politically polarized values and ideas are ferociously confronted and where compromises are hard to achieve (Stone, 2011). The complexity of the US Congress is one of the reasons preventing possible compromises in health politics (Morone, 2013). External advocacy groups such as interest groups and lobbying influence the decision-making process within the political system, notably through political donations. Briffault (2008) observes that campaign finance is a powerful instrument used by lobbying and interest groups to advance their preferences and influence the agenda-setting in Congress. Steinbrook (2008) argues that lobbying associated with the health sector contributed up to $29 million to presidential candidates during the 2008 US presidential election. While lobbying and campaign finance intend to access decision-makers and influence the policymaking process, Heinz et al. (1993) argue that interest groups are risk-averse and tend to lobby to maintain the status quo. In that sense, interest groups seem to be an instrument used by the upper class to maintain the policy monopoly within the political system, as the poor do not have the means to have an organized way to make their voice heard (Mills, 1956; Lowi, 1969).

Gadarian et al. (2021) observe that health policy preference has been a determinant factor explaining vote choice during the 2020 US presidential election. With the advent of COVID-19, questions related to health care coverage in the United have been getting

more and more salient in the electorate. Dhanani & Franz (2020) argue that news coverage consumption among the electorate has risen because of the advent of the pandemic and the presidential election. This corroborate what Althaus (2002) called the "crisis effect". In times of major crisis, voters tend to rely more on news and political elites to construct and consolidate their policy preferences. Expressed positions taken by political leaders, whether within the frame of their administrative and political duties or outside of that frame, are cues that inform voters about leaders' policy preferences (Rocca, 2007). For example, the question of Medicare for all has been a salient issue during the 2020 US presidential election. Simas (2021) observe that policy preferences expressed by presidential candidates and their teams regarding Medicare for all during the 2020 US presidential election help explain vote choice. President Donald Trump has been adamant about refusing any forms of socialized health care plan such as "Medicare for all." In a highly publicized presidential debate against vice president Joe Biden, President Trump affirmed that the health policy program suggested by Joe Biden would cause the termination of 180 million Americans' health coverage.[9] Although president Biden did not clearly expressed the desire to establish a form of Medicare for all, where the federal government will act as the single player for all medical bills in the United States, his willingness to expand the Affordable Care Act through public coverage suggests his support vis-à-vis a public expansion of health coverage. Health insurance expansion through federal intervention has been a strong characteristic of the Democratic Party. Hacker (2013) argues that questions related to health policy and politics have been a drive of intraparty compromise within the Democratic Party. Partisanship and party candidates' expressed policy preferences have been regarded as determinant factors explaining vote choice and political behaviors (Zaller, 1992; Lodge & Taber, 2013; Huddy et al., 2015).

Hypothesis III: Support for Medicare for all is positively related to voting for Biden

[9]Check out: Did Trump Confuse the Public Option With 'Medicare for All'?Last retrieved 08/21/2022.

and negatively related to voting for Trump.

2.3 Data and Methods

Analyzing health within the spectrum of the political system implies addressing how health facts influence the power dynamics in the political system. This chapter addresses how health-related factors, such as candidate health policy preferences and perceptions, influence political participation among the electorate. While health politics and policy intend to alter or influence the health behaviors of the constituents (M. Carpenter, 1980; Rhodes, 1997; R. Freeman, 2000; D. Carpenter, 2012), the question of whether health behaviors influence political behaviors and, therefore, the power dynamics within the political system is usually omitted in research. Using the 2021 African American COVID Poll (AACVP) and the 2020 Collaborative Multiracial Post-election Survey (CMPS), this chapter addresses whether public health attitudes and behaviors have affected the power dynamic within the political system through political participation. The COVID-19 pandemic has prioritized public health concerns in most governments worldwide. This cross-sectional study allows us to understand how public health attitudes and behaviors have affected political attitudes and behaviors during a significant public health concern. Specifically, using cross-sectional methods such as logistic regression, this paper analyzes how the health attitudes and behaviors exacerbated by the COVID-19 pandemic influenced the likelihood of the electorate to vote either for Donald Trump or Joe Biden during the 2020 US presidential election. Specifically, this paper intends to improve our understanding of the magnitude of effects public health factors such as public health compliance following COVID-19 mandates, trust in Federal Health Institutions, and Health policy preferences such as Medicare for All have had on vote choice during the 2020 US presidential election. Another aspect addressed in this chapter is how trust in federal health institutions influences political participation during the 2020 US

presidential election.

2.3.1 Using the African American Covid-19 Vaccine Poll (AACVP)

Table 2.1 presents the summary descriptive statistic of all the variables I use in this chapter (means, standard deviation, maximum, and minimum). The dependent variable used to evaluate the relationship between public health behaviors and political behaviors is respondent vote choice during the 2020 US presidential election. Vote choice is measured in the AACVP survey by the question: "In the 2020 election, who did you vote for President." The preset answers are "Donald Trump", "Joe Biden", "Someone Else," and "I did not vote for President." I removed respondents who did not vote during the 2020 US presidential election to capture only vote choice. The first variable, vote choice, is recoded as a dichotomous variable with a vote for Donald Trump coded as 1. The second variable, vote choice, is recoded as the first variable, with a vote for Joe Biden coded as 1 this time. The sample size for this dependent variable is 9,903. As both dependent variables are binaries, I use logistic regression to explain the probability of voting for Donald Trump (versus not voting for Donald Trump) and the probability of voting for Joe Biden (versus not voting for Biden) during the 2020 US presidential election in a COVID-19 context. Contrary to the Ordinary Least Squares method (OLS), the coefficient cannot be interpreted directly, which is why the magnitude of the effects is measured through the use of predicted probability.

Table 2.1: Summary descriptive statistic: Vote choice —AACVP

Variable name	Obs	Mean	Std.Dv.	Min	Max
Biden	9,903	.69	.46	0	1
Trump	9,903	.25	.43	0	1
Public Health Compliance	12,287	2.72	.4	1	3
Trust in Federal Health Institutions	12,287	6.85	2.89	0	10
Health Insurance Types	12,287	2.68	1.1	1	5
Preexisting condition	11,947	.28	.45	0	1
Female	12,193	.54	.5	0	1
Age	12,287	4.04	1.62	2	7
Race	12,287	3.37	1.94	1	6
Unemployment	12,287	.26	.44	0	1
Education	12,287	3.73	1.52	1	6
Income	10,981	2.88	1.56	1	6
Democrats	12,287	.51	.5	0	1
Republicans	12,287	.17	.38	0	1
Independent	12,287	.32	.47	0	1
CNN	12,287	3.21	1.85	1	6
Fox News	12,287	2.97	1.84	1	6

The main variables used to explain vote choice using the AACVP survey are public health compliance and trust in federal health institutions. The variable public health compliance captured the respondent's willingness to follow institutional guidance and mandates related to COVID-19. The variable is a scale constructed using factor analysis technics and measuring respondent attitudes and behaviors toward the CDC public health guidance as a response to the COVID-19 pandemic. The questions from the survey address whether or not the respondent will follow the public health guidance and mandate such as social distancing, mask-wearing... [10] The second key independent variable using the AACVP to explain vote

[10]The questions are operationalized in the survey by: "13. Over the next month, do you plan to follow, or not follow these practices: a. Stay home if you feel sick;
b. Seek medical attention if you have symptoms of COVID-19;
c. Wear a mask when indoors in a public place around other people;
d. Avoid crowded locations and mass gatherings;
e. Wash your hands regularly, with soap, for at least 20 seconds;
f. Stay at least six feet away from other people when you are in public settings.

choice is trust in federal health institutions. This variable captures the respondent's level of trust toward federal health institutions. Notably, the Center for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and Dr. Anthony Fauci.[11]

To measure the impact of public health compliance, trust in federal health institutions, and health policy preference on vote choice, I control for demographic variables (races, education, gender), risk factors such as whether or not the respondent has an underlying health condition (preexisting condition), as well as political confounding variables such as partisanship that could predict both vote choice and public health behaviors (Sigelman et al., 1985; Pearl, 2009; Lindgren et al., 2019; Geys & Sørensen, 2022). I also controlled for media effect by analyzing how ideological television channels such as CNN and Fox news influenced vote choice. Lastly, I controlled for economic voting variables such as income level and unemployment status.

A high correlation between the regressors (independent variables) can cause issues estimating the regressand (dependent variable). For example, in a multiple regression analysis, multicollinearity is an issue that causes suboptimal estimation of the dependent variable because other regressors can predict some regressors in the model. In a situation of multicollinearity, minor changes in the regression model can cause significant changes in the model's estimated coefficient in terms of their magnitude of effects (Farrar & Glauber, 1967). Figure 2.1 shows the correlation matrix of all the regressors used in the model using the

" The questions are codified into three-point ordinal categories ranging from: "Definitely will do this" coded as 1 to "No, I will not do this" coded as 3. I recoded the variables so that they range from 'No, I will not do this" to "Definitely will do this" and computed their interval consistency when combined using Cronbach's alpha, developed by Cronbach (1951). The Cronbach's alpha for this measure is 0.81, suggesting a solid internal consistency of the latent variable for public health behavior.

[11]Specifically, the questions in the survey that I use to construct the variable trust in federal health institutions are: "70. On a scale of 0 to 10, with 0 meaning you do not trust at all and 10 meaning you totally trust, how much would you trust each of the following if they participated in a campaign to encourage Americans to get the COVID-19 vaccine? a. The Center for Disease Control and Prevention (CDC), e. the Food and Drug Administration (FDA), and s. Dr. Anthony Fauci.

The Cronbach alpha is 0.89 for this variable, which suggests a solid internal consistency of the latent variable for public health behavior.

AACVP survey.

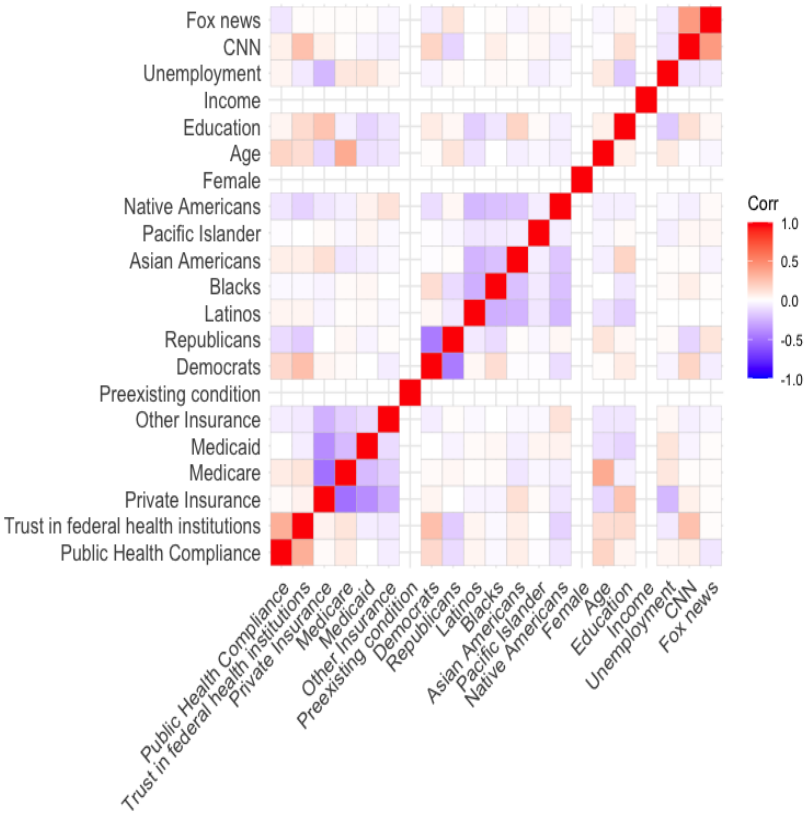

Figure 2.1: Correlation Matrix AACVP: Vote choice

Using a cutoff of .5 as a rule of thumb (Edwardson et al., 2016), the models were constructed to minimize multicollinearity. An analysis of the correlation matrix suggests pretty sound models. Indeed, except for a positive correlation between Fox News and CNN (Pearson's r=0.43), a positive correlation between public health compliance and trust in federal health institutions (Pearson's r=0.34), a negative correlation between Medicare and private insurance (Pearson's r=-0.5), and a negative correlation between Democrats and Republicans (Pearson's r=-0.46), the remain correlation between the regressors used in the model are lower than 0.3 in terms of absolute value. Using the AACVP survey, the models used to measure vote choice are the following:

Model-I

Vote for Trump = α + β_1Public Health Compliance + β_2Federal heath institution + β_3Latinos + β_4Blacks + β_5Asian Americans + β_6Pacific Islander + β_7Native Americans +β_8Gender + β_9Unemployment + β_{10}Education + β_{11}Age + β_{12}Income + β_{13}Medicare + β_{14}Medicaid + β_{15}Private Insurance + β_{16}Other health Insurance +β_{17}Preexisting condition + β_{18}Republicans + β_{19}Independents + β_{20}CNN + β_{21}Fox news + ϵ.

Model-II

Vote for Biden = α + β_1Public Health Compliance + β_2Federal heath institution + β_3Latinos + β_4Blacks + β_5Asian Americans + β_6Pacific Islander + β_7Native Americans +β_8Gender + β_9Unemployment + β_{10}Education + β_{11}Age + β_{12}Income + β_{13}Medicare + β_{14}Medicaid + β_{15}Private Insurance + β_{16}Other health Insurance +β_{17}Preexisting condition + β_{18}Democrats + β_{19}Independents + β_{20}CNN + β_{21}Fox news + ϵ.

2.3.2 Using the Collaborative Multiracial Post-election Survey (CMPS)

Using the CMPS survey, Table 2.2 presents the summary descriptive statistic of all the variables used to measure vote choice (means, standard deviation, maximum, and minimum). This research addresses whether public health attitudes and behaviors in a COVID-19 pandemic context have affected vote choice during the 2020 US presidential election. Most research in vote choice addresses factors such as partisanship (Berelson et al., 1954; Brody & Sigelman, 1983; Cox & McCubbins, 1993; Aldrich, 1995; D. P. Green et al., 2002), and the state of the economy (Downs, 1957; Chappell & Keech, 1991; Clarke & Stewart, 1994; J. E. Cohen, 2004; Chang & Lee, 2010). This research brings up the salience that public health attitudes and behaviors such as public health compliance, trust in federal institutions, and health policy preferences have on vote choice, especially in times of major public health

concerns.

Table 2.2: Summary descriptive statistic: Vote choice —CMPS

Variable name	Obs	Mean	Std.Dv.	Min	Max
Biden	9,779	.69	.46	0	1
Trump	9,779	.26	.44	0	1
Mask-wearing	9,779	.8	.4	0	1
Trust in Federal Institutions	9,779	2.17	.7	1	4
Medicare for All	9,779	2.8	1.02	1	4
National state of the economy	9,779	3.39	1.15	1	5
Personal state of the economy	9,779	3.1	1.1	1	5
Health Insurance Types	9,779	2.54	.95	1	5
Immigration Issues	9,779	.035	.18	0	1
Female	9,779	.58	.49	0	1
Age	9,779	3.62	1.58	1	6
Race	9,779	2.4	1.11	1	4
Unemployment	9,779	.1	.3	0	1
Education	9,779	5.32	1.39	1	7
Democrats	9,779	.51	.5	0	1
Republicans	9,779	.21	.41	0	1
Independent	9,779	.02	.14	0	1
CNN	9,779	2.58	1.2	1	4
Fox News	9,779	2.1	1.14	1	4

The variable vote choice is measured in the CMPS survey by the question: " In the election for president, "even if you did not vote, did you support"; if age=16-17 "even though you're not old enough to vote, did you support" [ROTATE] the Republican ticket, Donald Trump and Mike Pence; or the Democratic ticket, Joe Biden and Kamala Harris; or the Libertarian ticket Jo Jorgensen and Spike Cohen, the Green Party ticket Howie Hawkins and Angela Walker?" The preset answer are " Republicans Donald Trump & Mike Pence, coded as 1; Democrats Joe Biden & Kamala Harris, coded as 2; Libertarians Jo Jorgensen & Spike Cohen, coded as 3; Greens Howie Hawkins & Angela Walker, coded as 4; Someone else, coded as 5; None of these, coded as 6 " I dummied out votes for Trump & Mike and votes for Biden & Kamala. The first dependent variable, vote choice, is recoded as a dichotomous

variable with a vote for Trump & Mike coded as 1. The second dependent variable, vote choice, is recoded as the first variable, with a vote for Biden & Kamala coded as 1. Contrary to the AACVP, the CMPS allows filtering only for registered voters. Filtering out the sample for only registered voters gives a sample size for these two dependent variables of 9,779. As both dependent variables are binaries, I use logistic regression to explain the probability of voting for Donald Trump & Mike (versus not voting for Trump & Mike) and the probability of voting for Biden & Kamala (versus not voting for Biden & Kamala) during the 2020 US presidential election in a COVID-19 context.

The CMPS survey does not provide the same questions as the AACVP used to construct the variable public health compliance. To measure public health compliance, I used compliance with mask-wearing as a proxy. The variable is measured in the survey by the question: " During the COVID-19 pandemic, the Center for Disease Control (CDC) suggested to Americans to wear their face masks, while in public. Some state governors used their authority to declare that all people must wear masks, while in public. Which statement do you agree with most."[12] To measure trust in federal health institutions, I used the level of trust in the federal government as a proxy. The variable is measured in the survey by the question: " How much of the time do you think you can trust the government in Washington, DC to do what is right– just about always, most of the time, only some of the time or never?"[13] The third primary independent variable that use to measure vote choice is health policy preference in terms of universal preference. Specifically, the respondent's attitudes toward Medicare for all. The survey measured the variable through the question: "Do you favor or oppose having a national health plan, sometimes called Medicare-for-all, in

[12]The preset answers are: The governors were declaring this within reason: The policy helped promote safety and better public health. It was a use of government power for a good cause; coded as 1 , and The governors were acting without reason: The policy stepped too far into people's personal space. It was an abuse of government power to control the people coded as 2." I recoded the variable to get a dummy variable by coding the second preset answer into 0.

[13]The preset answer goes from Always coded as 1 to never coded as 4.

which all Americans would be guaranteed health insurance, provided by a single government plan?"[14]

To ensure that the influence of health attitudes and behavior on vote choice is not spurious, I controlled for well-known variables used in vote choice models—notably, demographic variables (races, education, gender) and political variables such as partisanship. In addition, I also controlled for economic voting variables such as respondent perception of the national state of the economy,[15], the respondent's perception of his financial condition[16], and whether or not the respondent is unemployed. As immigration policy was an important question during the presidential election, I controlled for respondents' perceptions of immigration policy.[17] Lastly, I controlled for media effect by analyzing how ideological television channels such as CNN and Fox news influenced vote choice.

To ensure that the model estimating vote choice is sound, I checked out whether the regressors used in the model are not highly correlated. Figure 2.2 shows the correlation matrix of all the regressors used in the CMPS survey models. Figure 2.2 suggests that some regressors present moderate levels of correlation. It is the case for the variable perception of the national state of the economy with the perception of personal economic condition (Pearson's r=0.46), Republicans, and Democrats (Pearson's r=-0.47). None of the correlations is greater than the absolute value of .5, suggesting that the variables are suitable for the models.

[14]The preset answers go from strongly oppose coded as 1 to strongly favor coded as 4.

[15]The variable is measured in the survey by the question: Thinking back over the past year and the state of the national economy, are you feeling... More hopeful or less hopeful.

[16]The variable is measured in the survey by the question:"Thinking back over the past year and your personal economic being, are you feeling... "

[17]The variable is measured on the survey through the question: In the past four years, have you experienced discrimination or exclusion because you are S2 in any of the following settings? In dealings with immigration officers.

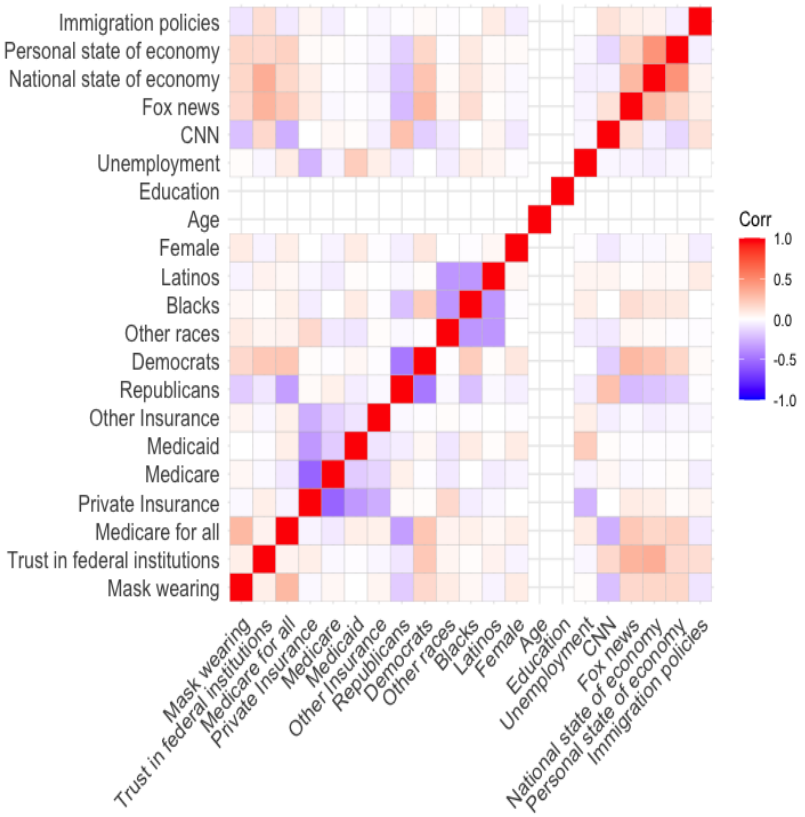

Figure 2.2: Correlation Matrix CMPS: Vote choice

Using the CMPS survey, the models used to measure vote choice are the following:

Model-III

Vote for Trump = α + β_1Mask-wearing + β_2Trust in Federal institution + β_3Latinos + β_4Blacks + β_5Other races + β_6National state of the economy + β_7Personal state of the economy +β_8Gender + β_9Unemployment + β_{10}Education + β_{11}Age + β_{12}Immigration discrimination + β_{13}Medicare + β_{14}Medicaid + β_{15}Private Insurance + β_{16}Other health Insurance + β_{17}Republicans + β_{18}Independents + β_{19}CNN + β_{20}Fox news + ϵ.

Model-IV

Vote for Biden = α + β_1Mask-wearing + β_2Trust in Federal institution + β_3Latinos + β_4Blacks + β_5Other races + β_6National state of the economy + β_7Personal state of

the economy $+\beta_8$Gender + β_9Unemployment + β_{10}Education + β_{11}Age + β_{12}Immigration discrimination + β_{13}Medicare + β_{14}Medicaid + β_{15}Private Insurance + β_{16}Other health Insurance + β_{17}Democrats + β_{18}Independents + β_{19}CNN + β_{20}Fox news + ϵ.

2.4 Findings

Before evaluating the impact of health behaviors variables on vote choice during the 2020 US presidential election through multivariate analysis, a non-parametric estimation using Student's t-test method was implemented to investigate the bivariate relationship between public health attitudes/behaviors and vote choice. Specifically, I evaluated the relationship between public health compliance, mask-wearing, trust in federal health institutions, and health policy preference (Medicare for all) with vote choices. The paired t-test helped evaluate the mean difference between health attitudes/behaviors and vote choice to zero. The purpose of using the paired t-test is to assess the mean of the primary dependent variables among those who voted for Donald Trump (versus did not vote for Donald Trump) and those who voted for Joe Biden (versus did not vote for Joe Biden). Table 2.3 presents the summary statistic of the primary variables used in this paper. The results suggest that the paired t-test comparison of means between voting in and voting out (for Trump and for Biden) are all statistically significant at the 0.001 level. In addition, table 2.3 shows that in using the AACVP survey, public health compliance is higher among those who did not vote for Trump (Mean=2.77, SD=0.003) than those who did vote for Trump (Mean=2.59, SD=0.01). Conversely, public health compliance is higher among those who voted for Biden (Mean=2.78, SD=0.004) than those who did not vote for Biden (Mean=2.59, SD=0.01).

Using the same AACVP, table 2.3 suggests similar results with public health compliance. Trust in federal health institutions is higher among individuals who did not vote for Trump (Mean=7.53, SD=0.03) than those who voted for Trump (Mean=5.59, SD=0.06).

Conversely, trust in federal health institutions is higher among Biden voters (Mean=7.67, SD=0.03) than among Biden-not voters (Mean=5.67, SD=0.06). Using the CMPS data, table 2.3 results show similar results to those using the AACVP. Mask-wearing is higher among non-Trump voters (Mean=0.83, SD=0.003) than among Trump voters (Mean=0.57, SD=0.01). Conversely, mask-wearing is higher among Biden voters (Mean=0.84, SD=0.003) than those who did not vote for Biden (Mean=0.6, SD=0.01).

Trust in federal institutions is higher among individuals who did not vote for Trump (Mean=2.99, SD=0.01) than those who did vote for Trump (Mean=2.01, SD=0.013). On the other hand, trust in federal institutions is higher among people who voted for Biden (Mean=2.34, SD=0.01) than those who did not (Mean=1.98, SD=0.01). Lastly, health policy preference toward the question of Medicare for all varies among voters. For example, support for "medicare for all" is higher among Trump non-voters (Mean=3.16, SD=0.01) than those who voted for Trump (Mean=1.98, SD=0.02). Conversely, support for "medicare for all" is higher among Biden voters (Mean=3.19, SD=0.01) than Biden non-voters (Mean=2.10, SD=0.02).

Table 2.3: Summary statistic: t-test IVs by vote choice

AACVP	**Trump** (n=9903) mean±SD			**Biden** (n=9903) mean±SD		
	Yes	No	P-values	Yes	No	P-values
	(n=2433)	(n=7470)		(n=6850)	(n=3053)	
Public Health Compliance	2.59±0.01	2.77±0.003	0.001	2.78±0.004	2.59±0.01	0.001
Trust in Federal Health Institution	5.59±0.06	7.53±0.03	0.001	7.67±0.03	5.67±0.06	0.001
CMPS	**Trump** (n=9779) mean±SD			**Biden** (n=9779) mean±SD		
	(n=2497)	(n=7282)		(n=6767)	(n=3012)	
Mask wearing	0.57±0.01	0.83±0.003	0.001	0.84±0.003	0.6±0.01	0.001
Trust in Federal Institution	2.01±0.013	2.29±0.01	0.001	2.34±0.01	1.98±0.01	0.001
Medicare for All	1.98±0.02	3.16±0.01	0.001	3.19±0.01	2.10±0.02	0.001

To ensure that the relationship between the primary independent variables health attitudes/behaviors and vote choice during the 2020 US presidential election is not spurious, multivariate regressions are implemented to control for confounders and alternative hypotheses. The 2020 African American COVID-19 Vaccine Poll (AACVP), and the 2020 Collaborative Mulitiracial Post-Election Survey (CMPS) implemented a post-stratification weight with a ranking algorithm by race based on the 2019 American Community Survey (ACS) census estimates to ensure that results from the sample statistical analysis are representative of those of the population. The use of weighing helps assure that the variances of the observations are the same among groups (S. G. Anderson & Bailer, 2010).

Table 2.2 presents the results of the four logistic regressions explaining vote choice. After controlling for demographic variables (race, gender, age, and education), risk factors (health insurance, preexisting conditions), partisanship, and economic factors (income, employment, perception of the national state of the economy, and perceptions of personal state of the economy), the results suggest that there is a significant relationship between public health attitudes/behaviors and vote choice.

Overall, the results suggest that public health attitudes/behaviors tend to be negatively related to voting for Trump and positively related to voting for Biden. The results appear to corroborate Hamilton & Safford (2021)'s observation that the overt discrepancy between Trump and health institutions such as the CDC has influenced a feeling of mistrust in science among a significant part of the population. Table 2.2 confirms these findings as health attitude and behavior measurements are negatively related to voting for Trump. When using the AACVP, the variable public health compliance is statistically significant at the 0.001 level and negatively related to voting for Trump. On the other hand, public health compliance is statistically significant at a 0.001 level and positively related to voting for Biden. This result suggests that people who are more likely to follow COVID-19-related public health guidance such as mask-wearing, social distancing, self-quarantine, and others

are more likely to vote for Biden and less likely to vote for Trump. The first hypothesis of this research is therefore confirmed.

Trust in Federal Health Institution is the second primary variable used in this paper to explain vote choice. Table 2.4 suggests that trust in federal health institutions is statistically significant and negatively related to voting for Trump at the 0.001 level and statistically significant and positively related to voting for Biden. This finding confirms the second hypothesis of this research. Using the CMPS survey, I used the variable mask-wearing as a proxy to measure public health compliance. In addition, the variable trust in the federal government is used as a proxy to measure trust in federal health institutions.

Similarly to results from the AACVP survey, mask-wearing is statistically significant at a 0.001 level and positively related to voting for Biden, while negatively related to voting for Trump. People who follow public health guidance established to lower the spread of COVID-19 are less likely to vote for Trump during the 2020 US presidential election. This finding corroborates the first hypothesis of this research: public health compliance is negatively related to voting for Trump and positively related to voting for Biden. Trust in federal institutions is also statistically significant at a 0.001 level and positively related to voting for Biden while negatively related to voting for Trump. This finding confirms the second hypothesis: trust in federal (health) institutions is positively related to voting for Biden and negatively related to voting for Trump.

Health policy preference is also a significant predictor of vote choice during the 2020 US presidential. The data from the CMPS suggests that regarding the support for Medicare for all, the variable is statistically significant at 0.001 level for both Trump and Biden models but negatively related to voting for Trump while positively related to voting for Biden. This finding confirms the third hypothesis of this research: support for Medicare for all is positively related to voting for Biden and negatively related to voting for Trump.

Table 2.2 suggests a variation in vote choice in terms of demographic characteristics.

When using the AACVP survey, age is statistically significant at 0.001 level and negatively related to voting for Biden and positively related to voting for Trump. A. C. Cook et al. (2017) find that Trump support is highly pronounced in the older population, specifically those aged 65 years and above. This finding is, to a certain extent, confirmed in this paper with a positive relationship between age and vote for Trump. However, using the CMPS data, there is no statistical significance between age and vote choice.

This paper also suggests that there is a media effect on vote choice. Controlling for two ideological television channels: CNN and Fox News, Table 2.2 shows that news access from these news channels is statistically significant and related to voting choice. The AACVP data from Table 2.2 shows that people watching the news on CNN are less likely to vote for Trump, while those watching Fox news are more likely to vote for Trump. Conversely, people watching the news on CNN are likelier to vote for Biden, while those watching news on Fox News are less likely to vote for Biden. The same results are found using the CMPS data. News consumption from CNN is statistically significant and negatively related to voting for Trump, while positively related to voting for Biden.

Similar results are found by Tari & Emamzadeh (2018), who argued a "CNN effect" on Republican candidates. People receiving news from CNN tend to be less likely to vote for Republican candidates. Immigration-related discrimination is statistically significant at a 0.001 level and negatively related to voting for Trump during the 2020 US presidential election. However, there is no statistical significance between the perception of immigration-related discrimination and voting for Biden. This suggests that people aware of immigration-related discrimination are less likely to vote for Trump. This finding may be explained by the hostile rhetoric used by the president during his mandate and his presidential campaign against African and Latino immigrants.

Table 2.4: Logistic regression: Vote choice

	Trump AACVP	Biden AACVP	Trump CMPS	Biden CMPS
Public Health Compliance	−0.39***	0.42***		
	(0.09)	(0.09)		
Mask wearing			−0.99***	0.96***
			(0.10)	(0.10)
Trust in federal health institutions	−0.21***	0.23***		
	(0.01)	(0.01)		
Trust in federal institutions			−0.28***	0.22***
			(0.06)	(0.06)
Medicare for all			−0.60***	0.62***
			(0.04)	(0.04)
Health Insurance Types				
Private Insurance	0.01	0.11	−0.29	0.24
	(0.14)	(0.13)	(0.18)	(0.16)
Medicare	−0.05	0.13	−0.37	0.13
	(0.15)	(0.14)	(0.20)	(0.18)
Medicaid	−0.20	0.38*	−0.25	0.18
	(0.15)	(0.15)	(0.21)	(0.19)
Other Insurance	−0.28	0.11	−0.26	0.26
	(0.21)	(0.20)	(0.23)	(0.20)
Preexisting condition	0.08	−0.03		
	(0.08)	(0.08)		
Partisanship				
Democrat		4.18***		2.90***
		(0.10)		(0.10)
Republican	4.19***		3.07***	
	(0.10)		(0.10)	
Independent	1.55***	2.29***	0.37	−0.08
	(0.09)	(0.09)	(0.24)	(0.21)
Race				
Latinos	−0.73***	0.73***	−0.56***	0.50***
	(0.11)	(0.10)	(0.11)	(0.11)
Blacks	−1.85***	1.60***	−1.88***	1.55***
	(0.14)	(0.12)	(0.14)	(0.12)
Asian Americans	−0.65***	0.73***		
	(0.16)	(0.15)		
Pacific Islander	−0.62	0.61		
	(0.38)	(0.35)		
Native Americans	−0.43	0.39		
	(0.33)	(0.32)		
AAPI - races			−0.37**	0.63***
			(0.11)	(0.10)
Female	0.24***	−0.21**	−0.25**	0.03
	(0.07)	(0.07)	(0.09)	(0.08)
Age	0.16***	−0.10***	−0.02	0.03
	(0.03)	(0.02)	(0.03)	(0.03)
Education	0.06*	−0.06*	−0.03	0.04
	(0.03)	(0.03)	(0.03)	(0.03)
Income	−0.07**	0.06*		
	(0.03)	(0.03)		
Unemployment	0.16	−0.15	−0.06	−0.10
	(0.09)	(0.08)	(0.14)	(0.13)
Media TVs				
CNN	−0.27***	0.25***	−0.73***	0.71***
	(0.02)	(0.02)	(0.04)	(0.04)
Fox News	0.30***	−0.28***	0.82***	−0.79***
	(0.02)	(0.02)	(0.04)	(0.04)
Economic voting				
National state of economy			−0.32***	0.31***
			(0.04)	(0.04)
Personal state of economy			−0.06	0.10*
			(0.05)	(0.04)
Immigration policies			−0.68**	0.10
			(0.21)	(0.19)
AIC	5029.79	5084.30	4100.37	4717.19
BIC	5185.22	5239.73	4258.50	4875.33
Log Likelihood	−2492.90	−2520.15	−2028.18	−2336.60
Deviance	5281.85	5466.86	3925.91	4556.01
Num. obs.	8648	8648	9779	9779

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Race is a significant factors explaining vote choice in the United States (McDermott, 1998; Canon & Posner, 1999; Hutchings & Valentino, 2004; Walton Jr et al., 2020; Garcia & Sanchez, 2020). This research corroborates the impact of race on vote choice during the 2020 US presidential election. Using the 2020 AACVP survey, Table 2.4 suggests that Latinos, African Americans, and Asian Americans are less likely to vote for Trump than Whites, which is at a 0.001 level of statistical significance. On the other hand, the same racial groups are more likely to vote for Biden than Whites, which is also at a 0.001 level of statistical significance. Sanchez & Gomez-Aguinaga (2017) observed that Latinos were less likely to vote for Trump during the 2016 US presidential election than Whites. This research corroborates this finding as identifying Latino (compared to Whites) is statistically significant and negatively related to voting for Trump during the 2020 US presidential election. A similar analysis can be applied to African Americans. Myrdal et al. (1944) observe that African Americans are more likely to vote for a Democratic candidate than a Republican candidate. Table 2.2 shows that African Americans (compared to Whites) were less likely to vote for the Republican candidate Donald Trump during the 2020 US presidential election while more likely to vote for the Democratic candidate Joe Biden.

Regarding Asian Americans, Okamoto (2003) argue that Asians are less likely to support candidates having discriminatory rhetoric and policies against Asians. For example, table 2.4 shows that Asian Americans are less likely to vote for Trump than Whites. This may be explained by Trump's divisive rhetoric during the 2020 US presidential election against China and the COVID-19 outbreak. Results found using the AACVP are also corroborated using the CMPS data. Latinos and African American communities are less likely to vote for Trump than Whites and more likely to vote for Biden at a 0.001 level of statistical significance.

Another important aspect influencing vote choice is partisanship (Schattschneider, 1942; Downs, 1957; Aldrich, 1995; Huckfeldt et al., 1999; Kam, 2005; Squire, 1992; Bartels, 2000;

Bartels & Zaller, 2001). Table 2.4 shows that partisanship is significantly related to voting choice at a 0.001 level of statistical significance across all models. Republicans are more likely to vote for Trump than Democrats, and this finding is significant using both the AACVP data and the CMPS data. Similarly, Democrats are more likely to vote for Biden than Republicans. Voters use partisanship as a shortcut heuristic to make their choice. Controlling for Independents, the results suggest that Independents are more likely to vote for Trump than Democrats and more likely to vote for Biden than Republicans using the AACVP data. The CMPS data shows no statistical significance between independent and vote choice. As shown in Table 2.4, race and partisanship remain strong predictors of vote choice. To ensure that the effect of public health attitudes/behaviors is not overweighted by race and partisanship, Figures 2.3 and 2.4 present the predicted probabilities of public health attitudes/behaviors per race and political parties holding the other variables at their mean.

The confidence interval shows where the actual estimated population is likely to be when using the samples for estimation purposes. This means that confidence intervals depend on the sample size. The higher the sample, the narrower the confidence interval. The confidence level shows a parameter's likelihood in the predicted probability of being in a specific range of values. A narrow confidence interval suggests a smaller margin of error and, thus, a precise estimate of the probabilities in the actual population. A higher confidence interval suggests a higher margin of error and, therefore, an imprecise estimate. The margin of error represents the uncertainty of using the sample to estimate the population.

Figure 2.3 shows the predicted probabilities of public health compliance for Blacks, Latinos, and White, whether they are Republicans or not, to vote for Trump. In all cases, the slope is negative. This result demonstrates that public health compliance is a good predictor of voting for Trump during the 2020 US presidential election. As public health compliance increases from 1 to 5, the predicted probabilities for Latinos Republican to vote for Trump

decrease from 0.90 to 0.65, thus a 25% decrease.

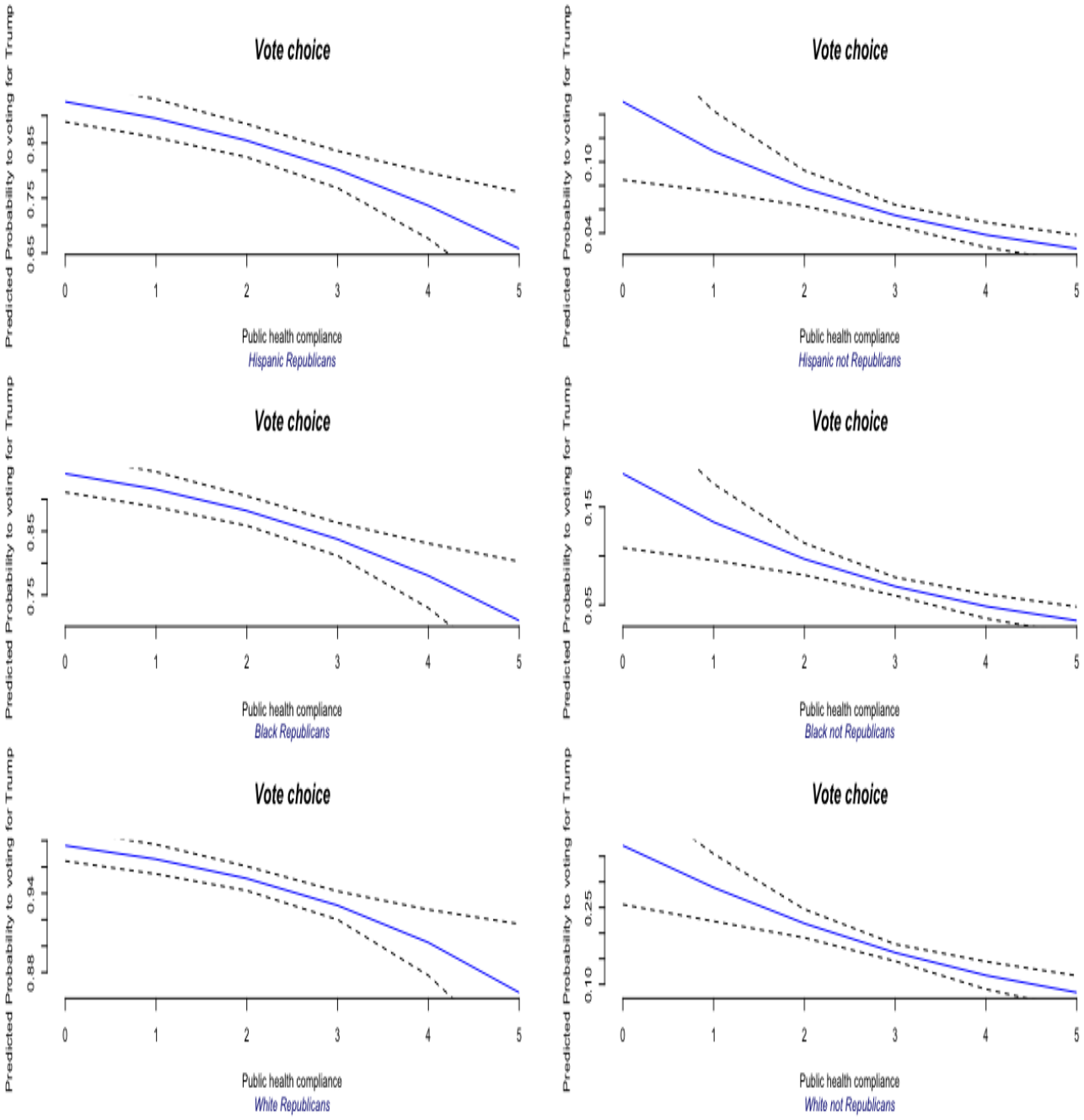

Figure 2.3: Predicted probabilities of Public Health Compliance by party and race: Vote for Trump

For non-Republican Latinos, as public health compliance moves from 1 to 5, the predicted

probability of non-Republican Latinos voting for Trump decrease from 0.2 to 0.04, thus a 16% decrease. The magnitude of effects of public health compliance among Latinos Republicans (-(0.9-0.65/5-1) = -0.06) is lower than that of non-Republican Latinos (-(0.2-0.04/4-0) = -0.04). This result suggests that the more Latinos Republicans are public health compliant, the less they are to vote for the Republican candidate Trump, which is lesser than non-Republican Latinos. Similar results are found among Blacks Republicans and Whites Republicans. The magnitude of effects of public health compliance among Blacks Republicans (-(0.9-0.75/4-2)=-0.075) is lower than that of non-Republican Blacks (-(0.15-0.05/4-1)=-0.033). This result suggests that the more Black Republicans are public health compliant, the less they are to vote for the Republican candidate Trump, which is lesser than non-Republican Black. The same finding is also applied to White. Using the same process with Latinos and Blacks, the more White Republicans are public health compliant, the less they are to vote for the Republican candidate Trump, which is lesser than non-Republican White.

The same observations are found in Figure 2.4. Again, the slope of trust in federal health institutions is negative, and its magnitude of effects is overall lower among Latinos, Blacks, and White Republicans than it does among non-Republican Latinos, Blacks, and White.

Figure 2.4 shows that Blacks, Latinos, and Whites identifying themselves as Republicans are less likely to vote for the Republican Candidate Trump as their level of trust in Federal health institution increase, which is lesser than Blacks, Latinos, and Whites who do not identify themselves as Republicans.

Figure 2.5 shows the predicted probabilities of public health compliance for Blacks, Latinos, and White, whether they are Democrats or not, to vote for Biden. Regardless of race or the political party, the slope is positive. This result unveils the salience of public health compliance as a predictor of vote choice during the 2020 US presidential election. As public health compliance increases from 1 to 5, the predicted probabilities for Latinos Democrat to vote for Biden increase from 0.96 to 0.98, thus a 2% increase.

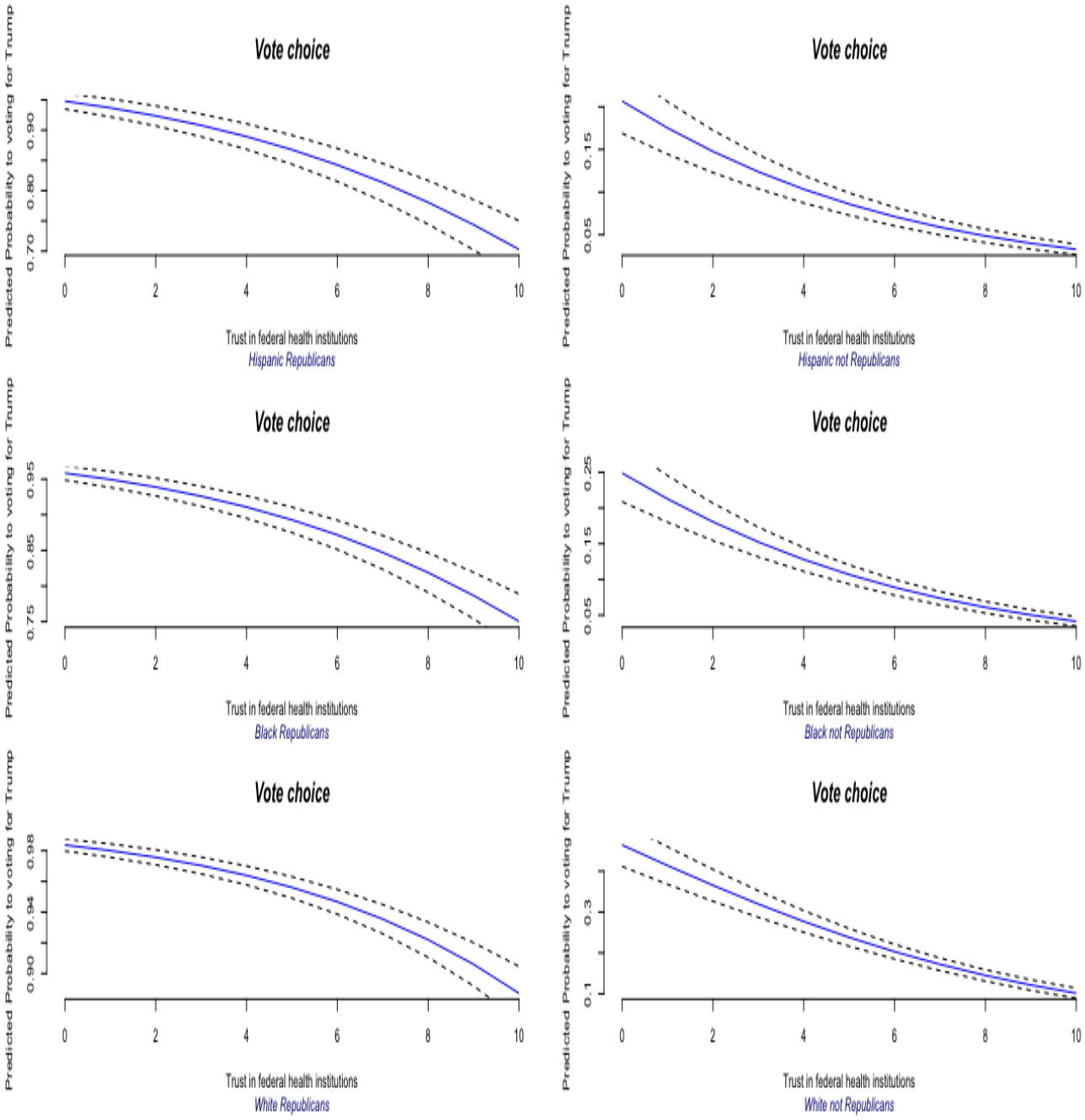

Figure 2.4: Predicted probabilities of Trust in Federal Health Institutions by party and race: Vote for Trump

For non-Democrat Latinos, as public health compliance moves from 1 to 5, the predicted probability of non-Democrat Latinos voting for Biden increase from 0.25 to 0.6, thus a

35% increase. However, the magnitude of public health compliance's effects on voting for Biden (0.02/4 = 0.005) is lower than that of non-Democrat Latinos (0.35/4 = 0.09). This result suggests that the more Latinos Democrats are public health compliant, the more they are to vote for the Democrat candidate Biden, which is lower than non-Democrat Latinos. Similar results are found among Blacks and Whites Democrats. The magnitude of effects of public health compliance to vote for Biden is (0.99-0.95/5-1=0.01) is lower than that of non-Democrats Blacks (0.5-0.2/4=-0.075). This result suggests that the more Black Democrats are public health compliant, the more they are to vote for the Democrat candidate Biden, which is lower than non-Democrat Blacks. The same finding is applied to White. Using the same process used with Latinos and Blacks, the more White Democrats are public health compliant, the more they are to vote for the Democrat candidate Biden, which is lesser than non-Republican White.

The same observations are found in Figure 2.6. Again, the slope of trust in federal health institutions is positive, and its magnitude of effects is overall greater among Latinos, Blacks, and White Democrats than it does among non-Democrats Latinos, Blacks, and White. Figure 2.6 shows that Blacks, Latinos, and Whites identified as Democrats are more likely to vote for the Democrat Candidate Trump as their level of trust in Federal health institution increase, which is lesser than Blacks, Latinos, and Whites who do not identify themselves as Democrats.

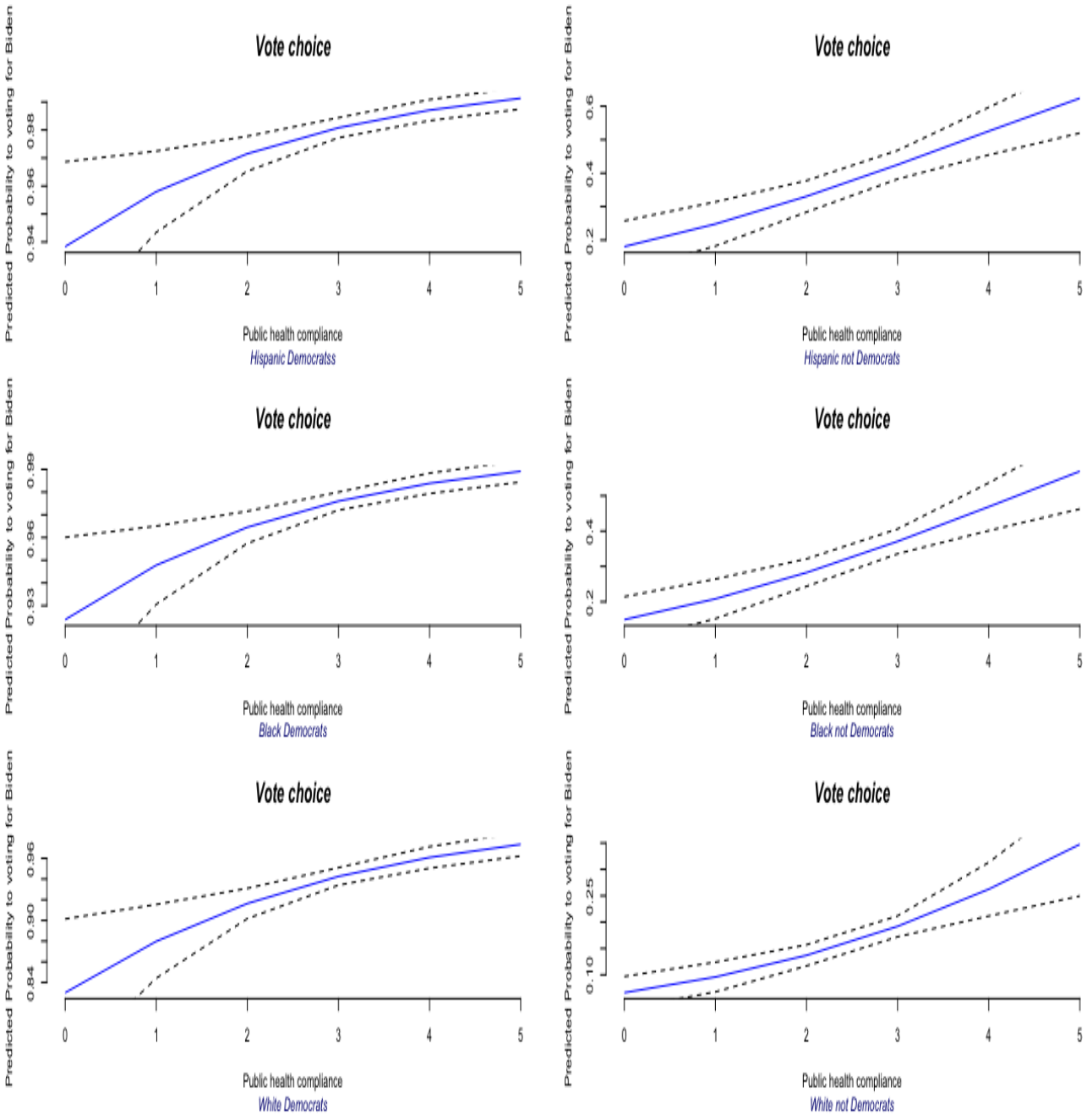

Figure 2.5: Predicted probabilities of Public Health Compliance by party and race: Vote for Biden

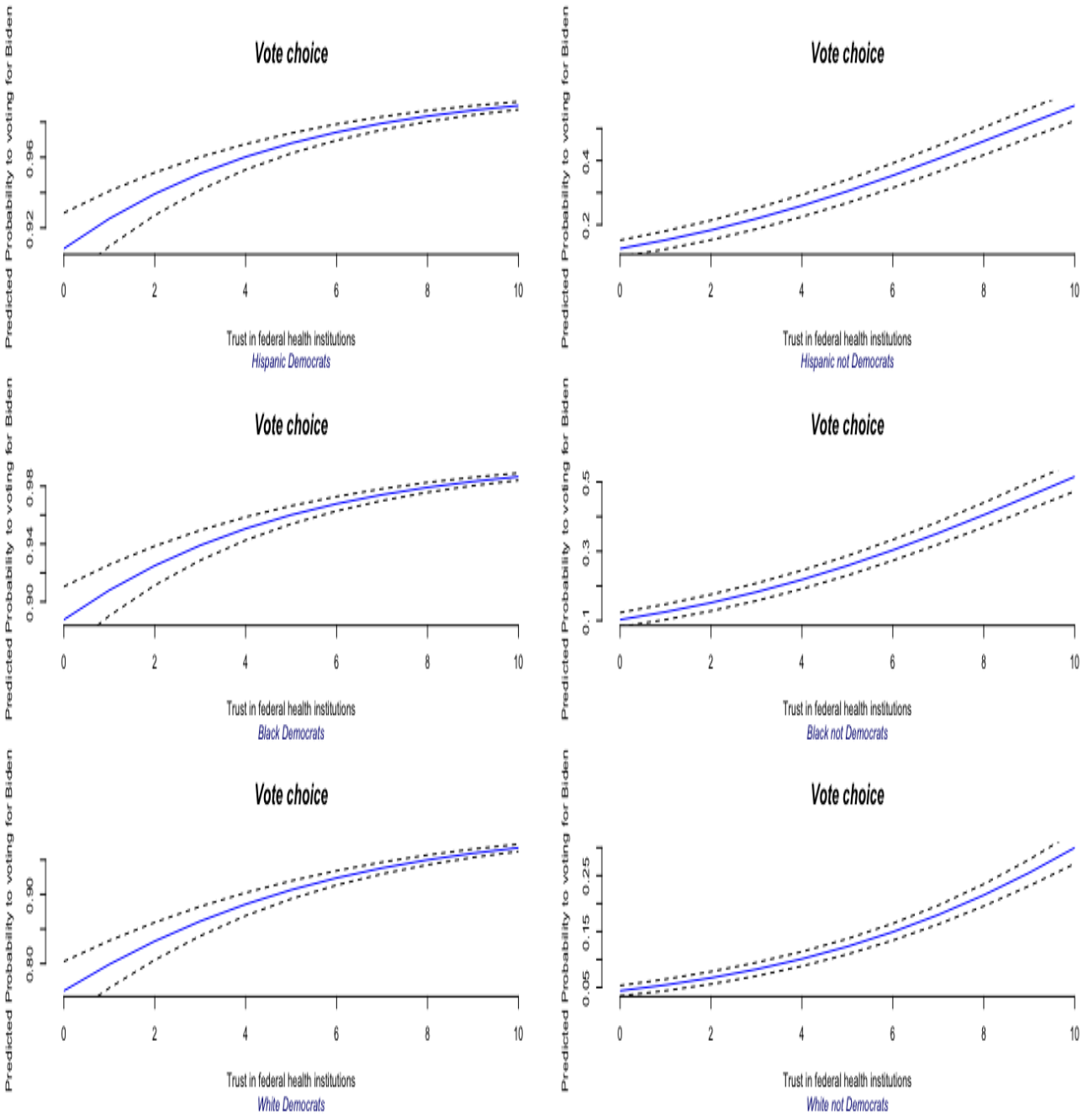

Figure 2.6: Predicted probabilities of Trust in Federal Health Institutions by party and race: Vote for Biden

2.5 Conclusion

This research addresses the influence of health attitudes and behaviors within the power dynamic of the political system. Using Easton's cybernetics approach to the political system, this paper evaluates how health attitudes and behaviors in a COVID-19 context affect the power dynamics within the political system. In this sense, health attitudes and behaviors are not merely output from the political system but also inputs. Health-related demands from the constituents (social environment) get processed within the political system through political participation. The 2020 US presidential election demonstrates how health-related concerns influenced the power dynamics within the political system and brought about policy change. The analysis of the 2021 African American COVID-19 Vaccine pool (AACVP) designed and implemented by the African American Research Collaborative Team and that of the Collaborative Multiracial Post-Election Survey (CMPS) demonstrates the significant relationship between public health and political behaviors.

This paper demonstrates that factors such as public health compliance, trust in federal health institutions, and health policy preference, such as the perception of Medicare for all, are related to voting choice during the 2020 US presidential election. Both public health compliance and trust in federal health institutions appear negatively related to voting for Trump and positively related to voting for Biden, which confirms the two first hypotheses of this research. Perception of Medicare for All is also negatively related to voting for Trump, while positively related to voting for Biden. While other factors may explain the failure of the incumbent candidate during the 2020 presidential election, it is clear that health attitudes and behaviors have been determinant in explaining the voting out of Donald Trump. The willingness to follow health guidance as a response to the COVID-19 pandemic, such as social distancing, mask-wearing, and self-quarantine in case of potential exposure, appears to be negatively related to voting for Trump. The same analogy can be applied to trust in federal

health institutions. By opposing public health guidance and contradicting federal health institutions in many instances, President Trump sent out signals that negatively affected his chance to be reelected. The 2020 US presidential election unveils the cyclical nature of the political system, where health is not only an output of the political system but also input through a feedback loop system. The following chapter addresses health as an output of the political system—precisely, the political determinants influencing COVID-19 vaccine uptake and vaccine hesitancy in the US.

2.6 Future research

This research aligns with research addressing the interconnection between public health behavior and political behavior. While this research is cross-sectional, a longitudinal analysis will certainly help improve our understanding of the interconnection between these two aspects of public life. For example, a longitudinal analysis will clarify the seasonality nature of health-related questions and how they affect power dynamics within the political system. Although the availability of data limits such types of analysis, more cross-sectional analysis intending to measure the magnitude of the effects of health attitudes and behaviors on other types of political participation, such as voter turnout and other political mobilization efforts, will improve our understanding of the relationship between health behaviors and political behaviors.

Chapter 3

Health behavior as an output: Policy and Politics in COVID-19 vaccine uptakes across the United States

The systems theory considers society through an organism lens, where institutions acting like organs have specific functions that regulate and shape attitudes and behaviors of the social environment (Macionis, 1944; Urry, 2012). Decisions and abstention are essential components of the policymaking process that influences behaviors among the constituents. This organic view of the policymaking process implies a holistic analysis of factors influencing constituents' behaviors in the aftermath of the implementation process.Even nondecisions bear significance as decisions.[1] The refusal of President Trump to use the Defense Production Act to increase the supply of relevant health goods and services[2] was a nondecision that affected the overall public health of the United States as well as the attitudes and behaviors among the electorate (Peres, March 26, 2020).

[1]Trump's nondecision (abstention) to address COVID-19 at its early stage in the United States, for example, was motivated by the Trump administration's desire to prevent an economic collapse Madrigal & Meyer (2020)

[2]Personal Protective Equipment (PPE), ventilators...

According to the system theory, the political system operates as an information center, where demands from the social environment (both endogenous and exogenous) are processed, and responses to demands are produced. These responses get evaluated in the social environment and can engender new demands through a process of feedback loops. Addressing the interconnections between health and political behaviors through the lens of the system theory (Easton, 1955, 1965, 1981) helps clarify the role that health behaviors play in the cycle of the policymaking process. As we saw in the previous chapter, health behaviors are structural determinants of the power dynamics within a political system. However, the political system also shapes and alters health behaviors through feedback loops. While the previous chapter addressed health behaviors as a determinant of political behaviors, this chapter intends to address health behaviors as an output of the power dynamic of the political system.

The current pandemic is an excellent example of how health attitudes and behaviors influence politics through political participation (vote choice) but is also influenced and affected by decisions enacted in the political system. Also known as "severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2)," the COVID-19 pandemic constitutes a significant focus event that has shaken the world since January 2020 (Lai et al., 2020). The high rate of contagion and the possible death associated with the virus make COVID-19 an unavoidable and overarching public health issue that most countries of the world have to face. Furthermore, COVID-19 has unveiled the unpreparedness of most countries in handling a global pandemic. There has been an apparent inadequacy between the supply and the demand of health goods and services regardless of national health care systems.

On August 23, 2021, the Food and Drugs Administration (FDA) approved the first COVID-19 vaccine, Pfizer-BioNTech COVID-19 Vaccine, for the general public (16 years and older)[3]. By that time, the US had 38 million COVID-19 confirmed cases and 626,439

[3]After authorizing an emergency use of that vaccine on December 10, 2020.

COVID-19-related deaths.[4] The high rate of the spread of the virus, coupled with the alarming number of deaths, marks the COVID-19 pandemic as a national security issue. Therefore, developing and implementing massive vaccination campaigns are strategies that most public health experts and pundits have advocated, not only in the United States but the world overall, to address the pandemic (Gates, 2020b,a).

The FDA's first approval of the COVID-19 vaccine was a glimpse of hope of a return to normalcy. This approval was done months after the 2020 US presidential election and the inauguration of President Joseph Robinette Biden Jr. as the 46th president of the United States. President Biden implemented a massive vaccination campaign with the intent of vaccinating 70% of Americans and reaching herd immunity. In this context, the contagion rate decreases gradually and eventually disappears until a significant portion of the population is protected against the virus. As of April 25, 2022, 66.1% of Americans were fully vaccinated for COVID-19. However, from the intensive deployment of vaccines across the United States to the use of narrative and policy images such as public figures facilitating the vaccine acceptance among the population (Bokemper et al., 2021), vaccination is still not making unanimity among the population. What could explain these variations in vaccine uptake among the population in the United States? Are there any policies and political factors that influence the acceptance of vaccines in the population? This chapter evaluates how health access influences COVID-19 vaccine uptake to understand how policies may have affected vaccination uptake. The second strand of this research addresses how political factors such as partisanship and trust in local members of Congress influence vaccine acceptance.

[4]For more information, check out: COVID-19 by country Last retrieved 04/25/2022.

3.1 Background

3.1.1 Analysis of the COVID-19 pandemic through the lens of policy change

Lasswell (1956) envisioned the field of Public Policy as a science helping governments to anticipate and control unexpected events by informing political leaders about the current and expected needs of the citizens. Analyzing the COVID-19 pandemic response can be done using the *consumer-producer* theory, where the government (the producer) assures the availability of health goods and services (vaccine, therapeutic, healthcare workers, drugs, PPE...). Citizens also participate in the production of health services by following the guidelines provided by the government (get vaccinated, social distancing, wearing masks). Citizens and the government work to ensure the availability of limited public goods (health services) to everyone. Government and decision-makers implemented awareness campaigns to influence citizens' participation in the policymaking process and thus restrict the spread of the virus on the population. D. Crow & Jones (2018) observe that framing narratives using emotional appeal for policy change affects perceptions about risks within the population. Trust in the vaccine as a solution to return to "normalcy" is a good example. Public officials used emotional appeal (vaccines as protection for our communities) and scientific evidence (vaccination trials statistics) to increase vaccine acceptance. Yuan (2020) argues that information provided promptly helps the population to gain trust in the policymaking process. Apuzzo & Gebrekidan (2020) contend that the consistency of the political message also matters. When governments provide accurate information, trust in the policymaking process increases. However, when narratives are overloaded with emotional and partisanship appeals and less scientific evidence, it creates mixed effects on trust.

The COVID-19 pandemic hit America on January 20, 2020, with the first known case. As soon as cases became concerning in China, national and international institutions across

the world implemented strategies to control the expansion of the virus. One of the first responses adopted by many governments worldwide to contain the spread of COVID-19 has been through the reinforcement of national sovereignty. Weible et al. (2020) observe that one of the first instruments that many governments around the world used to fight the COVID-19 pandemic was border controls and the limitation of immigration. In addition, Walker et al. (2020) observe that countries worldwide were forced to revisit trade-offs between economic concerns, international cooperation, and public health needs. In the United States, for example, bipartisan decisions such as the COVID-19 economic relief have been implemented despite the state of political polarization that affects the country (Werner et al., 2020).

The CDC operationalized the Emergency Operations Center (EOC) to contain the effects of the potential pandemic (Dzigbede et al., 2020). This action of the CDC attests to the seriousness of the pandemic. As soon as significant issues affect the constituents, institutions express responses intending to solve the issues. In the case of the COVID-19 pandemic, the CDC has promoted vaccination as the most effective way to address the pandemic. To ensure that the vaccination is effective and accessible by all, the government funded the vaccination to be accessible free of charge to the constituents. Operation Warp Speed is an example of mass vaccination strategies that intend to eradicate the pandemic in the United States (Sanger, 2020). However, even though the government funds the COVID-19 vaccine to free of charge for the cosntituents, a significant percentage of the population refuse to vaccinate against COVID-19. To understand the dynamic of the pandemic within the political system, the following section analyzes the COVID-19 response in the United States through the lens of the system theory.

3.1.2 Vaccine uptake through the lens of the system theory

The system theory can be regarded as a structural-functionalism approach where institutions, rules, and norms assure stability and cooperation in the social environment. Herbert

Spencer considers the social system as stable where changes occur by adaptation (Herbert Spencer as cited in Perrin, 1995). Durkheim (1888) goes further by differentiating factors of stability of the political system between pre-industrialized and industrialized society. While *mechanical solidarity* is what maintains stability in pre-industrial society through shared values, norms, and traditions, *specialization*, institutionalization, and categorization are what maintain stability in the political system in industrial society (Macionis, 1944). In such societies, political leaders are not *charismatic* or *traditional* in Weberian terms, but legal-rational authorities gaining their authority (mandate) through democratic elections (Weber, 1978). In that sense, only elections mandate political leaders to act on behalf of their constituents. With legal-rational leadership, power resides within the institution and is beyond the officeholder. In such a society, policies are predictable as they are designed and empowered by legal agreements such as treaties, charters, or constitutions intended to solve social issues. Constitutions and other forms of legal agreement are embodied through institutions and social control. Parsons (1980) argues that *social control* refers to the process where institutions promote and maintain rules and accepted norms in society. Social control is reinforced by accreditation (Deleuze, 1992) and is fundamental to any policymaking process. Accreditated institutions such as public health institutions can exert social control because of their status recognition. For example, health institutions such as the CDC have been influential in informing decision-makers during the pandemic.

The COVID-19 pandemic has been an exogenous shock that affected most political systems in the world, particularly that of the United States. With a daily high incidence rate of 20 over 100,000 per day as of April 2022[5] in the United States, the COVID-19 pandemic has been categorized as a national security threat. Vaccination has been regarded as the primary strategy to protect a population against preventable diseases. Roush et al. (2007) contend that vaccinations against preventable diseases in the United States have been 100%

[5]Source: https://www.nytimes.com/interactive/2021/us/covid-cases.html. Last retrieved 5/4/202.

effective in lowering death rates and 90% effective in lowering exposure.[6] Other studies, such as those of Magner (2009), and Brunton (2008) corroborate the effectiveness of vaccines in preventing death and exposure to many preventable diseases.

The approval of the COVID-19 vaccines by the Food and Drug Administration (FDA) intended to increase immunization against COVID-19 in the population to promote herd immunity. To optimize the effects of vaccination on the population, federal institutions such as the CDC promoted contact tracing strategies to capture and surveil COVID-19 incidence rates within the population (Joseph, 2020). In March 2020, Congress passed the CARES Act to provide financial relief to citizens economically affected by the pandemic, finance the distribution of vaccines across the country, and finance COVID-19 surveillance programs such as contact tracing. The success of such policies depends on the quality of the public institutions implementing those public policies.

Public Policy intends either to maintain the status quo or to stimulate changes in response to social demands (Dye, 1976; J. E. Anderson, 1984). Public policies are purposive by nature as they intend to solve social issues. Theodoulou & Cahn (1995) observed that public Policy intends not only to optimize the allocation of scarce public resources to the population but also to solve collective action problems by an authoritative allocation of values and choices. Birkland (2019) argues that public policies are backed by coercive powers facilitating the implementation process.

Lerner & Laswell (1951) argue that policies in a democratic context are value-driven. This suggests that decision-makers consider existing values and preferences in the population to make policies. Understanding the factors influencing behaviors is an essential component of the policymaking process. Theories such as the Health Belief Model (HBM) have helped explain people's motivation to get vaccinated. The Health Belief Model suggests

[6]Their study address vaccination against "diphtheria, pertussis, tetanus, poliomyelitis, measles, mumps, rubella (including congenital rubella syndrome), invasive Haemophilus influenza type B (Hib), acute hepatitis B, hepatitis A, varicella, Streptococcus pneumonia, and smallpox."

that attitudes, perceptions, and past behaviors significantly affect public health. Specifically, perceived susceptibility, perceived benefits, perceived barriers, and self-efficacy are the theoretical constructs of the HBM.

Janz & Becker (1984) argue that structural factors such as socioeconomic status and psychological characteristics such as personality influence people's preferences and the weight that they assign to the benefits of accessing public health services such as getting vaccinated. In addition, vaccine uptake seems to be related to past health behaviors. Alhalaseh et al. (2020) found that people who typically got vaccinated were more likely to continue vaccinating than those who did not. Furthermore, beliefs and perceptions influence health behaviors. C. J. Carpenter (2010) observed that the promotion of health services is essential because it helps improve quality of life and shapes people's beliefs and perceptions about public health services. "Cues to action" are the end goals of the HBM. Janz & Becker (1984) argue that understanding predictors influencing public health services acceptance in the population shapes policy. Applied to the COVID-19 vaccine uptake, Zampetakis & Melas (2021) observed that perceptions about the severity of the pandemic are the determinant factors influencing vaccine uptake. This suggests that to increase the acceptance of the vaccine among the population, public health institutions need to be transparent about the dangerousness of COVID-19 to human health. However, to be effective, institutions must be acquainted with constituents' perceptions of social issues and the force influencing these perceptions. The following paragraph addresses public attitudes about the COVID-19 pandemic in the United States.

3.1.3 COVID-19 vaccine uptake in the public opinion

Public opinion is one source where researchers find attitudinal information about health policy and politics. Public opinion expresses constituents' public evaluation of social issues. These evaluations are functions of time and information available (bounded rationality).

Soroka & Wlezien (2010) argues that public opinion and policy preferences are goal-oriented. Citizens preferred either to maintain the status quo or trigger policy change. Trust is at the base of citizen evaluation of public policies.Schlesinger (2013) observes that there has been a growing government distrust among the electorate in the United States. As public health is an emanation of the government in the health sector, its impact on society can be adversely affected by the growing distrust of the government observed in the population. Public health intends to improve the life quality of the population and reduce health-related anxiety affecting people's performance in their life. Hacker (2006) considers a central function of the government is to provide health security to the population. This suggests that mistrust between the government and the constituents can cause low acceptance of public service, specifically health services such as vaccination, among the population. The case of public policy in the health sector is a good example, as the target of public health is the population, understanding how the electorate perceives health security help explain health policies and why some policies are more successful than other (Schlesinger, 2011).

Because they influence significant portions of the population, political elites and public opinion leaders can influence policy acceptance among the population. Schlesinger (2013) contends a significant portion of the electorate replicates opinions from political leaders rather than making their own. The growing inattention to political affairs observed among the population might explain this overreliance on public opinion leaders. Carpini & Keeter (1996), and Jamieson & Hardy (2011) observe that the high inattention to political matters among the American public explains the observed low political knowledge in the population, but also the strong influence of political leaders on public opinion.[7] However, Brodie et al. (2003) find that attention to political issues tends to increase in time of health-related focus event. Exogenous choc, such as the COVID-19 pandemic, is accompanied by a high level of

[7]Brodie et al. (2003) observe that less than one-fifth of the American population pays attention to political matters through media and political mobilization.

attention to public affairs by the population. "Issue-attention" increase political knowledge among the population (Schlesinger, 2013), making the acceptance of public services most likely. Because they influence the electorate, public opinion leaders can advance "fear campaigns" to trigger outrage among the electorate and alter the power dynamics in the political system (Raphael, 2007; Saguy & Riley, 2005). These "fear campaigns" can either increase the acceptance of health services among the population or raise doubts about the efficiency and safety of existing policies.

Vaccination has been regarded as the most efficient way to eradicate the COVID-19 pandemic. The FDA authorized the usage of the first vaccine against COVID-19 for emergency use in December 2020. In May 2021, the FDA approved the mass vaccination of people ages 16 and over with the principal goal to vaccinate over 70% of Americans and reach herd immunity. In addition, President Trump launched Operation Warp Speed to facilitate the distribution of vaccines throughout the United States. President Biden went further by mandating COVID-19 vaccination through the Occupational Safety and Health Administration (OSHA) in the United States, a mandate that the Supreme Court overruled on January 13, 2022. While a good percentage of the population has accepted vaccination against COVID-19, a significant portion remains skeptical about getting vaccinated.

Schoorman et al. (1996) argue that party leaders and policy entrepreneurs can influence people's attitudes and behaviors regarding social issues. Regarding party leaders, Mughan & Aaldering (2017) find that party leaders tend to have two types of influence over the electorate. Party leaders can help reinforce party loyalties among the electorate, or they can improve their image to the detriment of the party image. This investment in personal reputation is strategic, especially when partisanship support is weak and the likelihood of swing vote high (Barisione, 2009). Niburski et al. (2020) observe that party leaders such as President Trump have developed a powerful influence on public opinions, especially regarding health-related behaviors. President Trump can alter and break existing political norms

in public discourse. For example, Trump has been using hostile racial rhetoric to instigate fear among the electorate and to "securitize" immigration policy.[8] These forms of racist and anti-immigration speech by Trump have an "emboldening effect" on the electorate (Newman et al., 2021). After listening to Trump's hostile speeches against immigrants and communities of color, many of the population have been emboldened to use racial speeches in their daily lives. Similarly, public opinion leaders can also influence health attitudes and behaviors. Mixed signals from political leaders can negatively affect the population's acceptance of health services such as vaccination. For example, President Trump promoted the use of unproven medicines such as azithromycin, hydroxychloroquine, chloroquine, and remdesivir. In addition, President Trump promoted unfounded alternatives to the COVID-19 vaccines. Instead of vaccinating, a significant percentage of the population has investigated unproven therapies and medicines they think could cure COVID-19. Liu et al. (2020) find that there has been a significant increase in internet searches on therapies and medicines that could cure COVID-19 after President Trump's public statement on COVID-19 alternative treatments. W. Hatcher (2020) argues that the misinformation from President Donald Trump has weakened health policy intending to eradicate COVID-19 in the United States. As public opinion leaders influence health attitudes and behaviors, the following section addresses other sources of influence, such as the media.

3.1.4 The media effect: how do medias influence health behaviors?

Key Jr (2013) argue that information is at the core of the democratic process because it helps the electorate understand policy issues and express policy preferences. Media technology has facilitated the transfer of information between political institutions and the electorate. Iyengar et al. (1982) argue that priming is a powerful tool used by media to inform

[8]Buzan et al. (1998) defines securitization as the process where political leaders categorize a public issue into a matter of national security.

the electorate and influence their attitudes about policy issues. Through priming, the media filter out information and suggest to the electorate the issues they should focus on to evaluate the decision-makers. While Bennett & Iyengar (2008) argue that the media effect on the electorate is minimal because of polarization exacerbated by political leaders and political parties, Holbert et al. (2010) argue for a significant effect of media on people's attitudes and behaviors. Becker & Whitney (1980) go further by arguing that there is a dependency effect of media on people. According to them, the negative evaluation of the government results from the media effect. The expansion of media sources can cause mixed effects on the electorate. Media technology facilitates the proliferation of unproven information and conspiracy theories. Dautrich et al. (1999) find that there is a decline in trust in media as a reliable source of information in the United States. The social media explosion caused the entry of informal non-qualified journalists and investigators into the news market.

Colombo (1994) argues that the primary purpose of media is to inform, entertain, and facilitate communication between the constituents and the government. Through media, citizens have various sources of information and entertainment that can either increase their political knowledge or decrease their attention to policy issues. Prior (2005, 2009, 2013) argues that there is a "conditional political learning" in media usage, as learning depends on the level of attention given to entertainment. Specifically, the more citizens spend time on media for entertainment, the less they are to be politically sophisticated, and the less will be the media effect. News media channels are rich in electoral-related information. The more citizens spend time on news channels, the more they get political knowledge, and the more political participation will be observed (Norris et al., 2000). As citizens are bounded rationally, they use media and other political influences such as partisanship as shortcut heuristics to make their policy preferences. The question of media effect in explaining political behaviors and, to a certain extent, public health behaviors revolve around the dynamic of the effect and its magnitude (Mondak, 1995). While media priming and framing could alter citizen

attitudes toward specific policy issues, the media effect could also reinforce prior political predisposition through self-selection mechanisms. With the expansion of media on demands through social media, priming and framing effects are getting weaker and weaker. Aldrich et al. (2016) argue that elected officials and political leaders campaign regularly through social media and can get feedback from their constituents through the same channel. Besides, political elites and political parties have used self-communication through social media to connect directly with the electorate and share polarized information (Castells, 2013). Media can help improve the level of political knowledge in the electorate, reinforce and consolidate existing political predisposition within the electorate (Lazarsfeld et al., 1968), and also facilitate the transmission of policy preferences between political leaders and constituents.

An important aspect associated with news consumption is the impact of polarization. Ensor (2018) finds that media consumption is a function of partisanship in the United States. Individuals identifying as Democrats are more likely to receive news from CNN, while those identifying as Republicans are more likely to get news from Fox news. The COVID-19 pandemic provides an excellent example of the influence of partisanship on public health behavior, such as vaccine uptake (Bokemper et al., 2021; Viswanath et al., 2021; Alcendor, 2021; Fridman et al., 2021; Corcoran et al., 2021; Sylvester et al., 2022). Media channels influence attitudes and behaviors, especially when highly polarized policy issues are the center of attention. Oberlander (2010) find that when liberals control the executive government, people getting their news for Fox News are less likely to cooperate with public health services. Ideological media channels can either reinforce political predispositions or influence them. Ruiz & Bell (2021); Viswanath et al. (2021), and Fridman et al. (2021) find that people getting their news from Fox News tend to be more skeptical about getting vaccinated against COVID-19 compared to those getting their news from CNN. Controlling for media effect alongside partisanship helps measure the dynamic of the effect both have on policy preferences such as COVID-19 vaccine uptake.

3.2 Theories

3.2.1 Partisanship

One significant aspect that influenced the management of the COVID-19 pandemic in the United States is the proximity between the onset of the pandemic and the presidential election. Therefore, the management of COVID-19 has been on the agenda of most candidates during their campaigns. By sending cues to the electorate regarding their management of the pandemic, political parties, through their candidates, influenced voting behavior. Voters evaluate the candidate's party through their ideological lens and decide whether or not to vote for the candidate (Achen & Bartels, 2017). Two major approaches have been elaborated in the United States to explain vote choice: the Columbia Model and the Michigan Model (Jefferson, 2017). The Columbia model, as advocated by authors such as Lazarsfeld et al. (1944), and Lippmann (1946), posits that election campaigns have two main effects on voters: on the one hand, to consolidate perceptions and prior beliefs among the electorate, and on the other hand, to reinforces some latent predispositions of undecided voters. Social-demographic factors such as race, level of education, social class, and religious affiliation appear to be the main factors explaining political behaviors (Index of political predisposition based on social-demographic characteristics, see Berelson et al., 1954).

On the other hand, the Michigan model adopts a psychological approach focusing on individuals' attitudes and the role of partisanship. In that sense, Campbell et al. (1980) argue that partisanship is the determinant factor of voting behavior and political attitudes in the United States. Voters use the information provided by their political party as a shortcut heuristic that helps them decide. Bowler (2017) observes that partisanship expresses voters' long-term attachments toward their political party, regardless of the candidates. Partisanship influences voters' interpretation of political facts. This suggests that the way Democrats understand a policy issue should be different from the way Republicans will understand

it. Therefore, partisanship unveils a certain level of subjectivity in political attitudes and behaviors.

Brady et al. (2000) argue that voters in the United States are more likely to identify as political partisans than moderate and independent. Political parties are central components of democracy because they serve as liaisons between the political system and the constituents (social environment). Besides, political parties garner and orient voters' preferences. Schattschneider (1942), and Downs (1957) contend that the primary objective of political parties (especially the party leadership) is to win elections and increase their influence in the government. To do that, political parties need to have strong supporters in the electorate likely to identify with party ideology and policy preferences. By providing cues and information to the electorate, political parties influence their members' attitudes and voting behaviors. While winning is the primary goal of political parties, the case of the Democratic Party and the Republican Party in the United States suggests that a second important goal of political parties is their durability in time. Political parties are organized structures that have developed capacities for raising funds and donations. This financial support helps parties back up their ideology and policy preferences in the short and long term. Finally, political parties help the functioning of democracy by channeling information to the electorate. Key Jr (1959, 2013) argues that political parties have a functional role in the political system. In that sense, political parties help maintain democratic stability by making the policymaking process and political behaviors more predictable.

Political parties serve as channels where candidates compete to win constituents' votes. Through their national and congressional committees, parties are influential in raising donations and funds to support their candidates in time of election. By facilitating candidates' electioneering, political parties help improve political participation among the electorate by aggregating individuals' preferences into a common one and simplifying voters' choices by narrowing options at stake (McNamara et al., 1996). La Raja & Jarvis-Shean (2001), and

Milkis (2003) observe that political parties in the United States, with their capacities to raise funds, positively affect voter turnout.[9] Aldrich (1995) observes that political mobilization is the main characteristic of political parties. Parties assigned a significant percentage of their budget to political mobilization (D. P. Green & Gerber, 2019). This might explain why Finkel & Opp (1991) and Dalton et al. (2000) observe that partisanship is positively related to political participation among the electorate. Although party identification has declined since the 1960s (S. C. Craig, 1985; Wattenberg, 1981; Fleisher et al., 2000), there is an increase of individuals identifying themselves as "independent", and there is a decrease of straight-ticket voting (electoral volatility),[10] research suggests that partisanship remains the main predictor of attitudes and political behaviors in the United States (Plutzer & Zipp, 1996; Bartels, 2000, 2002; Cox & Poole, 2002).

Bullock & Lenz (2019) argue that partisanship is an aspect that can bias behavior because of the phenomenon of "motivated reasoning." Individuals will use emotional cues to construct their preferences (Kunda, 1990). Partisans' preferences are likely to be grounded more on party affection than rational evaluation. Parties are central in American politics because they shape behaviors and influence the decision-making process at every stage of the process (Fiorina, 1980; Bullock & Lenz, 2019). Political parties are attractive to constituents because of the ideologies and the type of policies that they promote. Aldrich (2011) argues that while professional partisans are attracted by political opportunities and other material benefits such as elections and appointments provided by political parties, policy-engaged activists are partisans that are more interested in the ideology and social benefits offered by the party. Political polarization is a driving force of activists and partisans overall. Hetherington (2001) contends that as parties' policy preferences are getting more and more distinct because

[9]Through advertisement, for example, political parties can influence a large pool of voters and capture support from swing voters (Jamieson, 1996).

[10]According to Hershey & Aldrich (2017), straight-ticket voting refer to the automatic vote for a party regardless of the election. In that sense, partisans vote for the same party in all elections in which their party is represented.

of political polarization, activists and party partisans are increasingly engaged in party promotion and mobilization. Beyond the election battle, the battle for values and policy preferences motivates activists and political parties.

As the 2020 US presidential candidate and prominent figure of the Republican party, President Donald Trump, in many instances, overtly negated public health guidance and institutions and was implicitly supported by the Republican party. Lancet (2020) argue that the Trump administration cast doubts on public health institutions such as the CDC and undermined the credibility of federal health institutions. Although Donald Trump did not negate the importance of vaccines against COVID-19, his opposition to public health guidance, as delineated by the CDC, might have influenced public opinions of the position of the Republican party on COVID-19 vaccines. In addition, vaccine mandate lawsuits by many Republican states constitute another factor that has influenced public opinions in the COVID-19 response and the position of the Republican party.

Hypothesis I: Compared to Democrats and Independents, Republicans are less likely to get vaccinated against COVID-19.

3.2.2 Personal trust in local members of Congress

A study of voting behavior, specifically voting choice, helps clarify how politically sophisticated the electorate is in evaluating the candidate's ability to perform a leadership position. The economic voting model, for example, suggests that voters evaluate the candidates according to their past performance in economic-related management. While partisanship focuses on party ideology as a heuristic, the economic voting model suggests that voters focus more on a candidate's ability to govern. In evaluating the candidates, voters adopt either a retrospective or a prospective approach. The retrospective model of economic voting is more applied to incumbent candidates and suggests that the electorate evaluate the incumbent's past economic performance to make their vote choice. The prospective vote

choice, on the other hand, suggests that the electorate evaluates the political leader based on the economic campaign promises of the candidate (Clarke & Stewart, 1994).

The economic voting model goes beyond party loyalties by advancing the idea that voters will vote based on the candidate's characteristics (personal vote). Researchers such as Fiorina (1977, 1989) and Fenno (1978) observe that the candidate's characteristics were important in influencing voters over party support. Carson et al. (2010) argues that party loyalty can be detrimental to a candidate when constituents' preferences are misaligned with the party's ideological spectrum. To ensure their reelection, some candidates may find it strategic to take some distance from party ideology, especially on salient and divisive decisions. Mayhew (1974) observes that incumbents tend to be easily reelected not because of their loyalty to their party but due to their job performance in office and personal characteristics. While Downs (1957) elaborates an ideological-based spatial model explaining voting choice, Stokes (1963) argues that ideologies matter less to the electorate. Candidates' policy preferences, as well as performance, are what matter the most to the electorate. Ansolabehere (2006) argues that voters are more likely to vote for a well-known qualified candidate even if the candidate is from a different political party.

With a decline in political party popularity in the United States (B. E. Keith et al., 1992; Silbey, 1990; Niemi & Weisberg, 1976), Krasno (2011) observes that there has been a surge in "candidate-centered" electioneering in the last decades. Independent and non-partisans tend to be influenced more by the "leadership effect" than party ideologies. This emergence of "politics of competence" (Clarke et al., 2009), suggests that voters focus more on the current state of economics than on long-held ideology and party affiliation. Tulis ([1988] 2017) by analyzing the campaign strategies of 26th US president Theodore Roosevelt and the 28th US president Woodrow Wilson, contends that both Roosevelt and Wilson have implemented candidate-centered campaign strategies by distancing themselves to the ideological spectrum of their respective political parties. The same strategies have been observed

among several members of Congress. Herrnson (1994), and Wattenberg (1992) argue that Congress members since the 1980s have developed constituents-based campaigns focusing more on their image than their political parties. By implementing candidate-centered electioneering, members of Congress consolidate better the level of trust between them and their constituents. This could explain the high likelihood of incumbent candidates' reelection in Congress since the 1950s (McGhee & Pearson, 2011).[11] Members of Congress have strategically used their official position to their advantage. Access to information and name recognition are strategic tools at the hands of members of Congress to implement a candidate-centered campaign and increase their chance of being reelected (Jacobson & Carson, 2019; Fenno, 1978; Box-Steffensmeier, 1996; Cox & Katz, 1996; Mayhew, 1974). Research suggests that the electorate's overall level of political knowledge is low (Page & Shapiro, 1982; Zaller, 1992; Lupia, 1994; Karp, 1998), to make their choice, voters will use cues from the political leaders they trust as shortcut heuristic (Sniderman et al., 1991; Collingwood et al., 2018). As members of Congress are supposed to represent the preferences of their constituents at the federal level, they possess tools and information likely to consolidate that trust between them and their constituents (Rocca & Gordon, 2013).

Fenno (1978) argues that members of Congress will adopt what he called a *home style* campaign strategy to assure that his/her policy formulation matches the constituents' preferences and therefore optimizes their chance of being reelected. Trust in a candidate is a fundamental aspect of Fenno's *home style* campaign strategy. People choose to vote for a candidate because they are confident that he/she has their best interest. By categorizing the electorate into the geographical base, primary supporters, and candidates' intimates, electoral candidates can build strategies to increase their acceptance in the electorate. By emphasizing trust between the electorate and the candidate, Fenno goes beyond partisanship

[11]Davidson et al. (2019) finds a likelihood of reelection among members of Congress around 94% of the time between 1952 and 2008.

and demonstrates that personal characteristic is a significant determinant explaining political behaviors at the institutional level (the Congress) and among the electorate. Krasno & Goldstein (2002) argues that candidates must advertise their personal characteristics and policy preferences to win primaries. By improving their image during the primaries, candidates find that it is in their best interest to continue that way in post-primaries elections (Krasno & Seltz, 2000). Slogans are powerful tools used by political candidates to improve their image and display their policy preferences. Stevenson (2010) argues that slogans are powerful expressions and narratives that intend to persuade the electorate to support the candidates. Candidates' political slogans appear to be more effective in assuring candidate victory than party image (Beard, 1928). Frantzich (1984, 1989) considers that candidate-centered electioneering is a "labor-intensive form of politic" where candidates work intensively with their staff to be endeared by the electorate rather than focusing on party partisans. In candidate-centered models, candidates tend to maximize the support from the median and independent voters by proposing policies beyond partisanship preferences (Krehbiel, 1998).

In his Farewell Address, George Washington Washington (1796) raises the concern of how the increase of political parties influences human behaviors. Political parties can bring about "the community with ill-founded jealousies and false alarms" if not well controlled. This suggests that partisanship can cause the politicization of social facts. Downs (1957) goes further by arguing that "parties formulate policies in order to win elections, rather than win elections in order to formulate policies." The case of the COVID-19 pandemic is a good example, as the pandemic occurred in the United States a few months before the presidential election. Democrats and the Republican parties proposed contradictory agendas on how the COVID-19 pandemic should be handled. While handling the pandemic first and then the economy has been the primary strategy of Democrats/Liberals, handling the economy first and then the pandemic was the foremost preference of the Republicans/Conservatives (Nicola et al., 2020). J. Green et al. (2020) find that Democratic members of Congress have

been more likely to discuss the COVID-19 public health issue than their counterparts of the Republican party.

Regarding the members of Congress, Van Green & Tyson (2020), in analyzing the Pew Research Poll about perceptions on the COVID-19 public health issue in March 2020, found that Democrats took the COVID-19 issue more significantly than Republican partisans. While the overall management of COVID-19 seems to differ between Democrats and Republicans, an analysis of cues sent by Congress members suggests a consensus between Democrats and Republicans on the COVID-19 vaccination strategy. Regardless of their party, members of Congress have been favorable to COVID-19 vaccinations. This is corroborated by bipartisan support for vaccine distribution in the United States (Flores et al., 2022; Fisk, 2021). Both Republicans and Democrats have publicly shared their COVID-19 vaccine acceptance. Like the Democratic leadership in Congress, the Republican leadership of Congress has exhorted Americans to get vaccinated. At a weekly news conference (July 21st, 2021), Mitch McConnell stated, "These shots need to get in everybody's arm as rapidly as possible, or we're going to be back in a situation in the fall that we don't yearn for, that we went through last year.... I want to encourage everybody to do that and to ignore all of these other voices that are giving demonstrably bad advice." [12]

In a trustee model of representation, as is the case in the United States, the power of the representative is based on their free mandate (Fox & Shotts, 2009) – which means that representatives express their politics as a "vocation" in a Weberian term. Voters entrust representatives to act on their behalf. While representatives may have political predispositions that could influence their judgment, they also have an ethic of responsibility toward their constituents (Waters & Waters, 2015). In a trustee representation model, representatives are autonomous in decision-making, and that autonomy is conferred to them by constituents'

[12]Check out Washington post: Growing number of Republicans urge vaccinations amid delta surge Last retrieved 06/30/2022.

trust. In that logic, representatives, through the existing political trust between them and their constituents, can influence not only the political behaviors of their constituents but also their public health behaviors, such as COVID-19 vaccine uptake. Mayhew (1974) observes that members of Congress will take a position on political issues through roll call voting and legislative debate to increase the trust between them and their constituents and maximize their chances of being reelected. Rocca (2007) goes further by arguing that position taking by members of Congress goes beyond roll call voting and are expressions of the representative policy preferences. Besides, position-taking based on non-roll call voting tends to be more expressive of candidate-centered strategy than roll-call voting, which tends to be influenced by partisanship (Highton & Rocca, 2005). These findings suggest that regarding COVID-19 vaccine uptake, expressed support for the COVID-19 vaccine by members of Congress can influence constituents' acceptance of the vaccine. As trust is at the base of the relationship between the representative and their constituents;

Hypothesis II: Personal trust in members of Congress is positively related to COVID-19 vaccine uptake.

3.2.3 Healthcare access

Healthcare can be defined as the organizational apparatus intending to foster the population's overall health through prevention, treatment, and other medical support. For healthcare to be optimal in society, access should be total and easy. Total because healthcare should be accessible by all (universal coverage), easy because healthcare providers should be available in most geographical areas and optimal in terms of time management Millman (1993). The healthcare apparatus in the United States is constituted of health insurance companies, hospitals, healthcare providers, and the government. In a private-public system of health management such as that of the United States, access and prices are the main issues. Access because of the lack of health providers, prices because the significant portion of the popu-

lation is uninsured and cannot afford to pay for their health services. This state of matters appears to be the result of the prevalence of employer-sponsored health insurance, making health coverage rely on the state of the economy (Starr, 1978). Another issue associated with employer-sponsored health insurance is the disparities in coverage; as health insurance is a function of the type of employment, employers devise strategies to shift more health-related costs to their employees and discriminate health coverage among employees (Hacker, 2002).

Equality of access is the aim of many health care systems. Equality supposes the absence of any forms of health disparities based on race, ethnicity, gender, or other demographic characteristics. In the absence of universal health coverage, racial health disparities tend to soar (Krause, 1977). People with high income tend to have better access to health care because of their private health insurance than individuals with lower income enrolled in public funding such as Medicaid or the marketplace (Berk & Schur, 1998). In such a system, governments intend to influence the health care system through various re-distributive policies intending to facilitate health access. Medicaid and Medicare are examples of public funding programs intending to redistribute access to health, where most of the costs associated with health services are covered through public funding. Daniels et al. (1996) with their concept of "fair equal opportunity" support for public intervention in the health sector to improve the population's overall health. This social justice for health should allow low-income individuals to receive the same quality of care as high-income individuals. With its recommendation for Medicaid expansion, the Affordable Care Act (ACA) influences individuals' access to health care. Collins et al. (2016) argue that states that implement Medicaid expansion as delineated by the ACA have more health insurance coverage than states opposing the ACA.

While health insurance intends to protect individuals from unforeseen health issues and minimize the risk of defaulting in paying for health services, Stone (1993) argues that insurance companies have gone astray by implementing policies lowering the risk-associated with insurance enrollment to the detriment of the individuals. Until recently, individuals with

underlying medical conditions were less likely to receive health insurance coverage without paying high deductibles and premiums. The Affordable Care Act (ACA) intended to limit such practices by preventing insurance companies from accessing their clients' medical history and forbidding insurance to practice discriminatory practices based on social-economic status and medical status. Besides, Collins et al. (2016) find that in the absence of a single-payer, health insurance coverage in a country such as the United States is a function of factors such as citizenship and immigration status. A significant portion of immigrants is not eligible for both public and private health coverage. Although the ACA, through the insurance marketplace, intends to increase the level of health coverage among the population, Roberts et al. (2020) finds a high level of volatility associated with self-payer insurance in the marketplace. Re-enrollment is low, and only employer-sponsored health insurance and public insurance (Medicare, Medicaid...) appear to be stable sources of health insurance. The result of this state of matter is that uninsured are less likely to be regularly in contact with health practitioners than the insured. Regular contact between health providers and patients is necessary for sustainable trust between communities and the health care system (Foutz et al., 2017). Besides, because of health-market practices, the uninsured are charged more for healthcare services than their counterpart insured; such practices degrade trust between the uninsured and the healthcare system (Long, 2003). Because of the growing shortage of doctors able to interact with patients consistently, the health market adjusts to limit the demands for health services through rising costs (Howley, 2018). Again, the uninsured are disproportionally affected by these rising costs, which decrease their willingness to interact with the health system.

Hypothesis III: People with no health insurance are less likely to get vaccinated against COVID-19.

Access to health care is instrumental to health services acceptance in the population. Baird (2019) observe that self-reported health is a determinant factor influencing access

to health care. Access to health care goes beyond the availability of hospital facilities to include emotional support and trust in the health care system. Trust is, therefore, a primary component of access to health care. Health policy helping individuals flourish emotionally and develop cognitive capacities are components of health care access. Cust (1997) argues that access to health care should be a moral obligation in any living society. Policymakers should strive to ensure that all constituents, regardless of their race, gender, or religious beliefs, have access to health care. Addressing health care access implies solving the issue of health inequities. Health inequities are the principal hindrance limiting health care access. Watson (1994) and Cust (1997) argue for a *right to health care* that should be at the bases of any health policy. Health access is, in that logic, a common good because it benefits individuals and the whole community as a whole (Aday, 1993). The consumption of health care by an individual should not impede someone else consumption (non-rivalry), and no one should be excluded from health care services (non-excludability).

Patel & Rushefsky (2014) consider that the primary goal of public health is to improve the population's life span through prevention and mitigation. Prevention implies environmental-health aspects and the structural determinant of diseases. Addressing health prevention help decrease health disparities and thus increase the trust between the constituents and the health system. Vaccination is an essential tool used in public health to improve human health and the population's longevity. A clean environment is also a preventive public health strategy to improve the quality of health among the population and reduce health disparities. Mitigation, on the other hand, helps develop resilience face of major exogenous choc such as a natural disaster or a pandemic (Patel & Rushefsky, 2005). Mitigation relies on prevention to be optimal. If prevention is not well implemented, any major exogenous choc could exacerbate actual health disparities. The COVID-19 pandemic is a good example. The location has influenced the transmission rate; the more the population density per region is high, the more the transmission rate is high (Martins-Filho, 2021). As low-income

individuals tend to live in high-density places, they have been more affected by the pandemic than medium and high-income individuals.

Bradley & Taylor (2013) argue that the optimal to optimize health care access is to address the social determinant of health. Social determinants of health are embedded within a geographical context. Addressing health-related issues from a community-based perspective suggests acknowledging both the geographical context and the social environment context. Factors such as the type of jobs in the community, the quality of the education system, the transport system, and other community resources influence access to health care and, thus, the life quality of the community. Woolf & Braveman (2011) find that health disparities are related to social-economic status because low-income individuals live in areas with low life quality (poor education system, poor transportation system, high density...) Addressing those social determinants influences health behaviors, precisely the willingness of individuals to make the right decision regarding their health. Perception about health care access is not only based on the availability of health care facilities and resources but goes beyond including the quality of the education system, the transport system, and the availability of good jobs. The case of the COVID-19 pandemic is a good example. COVID-related death seems to be higher in low-income communities than in high-income communities despite the availability of free public health services such as the vaccine (Mollalo & Tatar, 2021; Arceo-Gomez et al., 2022). Vargas & Sanchez (2020), for example, find that the current pandemic has detrimentally affected the economic well-being of Latinos. A significant percentage of Latinos lost their jobs during the pandemic and faced significant issues with housing and education. Yancy (2020) finds similar issues with African American communities, with a high rate of comorbidity causing job volatility among the community; African Americans face economic challenges accessing health care. Same observations are found with Native American communities, Foxworth et al. (2021) argue that the lack of community-based COVID-19 education and the deplorable state of housing and educational system in Native American communities

limit the access to health care among those communities and may explain the high rate of COVID-19 related transmission and death observed in those communities. These aforementioned observations demonstrate that other factors influence the capacity of individuals to do what is best for their health. Health care access, therefore, goes beyond mere policy intending to increase health insurance coverage in the population. Bradley & Taylor (2013) argue that the definition of health care access encompasses housing, employment, education, and demographic factors such as race and gender.

Hypothesis IV: Access to health care is positively related to COVID-19 vaccine uptake

3.3 Data and Methods

[13]

The purpose of this chapter is to determine whether or not politics and, to a certain extent, health policy implemented as a response to the COVID-19 pandemic has influenced COVID-19 vaccine uptake in the United States. In this research, I am interested to see if political factors such as partisanship and political trust influence health behaviors such as vaccine uptake.

The explanatory variable of this research is COVID-19 vaccine uptake. Using vaccine uptake as a dependent variable helps clarify the interconnection between health and political attitudes/behaviors. The COVID-19 pandemic, with its overarching effect on society, unveils structural connections between social facts in a Durkheimian way. Because of the level of its emergency, experts and decision-makers have to formulate and implement strategies that

[13]A critical measurement that would have helped understand the impact of policy on vaccine uptake is COVID-19 mandates. AACVP interviews were done between May 7, 2021, to July 7, 2021. The CMPS interviews were implemented between April 2, 2021, to August 25, 2021. States started to implement the COVID-19 vaccine mandate in early July 2021. Because the survey time and state mandate are tightened, using a control variable for mandate by coding 1 for states applying the mandate and 0 would not reflect the reality as respondents may not have been aware of those mandates during the interviews. Using mask mandate as a proxy did not give conclusive findings.

optimize vaccine acceptance in public to reach herd immunity. However, these strategies intending to influence vaccine acceptance and uptake vary across regions and political parties. The politicization of the COVID-19 pandemic response seems to have influenced health behavior regarding vaccine uptake.

The added value of this research is to demonstrate that political factors such as partisanship and political trust (e.g. trust in local member of Congress) and policy (current states of health care access) have been determinant factors associated with COVID-19 vaccine acceptance among the population. Research addressing COVID-19 vaccine uptake focuses more on risk-perception (DeRoo et al., 2020), race and socio-economic status (Yancy, 2020; M. V. Reyes, 2020; Jahromi et al., 2020; Snowden & Graaf, 2021), and risk-factors (Giudicessi et al., 2020; Owen et al., 2020); the political aspect of vaccine acceptance has been omitted in most research.

3.3.1 Using the African American Vaccine Poll (AACVP)

Dependent variable The 2021 African American Research Collaborative Vaccine Hesitancy Survey is one of the data I used to measure the impact of policy and political attitudes/behaviors on COVID-19 vaccine uptake. The dependent variable vaccine uptake is operationalized in the survey through the question: "3. How about the COVID-19-19 vaccine, have you..." [14] The variable is a four-point nominal variable. To measure vaccine uptake, I transformed the variable into a dummy variable with "1" characterizing vaccine uptake regardless of the number of doses.

[14]The preset answers are:
I have received both first and second dose of a two dose COVID-19 vaccine –coded as 1; I have received only first dose of two dose COVID-19 vaccine –coded as 2; I have received one dose of the COVID-19 vaccine that only requires one dose –coded as 3; I have NOT had any COVID-19-19 vaccine – coded as 4.

Primary independent variables The leading independent variables used to explain vaccination uptake are partisanship, personal trust in local members of Congress, access to health care, and whether or not the respondent has health insurance. First, the party identification of the respondent measures partisanship. This variable is operationalized in the survey by the question:"S18. Generally speaking, do you consider yourself to be..." The preset answers include Democrats, Republicans, Independents and Others. The second primary variable I use to measure COVID-19 vaccination uptake is personal trust in local members of Congress. Again, the survey operationalizes the variable through the question: "70. On a scale of 0 to 10, with 0 meaning you do not trust at all and 10 meaning you totally trust, how much would you trust each of the following if they participated in a campaign to encourage Americans to get the COVID-19 vaccine? — x. Your local member of Congress."

Access to health care is the third primary independent variable I use to explain COVID-19 vaccination uptake. The variable is measured in the survey by the question: "11. People who live in locations like where I live struggle with many health inequalities and lack access to advanced medical care. This makes the consequences of getting sick with COVID-19-19 more severe." [15]

Health insurance is the fourth primary variable I use to explain the COVID-19 vaccination uptake. The variable measure whether or not the respondent has health insurance. The variable is measured in the survey through the question: "D11. Which of the following is your main source of health insurance coverage?" [16]

[15]The preset answers goes from "Strongly agree" to "Strongly disagree." I recoded preset answers"Refused to answer", and "Do not know" as missing.

[16]The preset answers are:

I do not have health insurance – 1; A plan through your employer – 2; A plan through your spouse's employer – 3; A plan you purchased yourself directly from an insurance company– 4; A plan through the health insurance marketplace – 5; Medicare – 6; Medicaid – 7; [STATE] health program [STATE MEDICAID NAME]– 8; Indian Health Services (HIS)– 9; Other source of health insurance –10.

I recoded the variable as a dummy with "I do not have health insurance" coded as 1.

Control variables: Demographic variables Control variables include demographic variables such as age, race, employment, gender, and level of education. I dummied out the variable race into four categories, with White as the comparison group. The races used in the model are Asian Americans, Blacks, Latinos, Native Americans, and Pacific Islanders. The variable age is a six-point ordinal variables.[17] Regarding gender, the binary variable is coded with 1 for females and 0 for others. The variable income is a six-point ordinal variable going from a household income "less than $ 24,900" to "more than $ 150,000." [18] The variable unemployment measures whether or not the respondent has a job; the variable is a dummy variable coded with unemployed coded as 1. Finally, the variable education is also a six-point ordinal variable going from a level of education of "Grades 1 to 11" to "Post-graduate degree."

Control Variables: Alternative hypotheses The primary control variable I use in this model is whether or not the respondent has an underlying medical condition that may explain his/her willingness to get vaccinated. The variable is operationalized in the model through the question "D10. Do you have any of the following medical conditions? (Select all that apply)" [19]

The media effect is the second alternative hypothesis that could explain vaccine uptake using the AACVP data, specifically, Television media. Therefore, I controlled for the mainstream television media CNN and Fox news. Both variables are operationalized in the survey through the question: "71. How often do you use each of the following for information or news: m. Fox News, k. CNN." The six-point ordinal variables go from "Never heard of

[17]The variable is coded as follow: Age 18 to 29 —2; Age 30 to 39 —3; Age 40 to 49 —4; Age 50 to 59 —5; Age 60 to 69 —6; Age 70 and above —7. "refused to answer" is coded as missing.

[18]I recoded "refused to answer" and "Don't know" as missing.

[19]The preset answers are: 1. —Cancer; 2. —Chronic kidney disease; 3. —Chronic obstructive pulmonary disease (COPD); 4. —Heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies; 5. —Obesity or severe obesity; 6. —Sickle cell disease; 7. —Type 2 diabetes; 8. —Pregnancy; 9. —Type 1 Diabetes; 10. —None of the above.

it/Never used it" to "Many times per day."

Table 3.1 presents the summary descriptive statistics of all the variables I use in this chapter using the AACVP. To ensure that the relationship between the main independent variables and the dependent variable is not spurious, I controlled for confounding variables such as social-economic status (income, education, employment status) and risk-factors variables (preexisting condition).

To ensure that the model is mathematically suitable to measure the COVID-19 vaccination uptakes, I evaluated the correlation level between all the independent variables used in this model. Using the .5 at a cutoff (Craney & Surles, 2002; Edwardson et al., 2016), figure 3.1 suggests that multicollinearity is not a significant issue affecting the models. Except for the correlation between Democrats and Republicans (Pearson's r= -0.46), the other correlations are below 0.4 in absolute value. The dependent variable, COVID-19 vaccine uptake, is a dichotomous variable suggesting that a logistic regression would be a good approach for estimation (Edgar & Manz, 2017). The research aims to determine the probability of getting vaccinated against COVID-19, given political factors such as political trust and partisanship and health policy factors such as access to health care and health insurance coverage.

Table 3.1: Summary descriptive statistic: COVID-19 Vaccine uptake —AACVP

Variable name	Obs	Mean	Std.Dv.	Min	Max
Vaccine uptake	12,282	.71	.45	0	1
Democrats	12,287	.51	.5	0	1
Republicans	12,287	.17	.38	0	1
Trust in LMC	12,287	5.35	3.36	0	10
Health care access	11,534	3.14	1.4	1	5
No insurance	12,287	.1	.28	0	1
Private insurance	12,287	.45	.5	0	1
Medicare	12,287	.23	.42	0	1
Medicaid	12,287	.15	.36	0	1
Other insurance	12,287	.1	.26	0	1
Latino	12,287	.24	.43	0	1
Black	12,287	.19	.39	0	1
Asian	12,287	.17	.37	0	1
Pacific	12,287	.02	.14	0	1
Native American	12,287	.16	.36	0	1
Female	12,193	.54	.5	0	1
Age	12,287	4.04	1.62	2	7
Unemployment	12,287	.26	.44	0	1
Education	12,287	3.73	1.52	1	6
Income	10,981	2.88	1.56	1	6
CNN	12,287	3.21	1.84	1	6
Fox News	12,287	2.97	1.85	1	6

Logit models help determine how the sample fits the model by categorizing the result into two outcomes– vaccinated or unvaccinated. Given that the outcomes are between 0 and 1, the logistic regression is an alternative to using Ordinary Least Square (OLS) regressions for classification problems by using conditional probability to estimate the dependent variable (Belyadi & Haghighat, 2021). The interpretation of logit scores is based on the coefficient's sign and the variable's statistical significance. To explain the effect that political attitudes and behaviors have on health behavior, in this case, vaccine uptake, I built two models. One focuses solely on the main effect of the independent variables on vaccine uptake controlling for demographic variables, and a second model includes all the variables (including alternative hypotheses).

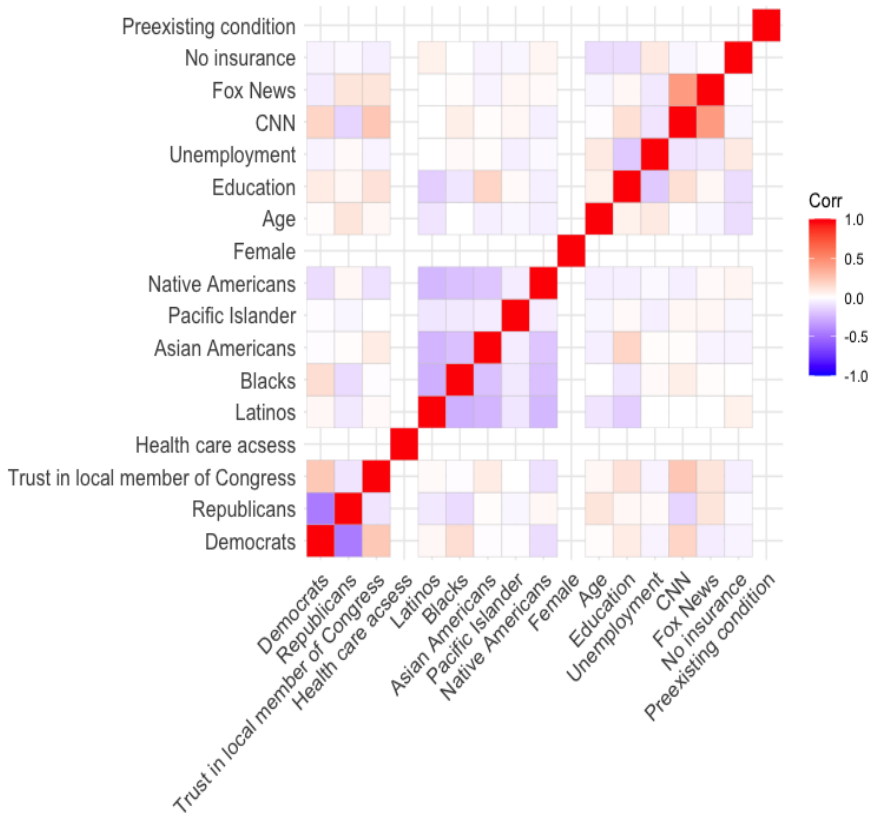

Figure 3.1: Correlation Matrix AACVP: Vaccine uptake

Partial Model–AACVP

Vaccine uptake $= \alpha + \beta_1$Democrats $+ \beta_2$Republicans $+ \beta_3$Trust in local member of Congress $+ \beta_4$Health care access$+ \beta_5$No Insurance $+ \beta_6$Latinos $+ \beta_7$Blacks $+ \beta_8$Asian Americans $+ \beta_9$Pacific Islander $+ \beta_{10}$Native Americans $+ \beta_{11}$Female $+ \beta_{12}$Age $+ \beta_{13}$Education $+ \beta_{14}$Unemployment $+ \epsilon$.

Full Model–AACVP

Vaccine uptake $= \alpha + \beta_1$Democrats $+ \beta_2$Republicans $+ \beta_3$Trust in local member of Congress $+ \beta_4$Health care access$+ \beta_5$No Insurance $+ \beta_6$Latinos $+ \beta_7$Blacks $+ \beta_8$Asian Americans $+ \beta_9$Pacific Islander $+ \beta_{10}$Native Americans $+ \beta_{11}$Female $+ \beta_{12}$Age $+ \beta_{13}$Education $+ \beta_{14}$Unemployment $+ \beta_{15}$CNN $+ \beta_{16}$Fox News $+ \beta_{17}$Preexisting condition $+\epsilon$.

3.3.2 Using the CMPS

Independent variable The Collaborative Multi-racial Post-election Survey (CMPS) is the second data I used to evaluate the political determinant of COVID-19 vaccination uptake in the United States. The dependent variable, vaccine uptake, is operationalized in the survey through the question: "144. When it comes to the new vaccine to protect against the coronavirus, which comes closest to your view: 1- I have already received the vaccine; 2- I plan to get the vaccine as soon as I am able to; 3- I am not sure about the vaccine, I want to wait a while. The variable is a three-point nominal variable. To capture vaccine uptake, I transformed the variable into a dummy variable with 1 corresponding to the answer "I have already received the vaccine."

Primary independent variables The leading independent variables used to explain vaccination uptake are partisanship, personal trust in local members of Congress, access to health care, and whether or not the respondent has health insurance. Partisanship is a three-point nominal variable operationalized in the survey by the question: "Generally speaking, do you think of yourself as a Republican, a Democrat, an independent, or something else?" The second primary variable I use to measure COVID-19 vaccination uptake is personal trust in local members of Congress. The variable is operationalized in the survey through the question: " How good or poor of a job do you think your representatives do of keeping in touch with people in your district?" [20]

Access to health care is the third primary independent variable I use to explain COVID-19 vaccination uptake. The five-point ordinal variable is measured in the survey by the question: "Overall, how would you rate the following local goods and services in your neighborhood:

[20]The preset answers go from very good to very poor. I rescaled the variable to go from very poor to very good.

Access to hospitals/health care facilities?" [21]

Health insurance is the fourth primary variable I use to explain the COVID-19 vaccination uptake. The variable measure whether or not the respondent has health insurance. The survey measured the variable through the question: "Which of the following is your MAIN source of health insurance coverage? The preset answers are 1– Plan through your employer; 2–Plan through your spouse's employer; 3–Plan you purchased yourself; 4–Medicare; 5–Medicaid; 6–Plan through another government source; 7–Other (SPECIFY); 8–I do not have health insurance. I recoded the variable as a dummy with "I do not have health insurance" coded as 1.

Control variables: Demographic variables Control variables include demographic variables such as age, race, employment, gender, and level of education. I dummied out the variable race into four categories, with White as the comparison group (Asian & Pacific Islander & native Americans, Blacks, Latinos). The variable age is a six-point ordinal variables.[22] Regarding gender, the binary variable is coded with 1 for females and 0 for others. The variable unemployment measures whether or not the respondent has a job; the variable is a dummy variable coded with unemployed coded as 1. Finally, the variable education is a six-point ordinal variable going from a level of education of "Grades 1 to 11" to "Post-graduate degree."

Control variables: Alternative hypotheses The media effect is the principal alternative hypothesis that could explain vaccine uptake using the CMPS data, specifically, Television media. Therefore, I controlled for the mainstream television media CNN and Fox news. Both variables are operationalized in the survey through the question: "How often do you

[21]The preset answers go from "Excellent" to "Poor." I rescaled the categories so that it goes from "Poor" to "Excellent."

[22]The variable is coded as follow: Age 18 to 29 —2; Age 30 to 39 —3; Age 40 to 49 —4; Age 50 to 59 —5; Age 60 to 69 —6; Age 70 and above —7. "refused to answer" is coded as missing.

watch or get news from the following news sources: 33. Fox News, 35. CNN." The four-point ordinal variables go from "very often" to "almost never." I rescaled the categories so that it goes from "almost never" to "very often."

Table 3.2 presents the summary descriptive statistics of all the variables I use in this chapter using the CMPS data. To ensure that the relationship between the main independent variables and the dependent variable is not spurious, I controlled for confounding variables such as social-economic status (education, employment status).

To ensure that the model is mathematically suitable to measure the COVID-19 vaccination uptakes, I evaluated the correlation level between all the independent variables used in this model. Using the .5 at a cutoff (Craney & Surles, 2002; Edwardson et al., 2016), figure 3.1 suggests that multicollinearity is not a significant issue affecting the models. Except for the correlation between Democrats and Republicans (Pearson's r= -0.47), the other correlations are below 0.4 in absolute value.

Table 3.2: Summary descriptive statistic: COVID-19 Vaccine uptake —CMPS

Variable name	Obs	Mean	Std.Dv.	Min	Max
Vaccine uptake	14,988	.66	.47	0	1
Republican	14,988	.19	.39	0	1
Democrats	14,988	.48	.5	0	1
Trust in LMC	14,988	3.12	1.05	1	5
Health care access	14,988	3.44	1.06	1	5
No insurance	14,988	.1	.3	0	1
Private insurance	14,988	.53	.5	0	1
Medicare	14,988	.21	.41	0	1
Medicaid	14,988	.1	.29	0	1
Other insurance	14,988	.07	.25	0	1
Asian-Pacific-Native Americans	14,988	.27	.44	0	1
Black	14,988	.27	.44	0	1
Latino	14,988	.27	.44	0	1
Female	14,988	.56	.5	0	1
Age	14,987	3.15	1.66	1	6
Education	14,987	4.98	1.53	1	7
Unemployment	14,988	.13	.34	0	1
CNN	14,988	2.6	1.15	1	4
Fox News	14,988	2.16	1.14	1	4

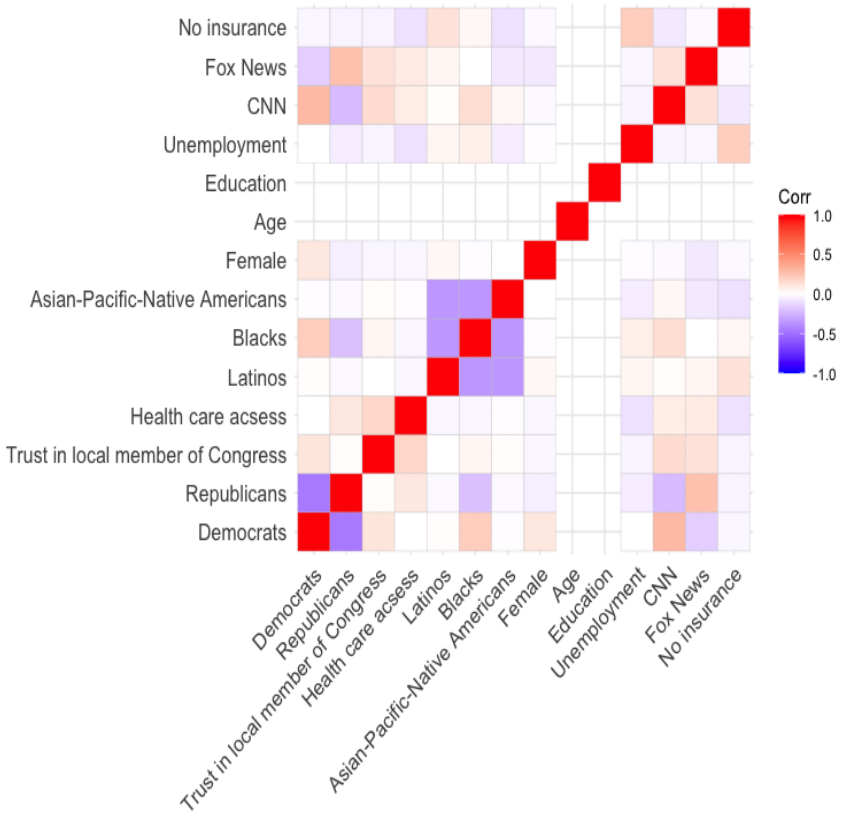

Figure 3.2: Correlation Matrix CMPS: Vaccine uptake

As using the AACVP, I built two models to explain COVID-19 vaccination uptake. One focuses solely on the main effect of the independent and demographic variables, and a second model includes all the variables and alternative hypotheses.

Partial Model–CMPS

Vaccine uptake $= \alpha + \beta_1$Democrats $+ \beta_2$Republicans $+ \beta_3$Trust in local member of Congress $+ \beta_4$Health care access$+ \beta_5$No Insurance $+ \beta_6$Latinos $+ \beta_7$Blacks $+ \beta_8$Asian-Pacific-Native Americans$+ \beta_9$Female $+ \beta_{10}$Age $+ \beta_{11}$Education $+ \beta_{12}$Unemployment $+ \epsilon$.

Full Model–CMPS

Vaccine uptake $= \alpha + \beta_1$Democrats $+ \beta_2$Republicans $+ \beta_3$Trust in local member of Congress $+ \beta_4$Health care access$+\beta_5$No Insurance $+ \beta_6$Latinos $+ \beta_7$Blacks $+ \beta_8$Asian-Pacific-

Native Americans+ β_9Female + β_{10}Age + β_{11}Education + β_{12}Unemployment + β_{13}CNN + β_{14}Fox News + ϵ.

3.4 Findings

This chapter addresses the nature of the interconnections between health and political behavior by evaluating how political attitudes and behaviors help explain COVID-19 vaccination uptake in the United States. The main hypotheses address how political factors such as partisanship, political Trust (trust in local members of Congress and trust in federal health institutions), and policy factors such as health care access and health insurance explain the COVID-19 vaccine uptake. To ensure that inferences drawn from the estimation represent the actual population of the United States, both the AACVP and the CMPS have post-stratification weight with a ranking algorithm by race based on the 2019 American Community Survey (ACS) Census estimates. Before measuring the impact of all the primary variables on COVID-19 vaccine uptake, I evaluated the bivariate relationship using non-parametric estimation between each primary independent variable and the dependent variable COVID-19 vaccine uptake. Specifically, the paired t-test is used to evaluate the mean difference between vaccinated COVID-19 vs. non-vaccinated COVID-19 individuals. The purpose is to determine whether there is a statistical difference between the mean of vaccinated vs. the mean of non-vaccinated, which is not due to sampling error or chance.

Table 3.3 presents the summary statistic of the primary variables used in this paper. The results suggest that the paired t-test comparison of means between the vaccinated against COVID-19, and the unvaccinated are all statistically significant at the 0.001 level. In addition, Table 3.3 shows that in using the AACVP survey, among Democrats, COVID-19 vaccinated individuals (Mean=0.56, SD=0.005) is higher than COVID-19 unvaccinated (Mean=0.4, SD=0.009). The same observation can be made using the CMPS survey.

Among Democrats, COVID-19 vaccinated individuals (Mean=0.53, SD=0.005) is higher than COVID-19 unvaccinated (Mean=0.4, SD=0.007). The results from Table 3.3 show that using the AACVP survey, among Republicans, COVID-19 vaccinated individuals (Mean=0.15, SD=0.004) is lower than COVID-19 unvaccinated (Mean=0.21, SD=0.007). Similar results are found using the CMPS data; among Republicans, COVID-19 vaccinated individuals (Mean=0.18, SD=0.004) is lower than COVID-19 unvaccinated (Mean=0.22, SD=0.006). These results show that COVID-19 vaccination uptake is more noticeable among Democrats than among Republicans.

Trust in local members of Congress varies among vaccinated and unvaccinated against COVID-19. Using the AACVP survey, Table 3.3 shows that vaccinated individuals trust their local member of Congress (Mean=5.93, SD=0.04) is higher than unvaccinated individuals who trust their local member of Congress (Mean=4.1, SD=0.06). A similar result is found using the CMPS data, vaccinated individuals with Trust in their local member of Congress (Mean=3.15, SD=0.01) are higher than unvaccinated individuals who trust their local member of Congress (Mean=3.05, SD=0.014). These results suggest that vaccination uptake is higher as Trust in local members of Congress is high. Additionally, using the AACVP data, Table 3.3 suggests that COVID-19 vaccinated individuals with access to health care (Mean=3.24, SD=0.016) are higher than unvaccinated individuals with access to health care (Mean=2.87, SD=0.025). A similar result is found using the CMPS data; individuals with access to health care (Mean=3.54, SD=0.01) are higher than unvaccinated individuals with access to health care (Mean=3.25, SD=0.015). Finally, access to insurance is related to COVID-19 vaccine uptake. Using the AACVP data, among individuals with no insurance, COVID-19 vaccinated (Mean=0.06, SD=0.003) is lower than unvaccinated (Mean=0.14, SD=0.006). Similarly, using the CMPS data, among individuals with no insurance, COVID-19 vaccinated (Mean=0.06, SD=0.002) is lower than unvaccinated (Mean=0.18, SD=0.005). In all cases, the null hypothesis of no mean difference between

COVID-19 vaccinated and unvaccinated regarding the primary independent variables studied in this paper is rejected.

Table 3.3: Summary statistic: t-test IVs by vaccine uptake

	AACVP			**CMPS**		
	Vaccine uptake			**Vaccine uptake**		
	(n=11,136) mean±SD			(n=14,987) mean±SD		
	Yes	No	P-values	Yes	No	P-values
	(n=8,108)	(n=3,028)		(n=9,907)	(n=5,080)	
Democrats	0.56±0.005	0.4±0.009	0.001	0.53±0.005	0.4±0.007	0.001
Republicans	0.15±0.004	0.21±0.007	0.001	0.18±0.004	0.22±0.006	0.001
Trust in LMC	5.93±0.04	4.1±0.06	0.001	3.15±0.01	3.05±0.014	0.001
Health care access	3.24±0.016	2.87±0.025	0.001	3.54±0.01	3.25±0.015	0.001
No Insurance	0.06±0.003	0.14±0.006	0.001	0.06±0.002	0.18±0.005	0.001

While non-parametric regression analysis such as the paired t-test help evaluates the statistical significance of the relationship between the primary independent variables and the dependent variable COVID-19 vaccine uptake, it does not give information about the direction of the relationship and the influence of con-founders. The use of multivariate logistic regression help answers these questions. Table 3.4 presents the logit score of the models studied in this chapter. Using the AACVP data, an analysis of the partial Model suggests that controlling for demographic variables (race, gender, Age, education, employment status), partisanship is statistically significant at a 0.001 level. Specifically, people identifying themselves as Democrats are more likely to get vaccinated against COVID-19 compared to Republicans and Independents. People identifying themselves as Republicans, on the other hand, are less likely to get vaccinated against COVID-19 than Democrats and Independents. Similar results are found in analyzing the partial Model using the CMPS data. The variable Trust in local members of Congress is significant and positively related to COVID-19 vaccine

uptake across both partial models (using the AACVP data and the CMPS data). Additionally, access to health care is statistically significant at a 0.001 level and positively related to COVID-19 vaccine uptake in the two partial models. Finally, the absence of health insurance is statistically significant at a 0.001 level and negatively related to COVID-19 vaccine uptake in both partial models. Using both the CMPS and AACVP, The full models in Table 3.4 control for alternative hypotheses such as underlying medical conditions and the media effects. Table 3.4 presents the logit score from the partial and complete logistic regression models using the AACVP data and the CMPS data. The predictor's logit scores vary between the partial and complete models. In addition, we can see that the two models differ between Akaike's Information Criteria (AIC), Bayesian Information Criteria (BIC), and the Log-Likelihood. These criteria above are Maximum Likelihood Estimate (MLE) goodness of fit, which can be used as an alternative to the R-squared (R^2) used in the Ordinary Least Square (OLS) method. While the AIC, BIC, and Log-Likelihood do not provide the percentage of the variance of the dependent variable explained by the Model, these measures of goodness of fits not only help clarify the quality of the logistic regression but also help makes comparisons between models (Jenkins-Smith et al., 2017).

Regarding the AIC, the lower the AIC, the better the goodness of fit. We see that using the AACVP data; the full Model has a lower AIC (AIC=12253.44) than the partial Model (AIC=13278.04). The same observation is applied using the CMPS data. This confirms the statistical quality of the full regression model compared to the partial one. While the AIC as a goodness of fit tends to be biased based on the number of parameters (meaning the more parameters we have in the Model the lower the AIC), the BIC, by adding a penalty term for the number of predictors, limits the likelihood of over-specification of the Model. The lower the BIC, the better the goodness of fit. As with the AIC, the BIC for the full models using both the AACVP and the CMPS data is lower than that of the partial models.

Table 3.4: Logistic regression table: COVID-19 Vaccine uptake

	AACVP–Partial	CMPS–partial	AACVP–Full	CMPS–Full
Democrats	0.24***	0.57***	0.15**	0.47***
	(0.05)	(0.04)	(0.06)	(0.05)
Republicans	−0.38***	−0.38***	−0.34***	−0.20***
	(0.05)	(0.05)	(0.06)	(0.06)
Trust in LMC	0.16***	0.08***	0.15***	0.08***
	(0.01)	(0.02)	(0.01)	(0.02)
Health care access	0.13***	0.15***	0.13***	0.15***
	(0.02)	(0.02)	(0.02)	(0.02)
No insurance	−0.74***	−0.61***	−0.75***	−0.61***
	(0.07)	(0.06)	(0.08)	(0.06)
Latinos	−0.20**	0.24***	−0.25***	0.20***
	(0.06)	(0.06)	(0.06)	(0.06)
Blacks	−0.38***	−0.47***	−0.43***	−0.54***
	(0.07)	(0.06)	(0.07)	(0.06)
Asian Americans	0.19*		0.20*	
	(0.09)		(0.09)	
Pacific Islander	0.28		0.21	
	(0.25)		(0.25)	
Native Americans	0.06		0.01	
	(0.21)		(0.22)	
Asian-Pacific-Native Americans		0.95***		0.90***
		(0.06)		(0.06)
Female	−0.41***	−0.08*	−0.41***	−0.09*
	(0.04)	(0.04)	(0.04)	(0.04)
Age	0.30***	0.37***	0.30***	0.38***
	(0.01)	(0.01)	(0.01)	(0.01)
Education	0.17***	0.21***	0.16***	0.19***
	(0.01)	(0.01)	(0.02)	(0.01)
Unemployment	−0.32***	−0.23***	−0.30***	−0.24***
	(0.05)	(0.05)	(0.05)	(0.05)
CNN			0.12***	0.21***
			(0.01)	(0.02)
Fox News			−0.04**	−0.22***
			(0.01)	(0.02)
Preexisting condition			0.29***	
			(0.05)	
AIC	13278.04	17770.64	12253.44	17531.29
BIC	13388.23	17869.64	12385.16	17645.52
Log Likelihood	−6624.02	−8872.32	−6108.72	−8750.65
Deviance	13650.30	16645.56	12615.73	16422.62
Num. obs.	11448	14987	11136	14987

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

This suggests that the full regression model better fits the data than the partial regression model. The log-likelihood is another criterion for the goodness of fit, the higher the log-likelihood the better the Model fits the data. The full regression model for both the AACVP and the CMPS data has a higher log-likelihood than the partial Model, corroborating that the full logistic regression fits the data better than the partial one.

Partisanship is a significant predictor of vaccine uptake, like in the partial models. Omer et al. (2021) find a significant gap in COVID-19 vaccine acceptance between Democrats and Republicans, with Democrats reporting more COVID-19 vaccination rate than Republicans. This paper corroborates that finding. Both full models in Table 3.4 show that people identifying as Democrats are more likely to vaccinate against COVID-19 compared to Independents and Republicans, at 0.01 level using the AACVP data and 0.001 level using the CMPS data. People identifying as Republicans are less likely to vaccinate against COVID-19 than Independents and Democrats. This is at a 0.001 level using both the CMPS data and the AACVP data confirming thus the first hypothesis of this research.

While partisanship captures long-term attachment between individuals and a political party, Trust in local members of Congress expresses an individual's Trust toward his/her representative in Congress. The full models using the CMPS and AACVP data suggest that Trust in local members of Congress is statistically significant at a 0.001 level and positively related to COVID-19 vaccine uptake. This finding corroborates the second hypothesis of this paper. Political Trust is at the core of most successful policy (Citrin, 1974; A. H. Miller, 1974; W. E. Miller, 1979). Political factors such as partisanship and political Trust (Trust in local members of Congress) are therefore determining in explaining COVID-19 vaccine uptake in the United States. To evaluate whether the impact of Trust in local members of Congress on COVID-19 vaccination uptake is influenced by partisanship, Figure 3.3 presents the predicted probabilities of Trust in local members of Congress by parties using the AACVP data. Figure 3.4, on the other hand, presents the predicted probabilities using the CMPS.

Using the AACVP, Figure 3.3 suggests that among Republicans, Trust in local members of Congress is positively related to COVID-19 vaccine uptake. The more people identifying as Republican Trust their local members of Congress, the more they are to get vaccinated against COVID-19. Regarding Democrats, figure 3.3 shows that Trust in local members of Congress is also positively related to COVID-19 vaccine uptake. The intercept is 0.58 for Democrats and 0.35 for Republicans, suggesting that in a total absence of Trust in local members of Congress, the magnitude of effect of getting vaccinated is higher among Democrats than it does among Republicans. Using the CMPS data gives similar results. Figure 3.4 suggests that among both Democrats and Republicans, Trust in local members of Congress is positively related to COVID-19 vaccine uptake, with the intercept among Democrats (0.702) higher than that of Republicans (0.54).

The second part of this paper addresses policy-related factors such as health care access and access to health insurance. Using both the CMPS and AACVP data, Table 3.4 suggests that health care access is statistically significant across all models and positively related to COVID-19 vaccine uptake at a 0.001 level. De Figueiredo et al. (2020) argue that barriers to health care services are detrimental to vaccine uptake. Table 3.4 shows that the more people have access to health care, the more they are likely to vaccinate against COVID-19. This finding confirms the third hypothesis of this research. Finally, access to health insurance is a significant predictor of COVID-19. Table 3.4 shows that individuals with no insurance are less likely to get vaccinated against COVID-19 compared to individuals with health insurance at 0.001 level in all models. This confirms the fourth hypothesis of this research. Both political factors (partisanship, Trust in local members of Congress) and policy factors (health care access, access to health insurance) are strong predictors of COVID-19 vaccine uptake. Research on access to health such as those of Hoffman & Paradise (2008), and E. R. Brown et al. (2000) demonstrate that factors such as poverty and lack of insurance are detrimental to access to health. Health coverage is a significant factor in improving access

to health care and the acceptance of health services.

Social-economic characteristics such as Age, education, income, and employment status positively relate to COVID-19 vaccine uptake. People with higher education are more likely to get vaccinated. Research such as those of Rammohan et al. (2012), and Makarovs & Achterberg (2017) shows that level of education is a significant positive determinant of vaccine uptake overall. Income is a significant predictor of COVID-19 vaccine uptake; higher-income people are more likely to vaccinate. Employment status is another determinant factor explaining COVID-19 vaccine uptake; people with jobs, regardless of the type, are more likely to get vaccinated against COVID-19 than people without jobs. This research controls social economics status and alternative hypotheses explaining vaccine uptake, such as the media effect. Compared to White, Blacks are less likely to get vaccinated against COVID-19 at a 0.001 level across all models. This finding confirms research addressing COVID-19 vaccine acceptance among Black communities in the United States (Yasmin et al., 2021; Momplaisir et al., 2021; Restrepo & Krouse, 2022). Other factors such as Age, education, and employment status are significant predictors of COVID-19 vaccine uptake at a 0.001 level. Age is positively related to vaccine uptake as well as the level of education. This suggests that the more people are older, the more they are to get vaccinated against COVID-19. Similarly, The more people are educated, the more they are to get vaccinated against COVID-19. Regarding the employment status, Table 3.4 suggests that unemployed individuals are less likely to vaccinate against COVID-19 than individuals with jobs at a 0.001 level across all models.

Alternative hypotheses are validated in this research. Ideological Television News such as CNN and Fox News are significant predictors of COVID-19 vaccine uptake. Table 3.4 shows that the more people get their news from Fox News, the less they are to get vaccinated. Similar research corroborates this finding. Choi et al. (2022) find a COVID-19 anti-vaccine attitude among individuals watching Fox News. Conversely, watching the news from CNN

is positively related to COVID-19 vaccine acceptance (Ruiz & Bell, 2021).

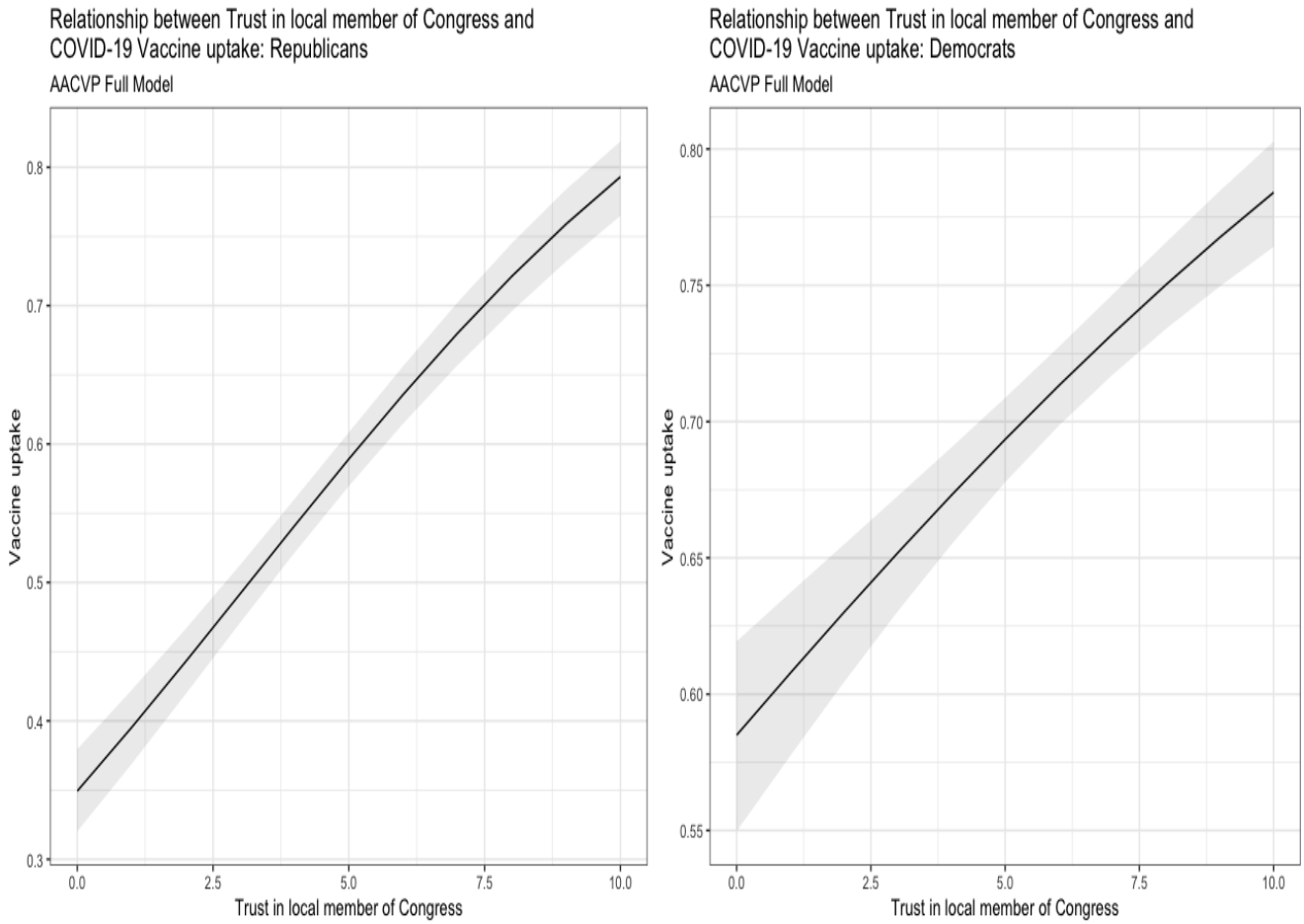

Figure 3.3: Predicted probabilities of Trust in local member of Congress by party: Vaccine uptake—AACVP

Table 3.4 shows that individuals getting their news from CNN are more likely to get vaccinated than individuals not getting their news from CNN, and this is at a 0.001 level. Finally, individuals with underlying medical conditions are more likely to get vaccinated against COVID-19 compared to individuals without underlying conditions. Rosenstock (1974a); Glanz et al. (2008), and Valckx et al. (2022) show that underlying medical conditions make people more likely to get vaccinated to lower the risk of any further medical complications. These findings are confirmed in this research. Lastly, an underlying medical condition is

statistically significant and positively related to COVID-19 vaccine uptake.

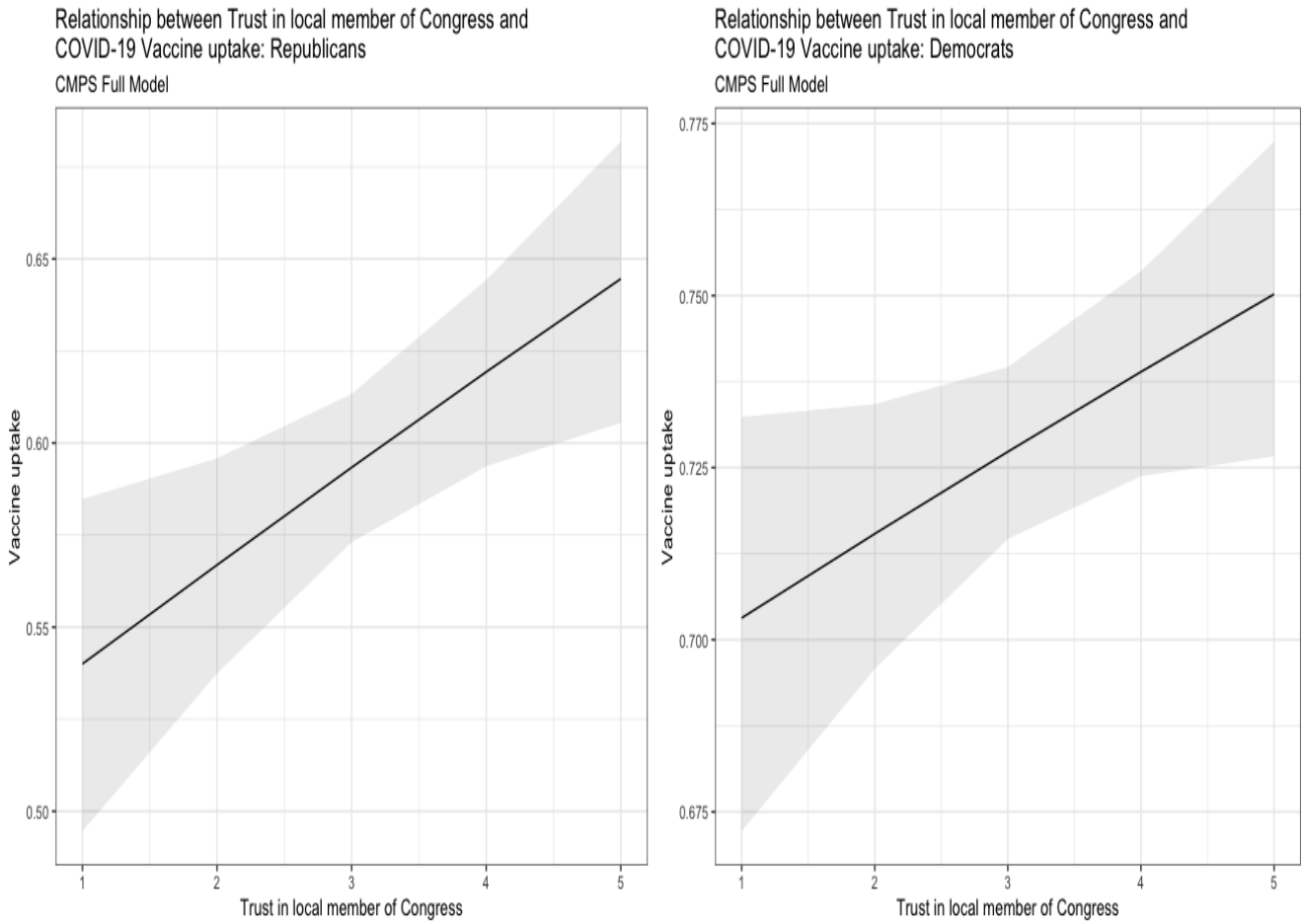

Figure 3.4: Predicted probabilities of Trust in local member of Congress by party: Vaccine uptake—CMPS

3.5 Conclusion

Understanding the interconnection between public health and political behaviors implies analyzing how they are interrelated. This chapter addresses public health behaviors as a construct of policy and political forces based on partisanship, political Trust, and access to health care. Compared to Democrats and Independents, Republicans seem less likely to be vaccinated against COVID-19. Mixed messaging from the Republican leadership on matters

of COVID-19 management might explain the comparatively lower vaccine uptake among Republicans. While partisanship serves as a shortcut heuristic, personal voting suggests that voters make their choices based on their Trust in the candidate. This paper shows that people's level of Trust in their representatives influenced their vaccine acceptance. Regardless of their partisanship, as Trust in local members of Congress increases, individuals are more likely to get vaccinated against COVID-19. The fact that most members of Congress have been vaccinated against COVID-19 has been influential in promoting vaccine acceptance in the population.

This paper demonstrates that health policy issues such as access to health care and health insurance are significant factors influencing COVID-19 vaccine uptake among the population. Decision-makers to increase COVID-19 vaccine acceptance among the population must strive to create a social environment based on Trust, facilitating access to healthcare services in the neighborhood and optimizing health insurance coverage among the population. Buchanan (2018) argue that an institution's legitimacy is based on "moral reason-based support." Therefore, the authoritative allocation of values and resources is not the optimal way to improve health services. Improving Trust between institutions and constituents is a step toward a greater acceptance of health services overall and vaccine uptake in particular. This paper also suggests that health behavior is a function of social-economic and demographic characteristics. It appears that African Americans are less likely to get vaccinated compared to Whites. The following chapter addresses the question of racial health disparities in the United States and evaluates the determinant of vaccine hesitancy among communities of color.

3.6 Future research

This chapter addresses the interconnections between health and political behavior in a

context marked by an exogenous shock such as a pandemic. For example, the COVID-19 pandemic striking the US a few months before the presidential election has affected the relationship between health and political behavior. More research addressing how health behaviors and political behaviors are interrelated will improve our understanding of the determinant health services acceptance among the population. In addition, state and county-level studies will help improve the contextual analysis of the political determinants of health behavior.

Chapter 4

Health attitude as an output: understanding COVID-19 vaccine hesitancy among Black, Latino, and Native American communities

The SARS-COV-2, also known as COVID-19, affected the world in late 2019 and has been characterized by its rapid transmission rate and adverse effect on human health. The increasing rate of hospitalization and death makes the COVID-19 pandemic a significant public health issue impacting interactions between constituents and their governments. In the United States, the pandemic has disproportionately affected certain racial groups (Figueroa et al., 2021). A study from the Centers for Disease Control and Prevention (CDC) suggests that Black, Latino, and Native American communities present higher rates of death and COVID-19-related hospitalization than White communities. This state of matter appears to be explained by factors such as social-economic status and skepticism related to the vaccine. Social-economic status as Blacks and Latinos are overrepresented mostly in essential jobs in

the United States (Goldman et al., 2021).[1] Skepticism, as Black and Latino communities, present a high percentage of hesitancy about getting vaccinated against COVID-19 (Jimenez et al., 2021; Ndugga et al., 2021).

Vaccine hesitancy is the overt refusal or acceptance of being vaccinated despite the availability and accessibility of the public health service, in this case, the COVID-19 vaccine. The question is whether COVID-19 vaccine hesitancy observed in communities is endogenous to these communities (tradition, culture, religion...) or the result of structural factors related to the distribution of power in the United States. Vaccine hesitancy among minorities is concerning because it exacerbates health disparities and increases preventable disease and mortality rates among minorities (Phadke et al., 2016; Poland et al., 2011; Wolfe & Sharp, 2002). While vaccination has been advocated by most public health experts, pundits, and institutions as the best strategy to ward off the pandemic, vaccine hesitancy remains a significant issue among a significant percentage of the population in the United States. An estimate by the Centers for Disease Control and Prevention (CDC) shows that vaccine hesitancy varies between 6% and 26.7% across the United States.[2]. Besides, it appears that race is a determinant factor explaining vaccine hesitancy in the United States. African Americans, Latinos, and Native Americans report the lowest COVID-19 vaccination rates in the United States compared to Whites and Asian Americans. An analysis of the African American COVID-19 Vaccine Poll (AACVP) suggests that vaccine hesitancy appears to be more pronounced among communities of color.[3]

As Burgos et al. (2021) observed, equitable vaccination distribution and administration remain major public health issues motivating these COVID-19-related racialized discrepancies. What could explain the comparatively low rates of COVID-19 vaccine acceptance

[1]Essential workers have been more at risk than others during the COVID-19 pandemic because of their exposure to the virus.

[2]Check out the link:"CDC: vaccine hesitancy per states."

[3]Check out: "The American Covid-19 Vaccine Poll."Last retrieved 06/08/2022.

among Black, Latino, and Native Americans? Is that due to group predisposition against vaccinations?[4] Or is COVID-19 vaccine hesitancy among those communities the result of structural racial-related factors? Addressing these questions implies evaluating whether structural factors such as racial discrimination (perceived and experienced discrimination), historical medical racism, and perception of immigration-related policies help explain vaccine hesitancy among those communities.

4.1 Background

Most research addressing vaccination hesitancy targets health beliefs, psychological factors (mistrust of the effectiveness of a vaccine, lack of confidence, the fear of needles, and vaccine myths such as their correlation to autism), and perceptions (access to health services) (Park, 2008; The Lancet Infectious Diseases, 2007; D. Freeman et al., 2021; Bonhoeffer & Heininger, 2007). Other studies address the sociological factors influencing vaccine hesitancy. Piltch-Loeb & DiClemente (2020) find that vaccine hesitancy stems from social-cultural behaviors in which some social groups tend to be more vaccine-hesitant than others. Factors such as cultural and religious beliefs appear to explain vaccine hesitancy (Kasstan, 2021). Taking into account social groups in addressing vaccine hesitancy helps improve our understanding of structural factors influencing health behavior. For example, Rosenstock (1974a) finds that factors such as religious dogma affect vaccine hesitancy and should be considered when designing policies to increase vaccine uptake within the general population. While those factors are significant in explaining vaccine hesitancy, this paper emphasizes structural and political factors that influence vaccine hesitancy.

[4]For more information about "anti-vax", read Hinsliff (2020) on vaccine hesitancy.

4.1.1 Vaccine hesitancy through the lens of public opinion approaches: the role of mass media and public opinion leaders.

Information and its transmission are a fundamental component of democracy. To participate politically, citizens must be well informed on issues affecting the countries and possible solutions addressing those issues. Banducci (2017) argues that the primary role of mass media is to inform and influence public opinion on salient issues affecting society. While researchers such as Patterson & McClure (1976), and Berelson et al. (1954) argue that media is not a determinant factor influencing public opinions, M. McCombs (2002) say that mass media not only shape and influence public opinion but also the agenda-setting process. Through priming and framing, the media can determine what is on the agenda in the policymaking process. Voters use the media as shortcut heuristics to evaluate policy issues and rank their policy preferences Lippmann (1965). The more the momentum of an issue among media, the more it is salient among the public opinion and the more likely the problems would be on the agenda-setting of institutional policymaking process (M. E. McCombs & Shaw, 1972). The case of COVID-19 pandemic is a good example. Anwar et al. (2020) find that mass media has been a significant source of information on the COVID-19 pandemic. Mass media, such as television channels in the United States, informed the citizens on how dangerous the pandemic is and what should be the appropriate way to limit the spread of the pandemic. Maciel-Lima et al. (2015), in analyzing the impact of media on the public awareness of the H1N1 in 2009, find a positive relationship between media coverage and H1N1 vaccine acceptance among the population. The more people listened to information from mass media, the less they were hesitant to get vaccinated.

Public health institutions, such as the Center for Disease Control and Prevention (CDC), have used mass media, such as television channels, to timely inform the population to ward off the spread of the virus. In addition, in a time of lockdown, mass media have been invaluable

in transmitting not only COVID-19-related institutional guidance but also constituents' attitudes and policy preferences to the decision-makers. Public health communication has been effective due to mass media. While media help transmits information through priming between public health institutions and the population, media framing has influenced health attitudes and behaviors among the people. Pinna et al. (2022) observe that by framing vaccine mandate as a conflict between personal liberties and collective ones, conservative media such as Fox News have been positively associated with COVID-19 vaccine hesitancy among the population in the United States. On the other hand, Fridman et al. (2021) find that liberal media such as CNN are positively related to COVID-19 vaccine acceptance. This demonstrates that media framing significantly predicts health attitudes such as COVID-19 vaccine hesitancy.

Public opinion leaders use media to share their policy preferences with the electorate. Bolsen & Palm (2021) argue that science has been politicized during the COVID-19 pandemic and helps explain vaccine hesitancy. To prevent lockdown policies, President Trump significantly downplayed the adverse effect of COVID-19 on health. This mixed signal from a public opinion leader such as Donald Trump has influenced the low acceptance rate among a percentage of the population in the United States. In addition, by categorizing the COVID-19 pandemic as a hoax, President Trump affected people's attitudes and behaviors toward CDC guidance and their willingness to get vaccinated (N. Cook & Choi, 2020). President Trumps did not just downplay the COVID-19 pandemic but also promoted unproven medical solutions, such as drinking bleach or using hydroxychloroquine to cure COVID-19 (Kahane, 2021). Mackey et al. (2021) argue that President Trump massively promoted COVID-19-related misinformation through his Twitter account, which explains why his account was banned from the platform. Many Republican political leaders supported President Trump and promoted COVID-19 vaccine skepticism among the population (Hornsey et al., 2020; Ugarte et al., 2021; Niburski et al., 2020). President Trump strategically used mass media

to promote unproven medicine that downplayed the relevance of most COVID-19 vaccines (Agrawal et al., 2020). COVID-19 vaccine endorsement by liberal public opinion leaders such as President Biden, President Obama, and Dr. Anthony Fauci significantly influenced COVID-19 vaccine acceptance among partisan communities in the United States. Bokemper et al. (2021) observe that COVID-19 endorsement by public opinion figures more positively affects Democrats than Republicans. This suggests that partisanship influences health attitudes and behaviors beyond media and political leaders.

4.1.2 Political factors influencing vaccine hesitancy: partisanship, and race identity

Race has been an important characteristic of group membership and the feeling of belonging in the United States (Schrag, 2010). Early in the 1790s, American citizenship was primarily granted through naturalization to "free white persons" [5] and gradually got expanded to other races and gender. The feeling of belonging to the American community and politics resulted from racial, and gender attributes (Bosniak, 2008). Although these racial and gender categorizations no longer determine citizenship and political incorporation in the United States, perceptions of membership in the American identity seem to be lower among communities of color compared to White communities (R. M. Smith, 2011; Berger, 2010). Factors such as slavery, the Jim Crow laws for blacks, and the nonrecognition of citizenship for Native Americans until 1924,[6] as well as the exclusion of Chinese from citizenship until 1943[7] appear to have influenced the political incorporation of communities of color in the United States and their perception of belonging to the American identity (Masuoka & Junn, 2013).

[5]Check out: Nationality Act of 1790. Last retrieved 09/20/2022.

[6]Check out: Native Americans Weren't Guaranteed the Right to Vote in Every State Until 1962.Last retrieved 09/20/2022.

[7]Check out: Chinese Exclusion Act (1882). Last retrieved 09/20/2022.

As early in American history, citizenship was a function of racial and gender considerations, and perceptions of historical racial hierarchy continue to influence attitudes and behaviors among communities of color. African Americans were considered second-class citizens compared to White because of historical factors such as slavery and racial segregation. Masuoka & Junn (2013) observe that regarding Asian Americans and Latinos, not having English as a native language is associated with a low perception of political incorporation into the American system. Economic and social deprivation is usually the primary characteristic of implicit racial hierarchy. Minority groups have less access to economic opportunity and political power than the majority. Bassouk & Donelan (2003) argue that groups experiencing social and economic deprivation hold low social and economic status in society and are usually hit harder by social and environmental hardship. The case of COVID-19 pandemic is a good example. Khazanchi et al. (2020) argue that the COVID-19 hospitalization rate is 4.5 times higher among Black and Latino communities than White communities. This is explained by the lower social-economic status of those communities (Hardaway & McLoyd, 2009). Groups with social and economic deprivation usually suffer from access to public resources that will help them improve their social condition. Besides, groups with social deprivation face various forms of social exclusion, such as high unemployment and imprisonment rates. Hardaway & McLoyd (2009) observe that communities of color tend to be concentrated more in lower socioeconomic classes than White communities.

As historical factors, as mentioned above, influence perceptions of racial interaction and politics, partisanship significantly affects public opinions on health policy preferences. For example, partisanship seems to be a strong determinant of immigration-related policy preferences among races. Regarding health attitudes and behaviors, the previous chapter and many studies demonstrate the relationship between COVID-19 vaccine acceptance and partisanship (Kreps & Kriner, 2021; D. R. Jones & McDermott, 2022). Republicans are less likely to vaccinate against COVID-19 than Republicans, which remains consistent across races and

ethnicities (D. R. Jones & McDermott, 2022). The electorate uses political parties as short-cut heuristics to evaluate the COVID-19 vaccine efficacy. Kreps & Kriner (2021) argue that Democrats are more likely to perceive high COVID-19 vaccine efficacy than Republicans. Partisanship influence indirectly perceptions such as trust in science and trust in health institutions. Although, as shown above, vaccine hesitancy is influenced by partisanship leaders, vaccine hesitancy also varies by race.

Kreps & Kriner (2021) find that trust in COVID-19 vaccine efficacy varies by racial groups, with Blacks less likely to trust vaccine efficacy than Whites. This shows that racial group identity could help explain public health attitudes and behaviors such as COVID-19 vaccine acceptance and uptake. Racial group identity is a significant characteristic of American politics. Aspects such as racial voting block (Barreto et al., 2010; Sanchez et al., 2015; Sanchez & Gomez-Aguinaga, 2017), cross-racial mobilization (Collingwood, 2012), and the impact of descriptive representation in the decision-making process (Rocca et al., 2008, 2009; Rocca & Sanchez, 2008) demonstrate the salience of race identity in the American politics. Besides, perceptions of American identities vary across racial groups (Huddy & Khatib, 2007; Transue, 2007). Individuals tend to define their American identity based on their racial positionality (Huddy, 2003). A corollary of the historical racial hierarchy and positionality is the definition of racial identity in terms of *in-group* and *outgroup*. Masuoka & Junn (2013) argue that the persistence of *in-group/outgroup* in racial interactions in the United States explains enduring phenomena such as racial group membership, loyalty, and linked fate. Understanding the acceptance of public services in the United States, specifically health services such as vaccination, implies considering racial attitudes and behaviors.

While *group identification* refers to the identification that individuals have toward a social stratum because of their level of education or income, *racial relative deprivation* refers to the self-identification that individuals have with a particular group (group identification) and the political awareness of the low position of the group within society (Jackman & Jackman, 1973;

Gurin & Patricia, 1980). Racial relative deprivation is a significant determinant of health attitudes and behaviors, especially within communities of color. A. H. Miller et al. (1981) observe that economic and social deprivation, which are at the core of group consciousness among African American and Latino communities, is a determinant component of relative racial deprivation. Racial claim among Black communities during the civil right movement between 1954 and 1968 was an expression of racial relative deprivation (Verba & Nie, 1987). As economic and social exclusion express relative racial deprivation, Dawson (1994) observes that relative racial deprivation helps explain racial identity, group consciousness, and linked fate among African Americans. African Americans are aware that though individualism is a significant characteristic of the American culture, their status at the individual level depends on the overall situation of their racial group. Therefore, racial-group identification and relative deprivation are determining factors explaining attitudes and behaviors at the personal level, not only among African Americans but also among communities of color overall. Racial relative deprivation explains racial health disparities in the United States. Muñoz-Price et al. (2020) argue that poverty is the significant determinant of COVID-19-related hospitalization and death. As the poverty rate is higher among communities of color, communities of color present a higher rate of COVID-19-related hospitalization and intensive care.

4.1.3 Underlying racial health disparities in the US

Racial health disparity is a significant characteristic of the American healthcare system. This situation is concerning because the United States is a multicultural country where the racial configuration is changing quickly. A study from Pew research suggests that by 2050, Latinos will represent 29 percent of the population, Blacks 13.4 percent of the population, Asians 9 percent of the population, and White non-Hispanics 47 percent of the population.[8]

[8]Check out: U.S. Population Projections: 2005-2050 Last retrieved 10/10/2022.

As minority groups significantly increase, health disparities will constitute a major public health issue by 2050 if not well managed. Studies show that health qualities vary per race. Kawachi et al. (2005) observe that race is usually a risk factor for health outcomes because its high correlation with socioeconomic status. The poverty rate among Black communities is 2.5 times that of non-Hispanic White communities. This explains why access to health services is lower among Blacks compared to Whites.

LaVeist (1994) observes that attitudes, behaviors, and social forces existing among racial groups are determining factors explaining health disparities in the United States. Specifically, LaVeist (1994) argues that certain racial groups, such as the Black communities, are more likely to have low education and income and to face discrimination and racism. Such factors make them more likely to face health issues, and because of structural inequalities, their chances of changing their status in society are pretty low. In this state of matter, race is considered a risk factor and explains health disparities because it is related to the capacity of individuals to access healthcare services. Furthermore, the mortality rate among racial groups confirmed that health disparities are a function of race. Blacks and communities of color present a higher mortality rate than White communities (Navarro, 1991; Sterling et al., 1993; James & Cossman, 2017).

Structural factors such as historical racial hierarchy and racial categorization explain health and wealth disparities among races in the United States. Hero et al. (2009) contend that group classification is a significant characteristic of the policymaking process in the United States. Racial group categorization results from the perception of implicit racial hierarchy and racial stereotypes. Omi & Winant (1993) argue that while Whites are perceived as the highest level in racial hierarchy, Blacks are systematically perceived as the lowest rank. Hypo-descent beliefs characterize such perception of racial hierarchy (Hickman, 1996; Kottak, 2009; Ho et al., 2011; Krosch et al., 2013; Ho et al., 2017). The more a racial group has a higher rank in the racial categorization, the more they face fewer barriers to the political

system and the more they benefit from positive stereotypes. Conversely, the lower rank in the racial hierarchy, the more barrier to entry into the political system and the more negative stereotype associated with the race. African Americans, for example, have been perceived as being hypersexualized, drug addicted, insubordinate, aggressive, and noncompliant with low intellectual capacities (Harris-Perry, 2011). Such negative stereotypes were spread through media and Television channels (Booker, 2000) and negatively affected health among Black communities.

The issue of health disparities cannot be separated from racial discrimination and unequal access to healthcare. Morrison et al. (2000) argue that communities of color have less access to health services than White communities because of a lack of resources such as hospitals and pharmaceutical companies in their neighbors. Paradoxically, LaVeist & Wallace Jr (2000) demonstrate that liquor stores and companies are disproportionately located in Black neighborhoods and have a detrimental effect on health among Black communities. Environmental risk exposure is another structural factor affecting health disparities among races in the United States. P. Brown (1995), and Faber & Krieg (2002) find that communities of color are disproportionately more exposed to environmental hazards than White communities because of their concentration in environmentally risky areas.

Another aspect explaining health disparities among racial groups in the United States is the unequal distribution of resources among racial communities. Chong & Kim (2006) with their "*theory of opportunity*" contend that relative racial deprivation varies by racial groups in terms of the level of economic exclusion. Racial relative poverty seems to be higher among African Americans than other races because of their historical immigration status as enslaved groups which continues to influence their access to economic opportunity. On the other hand, the perception of racial discrimination among Asian groups has been increasing because of their relative financial access, though still lower than that of Whites groups. In regards to Latinos, Alba & Nee (2005) find that although Latinos share with

Blacks low status in social classes, their political incorporation and mobility within the United States have made Latinos more confident in their chance of success in the American culture compared to Blacks. Poverty adversely affects access to healthcare. Because poverty affects access to education, poverty is negatively related to health outcomes. Schillinger et al. (2006) observe that literacy is positively associated with health outcomes; the more individuals are educated, the more they invest in their health.

Structural racism is a significant factor affecting health disparities in the United States. D. R. Williams & Collins (2016) argues that racial segregation has detrimental effects on African Americans' health. Segregation has created disparities in social-economic status and education, with African American children receiving a lower quality of education. A significant result of segregation has been environmental racism. During the segregation, African Americans were forced to live around environmentally risky areas that adversely affected their health (Lopez, 2002; H. Woo et al., 2021). This suggests that health disparities are related to racial discrimination and can help explain the disproportion in health service acceptance among racial groups in the United States. A major exogenous choc such as a pandemic will have a devastating effect on racial health outcomes in a context marked by structural racial health disparities, such as the United States. Indeed, the management of the COVID-19 pandemic has been adversely affected the existing racial health disparities in the United States. In such a context, access to the COVID-19 vaccine will vary among racial communities.

4.1.4 COVID-19 pandemic and health disparities among race in the US

Vaccine hesitancy can be defined as skepticism and mistrust toward a vaccine that is available and easily accessible to the public. Despite the availability of the COVID-19 vaccine

and incentives implemented to increase vaccination uptake, COVID-19 vaccine hesitancy remains a significant concern in the United States. Vaccine hesitancy includes low confidence in getting vaccinated, getting vaccines as a result of mandates, and being skeptical about specific brands and types of vaccine...(Larson et al., 2014; M. J. Smith, 2015; Cataldi & O'Leary, 2021).

The COVID-19 vaccine acceptance and access vary across regions and racial communities in the United States (Njoku et al., 2021). While COVID-19 vaccines have been available free of charge to everyone, vaccine hesitancy appears to be higher among communities of color. Data from the Kaiser Family Foundation (2021) suggests that African-Americans/Blacks have lower COVID-19 vaccination rates than other races and ethnic groups.[9]. In addition, other factors, such as partisanship and political predisposition, explain COVID-19 vaccine hesitancy.

The 2020 US presidential election unveiled significant relationships between politics and public health. The failure of a portion of the population to get vaccinated against COVID-19 is regarded as a consequence of the politicization of the vaccine (Pfattheicher et al., 2021; Bolsen & Palm, 2021). Gauchat (2012) finds that conservatives trust in science and innovation has decreased within the last decade. President Trump repeatedly downplayed the COVID-19 pandemic as a significant public health issue in the first term of his mandate. To journalist Bob Woodward, Trump acknowledged having purposely downplayed the COVID-19 pandemic to avoid causing social panic and economic distress (Summers, 2020). This suggests that COVID-19 vaccine factors such as partisanship and elite polarization have influenced the attitudes regarding COVID-19 vaccine hesitancy.

The COVID-19 pandemic has significantly impacted most aspects of politics in the United States. The pandemic has tremendously affected the allocation of resources and interactions within and between racial groups. In terms of democracy and national security, the pandemic

[9]Check out the link:"KFF: vaccine hesitancy per races." Last retrieved: September 09, 2021, at 1 pm.

exacerbated structural inequalities in the United States by first hitting the lower socioeconomic classes, mostly Black, Latino, and Native American communities.Sáenz (2020) finds that people of color have been more likely to test positive for COVID-19 than Whites. In addition, the COVID-19 mortality rate has been higher among Black and Latino communities.

Structural health disparities can explain higher rates of COVID-19-related deaths. Pre-existing conditions (diabetes, obesity, and asthma) among people of color have increased COVID-19-related morbidity and mortality rate among those communities (Hsu et al., 2020). Homelessness is another factor contributing to health disparities. Harrison (1999) argues that there is a disproportionate rate of homelessness among African-American/Black communities. In addition, high COVID-19-related transmission rates and deaths are observed among individuals who are homeless (Leifheit et al., 2021). These factors have exacerbated health disparities among races during the pandemic.

Ray & Rojas (2020) observe that structural racism in the United States explains why people of color are most affected by the pandemic. Living in segregated areas with high population density for public services makes people of color more vulnerable to contagious diseases. Sanchez et al. (2017) find that health insurance coverage is another issue that has increased health disparities among races during the pandemic, as people of color are less likely to have health insurance than Whites. Furthermore, the pandemic, with a devastating impact on national economies, led to increasing unemployment rates among African-American and Latino communities, which has caused an increase in the uninsured among communities of color.

Finally, homeschooling has been a significant issue among communities of color, especially Latinos, exacerbated by the pandemic. With a high comparative fertility rate (Parrado & Flippen, 2012), the option of homeschooling constitutes an undue burden for parents who are essential workers. In addition, Petts et al. (2021) argue that the loss of childcare caused by the

pandemic increased the likelihood of mothers losing their jobs to take care of their children's education. All these factors demonstrate how the COVID-19 pandemic has exacerbated health disparities among racial groups in the United States.

4.2 Theories

4.2.1 Experienced discrimination: healthcare discrimination

The deaths of Eric Garner in 2014 and George Floyd in 2020 unveiled the underlying issue of discrimination and racism in the United States. Police discrimination, for example, is among forms of systematic discrimination that plague the racial relationship and fuel racial resentment in the United States. Other forms of discrimination imply environmental racism. For example, because of their low social-economic status, communities of color are more likely to live in polluted areas with the presence of waste and pollutants. Such discriminations are experienced discrimination that influences health attitudes and behaviors among communities of color. This section explores the impact of experienced discrimination in the health sector.

Race is an essential component of American politics. Indeed, race is fundamental in politics (voting block, descriptive representation...), economics (social-economic status, welfare state...), healthcare policy, and management. Moreover, as shown in the previous section, race identity and health disparities affect health behaviors and policymaking. C. P. Jones et al. (1991) observes that race is a fundamental aspect of public health research because of the observed racial health disparities in the United States. Therefore, understanding the social determinant of acceptance of public health services implies considering the place of race in the policymaking process. The case of COVID-19 vaccine hesitancy is a good example; public health experts and pundits believe that vaccination is the fastest and safest strategy to contain the spread of the virus and reach herd immunity Pilishvili et al. (2021). This ex-

plains why decision-makers worldwide implemented mass vaccination strategies free of charge to the citizens. However, despite the vaccine's effectiveness, many remain skeptical about vaccinating against COVID-19. The rate of vaccine hesitancy is particularly pronounced among communities of color, specifically Black and Latino communities (Khubchandani et al., 2021; Khubchandani & Macias, 2021). This section explores a possible explanation of vaccine hesitancy among Blacks and Latinos, which is experienced discrimination in the health sector.

Racial discrimination in the health sector significantly hinders trust between communities of color and the healthcare system (Seeman et al., 1997). Research suggests that unhealthy behaviors coupled with mistrust of health services are direct consequences of experienced discrimination in the health sector (Pascoe & Smart Richman, 2009). Experienced discrimination is substantial when it is systematic to a particular racial group. Inzlicht et al. (2006) argue that experienced discrimination among racial groups explains the sub-optimal decision about personal health. Individuals experiencing discrimination in the health sector are more likely to indulge in less healthy attitudes and behaviors. For example, Landrine & Klonoff (1996) find that exposure to racial discrimination in the health sector is associated with high consumption of alcohol, smoking, and addictive substances. Moreover, individuals experiencing racial discrimination are more likely to search for alternative health services. Ryan et al. (2007) find that racial groups facing discrimination in the health sector are less likely to practice preventive health behaviors such as early cancer screening and regular consultation.

Goodman et al. (2019) finds that life expectancy differs by racial groups in the United States. This is a direct result of experienced discrimination not only in healthcare but in society as a whole. In that logic, Chae et al. (2011); M. Woo et al. (2011), and Sternthal et al. (2011) show that racial structural inequalities in the United States explain not only disparities in terms of access to health goods and services but also disparities in the willingness to interact with healthcare. In that logic, it can be assumed that acceptance of public

health services such as vaccination is a function of experienced discrimination.

Hypothesis I: Healthcare discrimination is positively related COVID-19 vaccine-hesitancy.

4.2.2 Perceived discrimination

Masuoka & Junn (2013) observes that individuals' perceptions and behaviors are a function of their racial position in the social system. Like gender, race is not merely a biological construct but an arrangement of norms and social attributes influencing individuals' opportunities and political experiences. Researcher such as Bowler & Segura (2011); Kinder & Kam (2010), and L. Fraga et al. (2010) argues that implicit racial hierarchy is at the core of political attitudes and behaviors in the United States. Understanding how the politicization of public facts such as vaccination influences the public implies evaluating attitudes and behaviors by racial groups.

Until the enactment of the fourteen amendments, only free White individuals were granted the right to vote. Blacks and communities of color could not express their policy preferences and thus participate in improving their community's health and educational needs. Quarles (1987) observe that during the Jim Crow era, Blacks were second-class patients and could see a doctor only after White patients' needs were met. Although such overt racial discrimination has been abolished and sanctioned since the civil right movement and the enactment of the thirteen, fourteen, and fifteen amendments, the impacts of historical factors such as the black codes are still noticeable. This section addresses how perceived discrimination resulting from historical racial hierarchy influenced vaccine hesitancy among African Americans.Peterson & Riley III (2022) argue that Racial resentment influences attitudes and behaviors among marginalized communities. J. A. Berry et al. (2022), in analyzing the impact of perceived discrimination on political attitudes and behaviors, find that racial resentment has been a determinant factor explaining vote choice among African Americans during the 2016 US presidential. As perceived discrimination influences political attitudes

and behaviors, this paper intends to demonstrate that perceived discrimination goes beyond political behavior and influences public health attitudes, such as vaccine hesitancy.

The Kernel report to President Lyndon Johnson in 1968 presented the United States as "Nation... Moving Toward Two Societies, One Black, One White—Separate and Unequal." [10] This report ushered the issue of racial segregation and perceived discrimination in the United States. In addition, an analysis of the dissimilarity index in the United States shows that racial segregation is negatively related to health outcomes, especially among Black communities.[11] Specifically, LaVeist (1989, 1993) find a negative relationship between Black health outcome and segregation, and D. R. Williams & Collins (2016) a strong association between racial segregation and Adult mortality rate among African Americans. These findings suggest that structural racism, such as racial segregation, has impacted health outcomes among Black communities and shaped their health attitudes and behaviors.

Perceived discrimination results not only from historical discrimination but also from social construction, such as negative stereotypes. McNeil Smith et al. (2020), and A. Schulz et al. (2000) find that negative stereotype against Blacks influences their health attitudes and behaviors. Compared to other races, self-esteem has been pretty low among Blacks (Sipress, 2017). J. Taylor & Jackson (1990) contend that the internationalization of anti-Blacks negative stereotypes by Blacks helps explain low self-esteem observed among the Black communities. These low self-esteem are associated with bad self-reported health. In addition, negative stereotypes have a detrimental effect on the stress level among Black communities (D. R. Williams & Mohammed, 2009). Finally, perceived discrimination among Black communities has influenced their health attitudes and behaviors and their mental health (Robinson, 2004).

Health attitudes among Black communities are, therefore, a function of racial discrimina-

[10] Check out: "Our Nation Is Moving Toward Two Societies, One Black, One White—Separate and Unequal": Excerpts from the Kerner Report.Last retrieved 09/25/2022.

[11] Check out: Residential Segregation - Black/WhiteLast retrieved 09/25/2022.

tion. Garcia et al. (2015) addresses the question of race as a *lived experience* and shows that perceptions about health disparities influence self-reported health status. Specifically, their study shows that experiencing discrimination based on skin color is negatively related to self-rated health status among Latinos. Elam-Evans et al. (2008) go further by arguing that Latinos who identified themselves as being "white" present better health outcomes compared to those who identified themselves as "other ."On the other hand, Latinos identifying themselves as "black" are more likely to report forms of discrimination than Latinos identifying themselves as "white" (Garcia et al., 2015). This suggests that colorism appears to be an essential input influencing health attitudes and preferences. C. Keith Verna Mand Herring (1991); C. J. Cohen (2009), and Herring et al. (2004), in the same logic, observe that skin pigmentation is negatively related to outcomes and health status among African Americans. African Americans with dark skin are more likely to report discrimination and lower incomes than those with lighter skin. The way society perceives you (street race) influences how people evaluate their health (López et al., 2018). Perceived discrimination is a significant factor influencing health attitudes and behaviors.

Hypothesis II: Perceived discrimination among Blacks is positively related to COVID-19 vaccine hesitancy.

4.2.3 Latinos-salient policy area: immigration

Vargas et al. (2019) argue that immigration policy is a determinant factor influencing Latino's public attitudes and behaviors. Because of the significant controversies associated with immigration-related concerns in American politics, Latinos immigrants and those connected with immigrants are influenced by the political climate related to the question of immigration in the United States. Vargas et al. (2017) observe that immigrants tend to be perceived as a threat to economic growth and the country's identity. Despite the rich diversity of Latin America, Alarcón (2014) observes that Latinos are presented as a block

group threatening the American identity because of their perceived impact on immigration, crime rate, and unemployment. Arias & Hellmueller (2016) argue that News Media tend to present Latinos immigration as the invasion of "illegal immigrants, dangerous and violent." Such stereotypes are pervasive and reinforce the implicit racial hierarchy observed in the United States. Stereotypes have a functional role in differentiating races. Maintaining racial stereotypes helps maintain racial hierarchy (Sidanius & Pratto, 2001). Because of such political climates, Sanchez & Masuoka (2010) argue that immigration experiences among Latinos are among the factors explaining their group identity and linked fate in the United States. Support for progressive immigration reform tends to be welcomed by Latinos.

Latinos' voting block and other forms of Latino support for a policy or political leaders are expressions of group consciousness and linked fate among Latinos. For example, Collingwood et al. (2014) find that despite relative high deportation during his first presidential mandate, Latino's support for President Obama to the detriment of the presidential candidate Romney could be explained by Obama's preference for a comprehensive immigration policy.[12] Although immigration is a salient policy question among Latinos, there is some variation in partisanship. Republican Latinos are more likely to support restrictive immigration than Democrats, even if the Latino electorate is mostly Democrats. The same observations are found with African Americans and Asian Americans. African Americans Republicans seem to be more likely to support restrictive immigration policies than African American Democrats. Republican Asian Americans are more likely to support restrictive immigration policies than Asian Americans Democrats (Masuoka & Junn, 2013). This suggests that public opinion on immigration-related policy issues is shaped and modeled through ideological, partisanship, and racial identity lenses.

L. R. Fraga & Segura (2006) demonstrate that minorities have a strong political attachment to the American country. J. S. Wong et al. (2011), in the same logic, argue that the

[12]Specifically, Obama supports immigration reform such as the DREAM Act.

political incorporation of immigrants into the American culture is potent in shaping attitudes and behaviors. The significant level of political participation and military service engagement observed among Latinos demonstrate their attachment to the United States (Armor & Gilroy, 2010). These observations suggest that variation in public health services acceptance, specifically vaccine acceptance among racial groups in the United States, is not the result of the level of patriotism but racial identity and policy preferences.

Immigration-related policies have been observed as a determinant factor influencing not only political participation among Latinos but also their overall health attitudes and behaviors. Sanchez (2006) observes that issue salience differentiates the level of political participation from one racial group to another. In analyzing the relevance of group consciousness among the Latino community, Sanchez (2006) finds that immigration and bilingual education are core factors associated with consolidating Latino group consciousness. Furthermore, discriminatory policies against immigration and bilingual education cement group consciousness among Latinos. Pastor & Sanchez (2012) observe that the polarization of American politics reinforces the feeling of belonging among the Latino community. Polarized issues such as immigration have strengthened the bonds within the Latino community.

Restrictive immigration policies have been detrimental to the health and well-being of the Latino communities (Pedraza et al., 2017). As immigration is related to healthcare coverage, restrictive immigration policy weakens Latino relationships with the healthcare system. Pedraza et al. (2017) argue that health service acceptance tends to be low among Latino US citizens when restrictive immigration policies are applied. Sanchez et al. (2015) argue that Latinos connected to undocumented immigrants are more interested in immigration-related policy than those less connected. Immigration-related policies are usually the cause of low presidential approval among Latino communities. As immigration is documented as a determinant factor influencing political attitudes and behaviors among Latinos (Sanchez, 2006; Sanchez & Masuoka, 2010; Sanchez et al., 2015; Vargas et al., 2019; Pastor & Sanchez,

2012), this paper intends to show that immigration related-attitudes help explain COVID-19 vaccine hesitancy among Latinos.

Hypothesis III: Latinos considering that COVID-19 vaccination could complicate their immigration status, are highly likely to be vaccine-hesitant.

4.2.4 Historical medical racism against African-Americans and Native Americans

While group consciousness implies a form of membership among marginalized people of particular social stratifications, historical medical racism implies an existing mistrust between racial groups and health institutions. The case of medical racism against the African-American/Black community in the United States is a critical example. Medical racism as race-based treatments and race-based medical experimentations such as the Tuskegee study demonstrate the salience of racism in the health sector. A. L. Taylor et al. (2004) argue that race-based treatment, for instance, has been a structural barrier preventing minorities' access to quality healthcare services. During slavery, practices using Blacks for medical experiments were common in the United States. Nuriddin et al. (2020) observe that many Blacks were the propriety of medical school and underwent several medical experiments without their consent. African Americans have suffered from various forms of negative stereotypes in the medical field. A good example is the fact that Blacks have been perceived as hypersexualized, drug addicted, insubordinate, aggressive, and noncompliant with low intellectual capacities (Harris-Perry, 2011). The spread of such negative stereotypes through media and Television channels has exacerbated the trust between Black communities and health institutions (Booker, 2000).

Historical medical racism against African Americans/Blacks finds its root in slavery and racial segregation (Jim Crow laws). The institutionalization of racism against the African-

American/Black community explains the mistrust African-Americans seem to have towards institutions, particularly those in the health sector. In addition, historical racism against African-Americans has influenced their political mobilization and participation and helps explain their health attitudes and behaviors. Dawson (1994, 1997, 2001) and Constantine (2006) argue that slavery coupled with structural racism explains political attitudes and behaviors among African-Americans. Avery (2006) goes further by finding that historical discrimination towards African-American communities is responsible for the political mistrust that the African-American communities have toward American institutions. While historical racism explains political attitudes among African Americans, this paper intends to demonstrate that historical medical racism explains health attitudes, specifically vaccine hesitancy among Black communities.

Like African Americans, Native Americans have also suffered diverse forms of historical structural racism that have affected their health. In a related field of research, C. M. Pacheco et al. (2013) argue that unethical research practices between the Federal/States government and Native American communities have eroded trust between Native Americans and the American governments. While malpractices such as the Tuskegee study are an example of historical medical racism in Black communities, unethical research on Tarsectomy treatment is an example of historical medical racism experimented on Native Americans. Eugenic law intending to impair the reproductive health among Native Americans, and African Americans during the 1900s, are among trauma impinging the relationship between health institutions and facilities with Blacks and Native Americans (Nuriddin et al., 2020). The mistrust between the Native American communities and the Federal government of the United States is also the result of cultural divergence and relocation that has affected their medical practices and cultural heritage (Tinker, 1993; Grand, 2019). The Indian Removal Act is a good example; millions of Native Americans were forced to leave their lands and social environment to relocate to reservations in Oklahoma. These forced relocations caused a significant increase

in mental health and other preventable diseases in those communities (LaVeist, 2011). Native Americans have also faced various negative stereotypes throughout history, categorizing them as savage and intellectually deficient (A. V. Smith, 2018; Waite, 2013). Ray & Rojas (2020) argue such forms of structural racism in the United States have exacerbated the social trust between Native American communities and health institutions in the United States.

Hypothesis IV: Native Americans and African-Americans aware of historical medical racism against their race are more likely to be COVID-19 vaccine-hesitant.

4.3 Data and Methods

This chapter aims to determine whether vaccine hesitancy is explained by racial factors, specifically racial discrimination, perceived discrimination, experienced discrimination in health care, historical medical racism, and perception of immigration policy. Understanding health attitudes and behaviors as an output of the political system require evaluating the power dynamics within the decision centers that affect public health behaviors. Most research on COVID-19 vaccine hesitancy address risk-perceptions related to the vaccine (Rutten et al., 2021; Coustasse et al., 2021; Machingaidze & Wiysonge, 2021), demographic characteristics (Khubchandani & Macias, 2021; Nguyen et al., 2021; Willis et al., 2021; Shih et al., 2021), risk-factors (Soares et al., 2021), partisanship (Fridman et al., 2021), and socioeconomic status (Kricorian et al., 2022). Though these alternative hypotheses will be evaluated in this paper, the primary focus of this research is to determine whether race-related structural issues have influenced vaccine hesitancy among communities of color in the United States. Using the 2021 African American Research Collaborative Vaccine Hesitancy survey, I implemented a cross-sectional analysis to study how public health attitudes such as COVID-19 vaccine hesitancy are shaped and modeled by racial discrimination factors. To measure the impact of the primary independent variables on vaccine hesitancy, I filtered out the data to

capture only respondents who were not vaccinated at the time of the survey.

Dependent variable The explanatory variable of this study is COVID-19 vaccine hesitancy. Vaccine hesitancy serves as a measure of public health attitudes. The COVID-19 pandemic has exacerbated health outcomes and socioeconomic disparities among racial groups in the United States. Despite the urgency of mass vaccination against COVID-19 and the availability of information about the effectiveness of COVID-19 vaccines, vaccine hesitancy remains a significant public health issue that has weakened the institutional response against COVID-19. The added value of this research is to demonstrate that racial discrimination in diverse forms explains COVID-19 vaccine hesitancy among communities of color.

Vaccine hesitancy is operationalized in the survey through the question: "Regardless of how you answered above, do you have any hesitancy or concerns about getting the COVID-19 vaccine?" The preset answers are: "Yes, I have some hesitancy or concerns" coded as 1; and "No, I do not have any hesitancy or concerns" coded as 2. I transformed the variable into a dummy with some hesitancy coded as 1.

Primary independent variables The leading independent variables I use to explain vaccine hesitancy are perceived discrimination, healthcare discrimination, and historical medical racism. *Experienced discrimination* is the first primary independent variable used in this chapter. The questions in the survey address any form of racial discrimination that the respondents or anyone in the respondent's household faced in healthcare. I created an experience scale using factor analysis technics. The Cronbach's alpha measure of internal consistency of the variables used is 0.81, which is substantial. The questions from the survey that I have used to create the factor variable are: question 12. Think about your past experiences with the medical profession. Do you believe that you or anyone living in your household has had any of the following happen because of their race, ethnicity, or language? [Make each a Yes/No item] : a. Not been offered the best available treatment; b. Not been

referred to see specialists; c. Been denied the opportunity to speak with a physician; d. Been denied or delayed access to any needed healthcare services; e. Not able to access medical care in preferred language.

The second primary independent variable I use to explain COVID-19 vaccine hesitancy is *perceived discrimination*. *perceived discrimination* is measured in the survey through the question: "Do you agree or disagree that discrimination against [RACIAL GROUP] people in the United States exists today? The variable is a four-point ordinal variable going from "Strongly agree" to "Strongly disagree." I reversed the categories order so that it goes from "Strongly disagree" to "Strongly agree."

Historical medical racism is the third primary independent variable I use to explain COVID-19 vaccine hesitancy among African Americans and Native American communities. The variable measures historical unethical medical practices performed on African and Native Americans. I created a scale using factor analysis techniques to measure the variable among African Americans and Native Americans, respectively. For African Americans, Cronbach's Alpha value is 0.81, which suggests solid internal consistency. The first questions from the survey used in the African American historical medical racism factor is: "Have you heard any of the following statements about the COVID-19 vaccine, and if so, what is your reaction? [Black Sample] Based on their history with talcum powder and other products, I do not trust Johnson and Johnson to make a safe COVID-19 vaccine; The COVID-19 vaccines were not tested thoroughly with Black people; Because of the nation's unethical medical experiments on African Americans, including the infamous Tuskegee syphilis experiments, we cannot trust the COVID-19 vaccine to be safe for our community."[13] The second question from the survey used to construct the African American historical medical racism scale is: " Have

[13]The preset questions for the questions above are:
No, I have not heard this – 1
Yes, I have heard this, but it does not impact whether I will get a vaccine. – 2
Yes, I have heard this, and it makes me less likely to get a vaccine..... – 3

you heard any of the following statements about the COVID-19 vaccine, and if so, what is your reaction? Black groups have experienced racism or discrimination in the healthcare system.[14] I created an index based on the preset answers and dummy out the variable, and coded the category "Yes, I have heard this, and it makes me less likely to get a vaccine" as 1.

Regarding Native Americans' historical medical racism, I use the question: "[Ask of Native Americans] Because of the nation's unethical medical research on Native Americans and exploitation of tribal communities by the federal government; we cannot trust the COVID-19 vaccine to be safe for our community." The preset answers are: "No, I have not heard this" coded as 1; "Yes I have heard this, but it does not impact whether I will get a vaccine" coded as 2, and "Yes, I have heard this, and it makes me less likely to get a vaccine" coded as 3. I created a dummy variable and categorized "Yes, I have heard this, and it makes me less likely to get a vaccine" as 1.

Immigration is a Latino-salient policy area I use to explain COVID-19 vaccine hesitancy among Latinos. The variable is operationalized in the survey by the question: "[Asked of Latinos or anyone foreign born] Signing up for the COVID-19 vaccine could complicate your immigration status with the government." The variable is a nominal variable with the preset answers: "No, I have not heard this coded as 1"; "Yes, I have heard this, but it does not impact whether I will get a vaccine coded as 2"; "Yes, I have heard this, and it makes me less likely to get a vaccine" coded as 3. I created a dummy variable and categorized the preset answer "Yes, I have heard this, and it makes me less likely to get a vaccine" as 1.

Table 4.1 presents the summary descriptive statistics among those unvaccinated against COVID-19 for all the variables I use in this chapter. To ensure that the relationship between my main independent variables and my dependent variable is not spurious, I controlled for demographic and social-economic status characteristics and risk-factors variables. I also

[14]Same preset answers as above.

controlled for political factors such as partisanship and the media effect.

Table 4.1: Summary descriptive statistic: COVID-19 Vaccine hesitancy —AACVP

Variable name	Obs	Mean	Std.Dv.	Min	Max
Vaccine hesitancy	3,541	.64	.48	0	1
Perceived discrimination	3,541	3.14	1.02	1	4
Healthcare discrimination	3,541	1.2	.3	1	2
Racial identity	3,541	3	1.15	1	4
Republican	3,541	.21	.41	0	1
Democrats	3,541	.39	.49	0	1
CNN	3,541	2.73	1.79	1	6
Fox News	3,541	2.84	1.79	1	6
Black	3,541	.22	.41	0	1
Latino	3,541	.25	.43	0	1
Asian Americans	3,541	.12	.32	0	1
Pacific Islanders	3,541	.014	.12	0	1
Native Americans	3,541	.2	.4	0	1
Female	3,502	.6	.49	0	1
Age	3,541	3.67	1.48	2	7
Education	3,541	3.28	1.43	1	6
Income	3,188	2.49	1.44	1	6
Employment status	3,541	.67	.47	0	1
No insurance	3,541	.14	.35	0	1
Preexisting condition	3,427	.23	.42	0	1

Control variables: demographic I controlled for demographic variables such as race, age, gender, employment status, and level of education. The variable race is measured through 5 dummy variables: Blacks, Latinos, Asian Americans, Pacific Islanders, and Native Americans, with Whites as the comparison group. The variable age is a 7-points ordinal variable going from 18 to 29 to 70 and above. Gender is a dummy variable, with females coded as 1. Employment status is a dummy variable with employed coded as 1. Finally, level of education is a 6-point ordinal variable going from "Grades 1 to 11" to "Post-graduate degree."

Control variables: alternative hypotheses I controlled for alternative hypotheses such as racial identity (ethnic attachment), partisanship, the media effect, risk factors such as health insurance, and whether or not the respondent has an underlying medical condition

(preexisting conditions). Racial identity is measured on the survey through the question: "81. How important is your racial identity as [RACE GROUP] in your daily life?" The variable is a four-point ordinal variable going from "Not important at all" to "Very important." Two dummy variables measure partisanship. Democrats (versus Independents) coded as 1, and Republicans (versus Independents) coded as 1. Regarding media, I controlled viewing CNN and Fox News. The questions are operationalized in the survey through question: 71. "How often do you use each of the following for information or news?" k-CNN; m-Fox News. The presets answers go from "Never used it" to "Many times per day." The variable No health insurance is a dummy variable with no insurance coded as 1. Finally, the preexisting condition variable is a dummy variable with an existing underlying medical condition coded as 1.

The following figures present the correlation matrix of the variables used in this research disaggregated by race. Using 0.5 as a threshold, Figure 4.1 presents the variables used in the full model without racial disaggregation. An analysis of Figure 4.1 suggests that all the variables are suitable for the models. Indeed all bivariate correlations between all the independent variables used in this paper to explain COVID-19 vaccine hesitancy have a pair-wise correlation lower than 0.5. The highest observed correlation are between race identity and perceived discrimination (Pearson's r = 0.4), CNN and Fox News (Pearson's r=0.4), income and education (Pearson's r=0.4). Republicans and Democrats correlate negatively with Pearson's r=-0.5 after rounding at one digit.

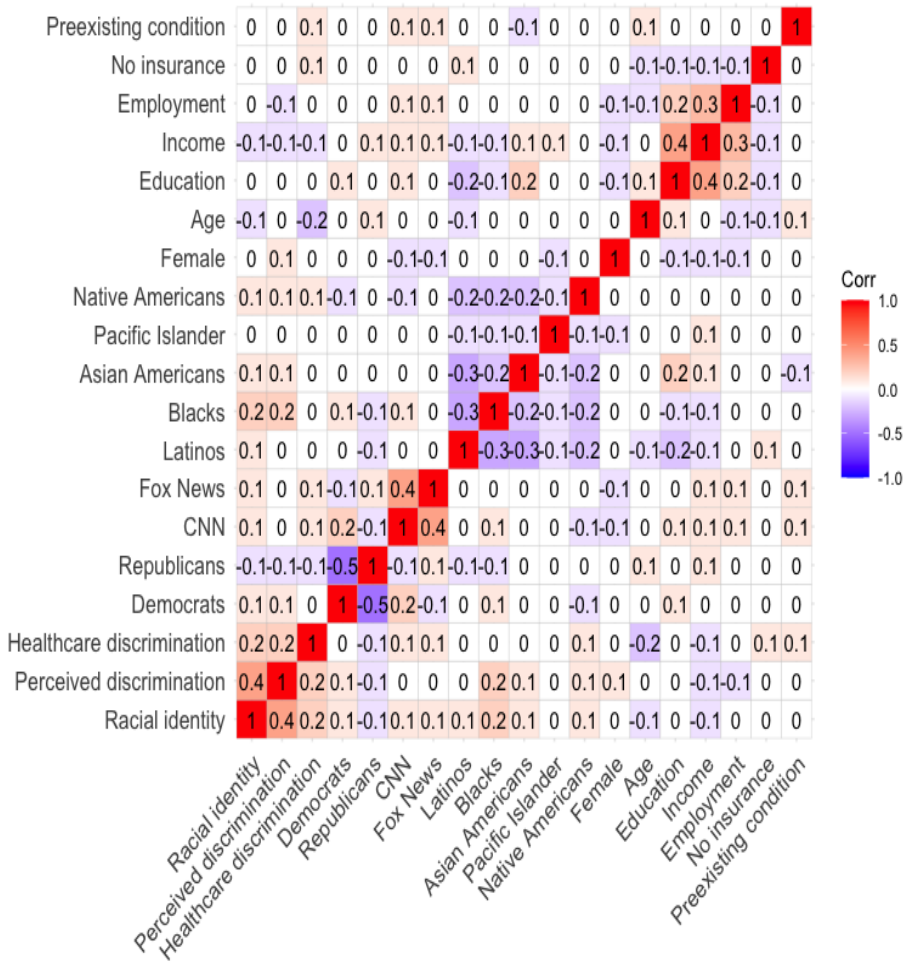

Figure 4.1: Correlation Matrix AACVP: Vaccine hesitancy

Figure 4.2 presents the correlation matrix of the all the independent variables used to explain COVID-19 vaccine hesitancy when the data is disaggragated for Blacks or African Americans. As Figure 4.1 correlation matrix, the highest observed correlation are between race identity and perceived discrimination (Pearson's r = 0.4), CNN and Fox News (Pearson's r=0.5), income and education (Pearson's r=0.4).

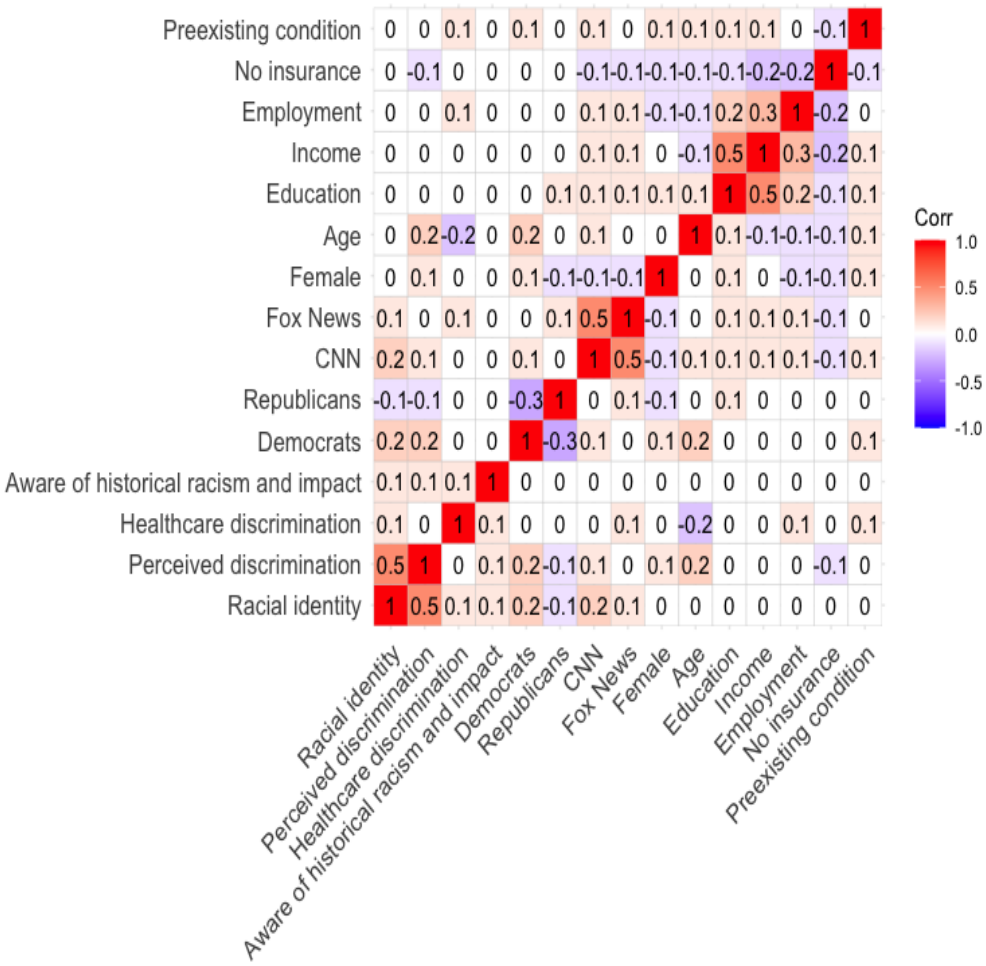

Figure 4.2: Correlation Matrix AACVP–Blacks: Vaccine hesitancy

Figure 4.3 presents the correlation matrix of all the independent variables used to explain COVID-19 vaccine hesitancy when the data is disaggragated for Latinos. The highest observed correlation is between CNN and Fox News (Pearson's r=0.6). Because of that high correlation, I will use only CNN in the models as a proxy to measure the alternative hypothesis media effect.

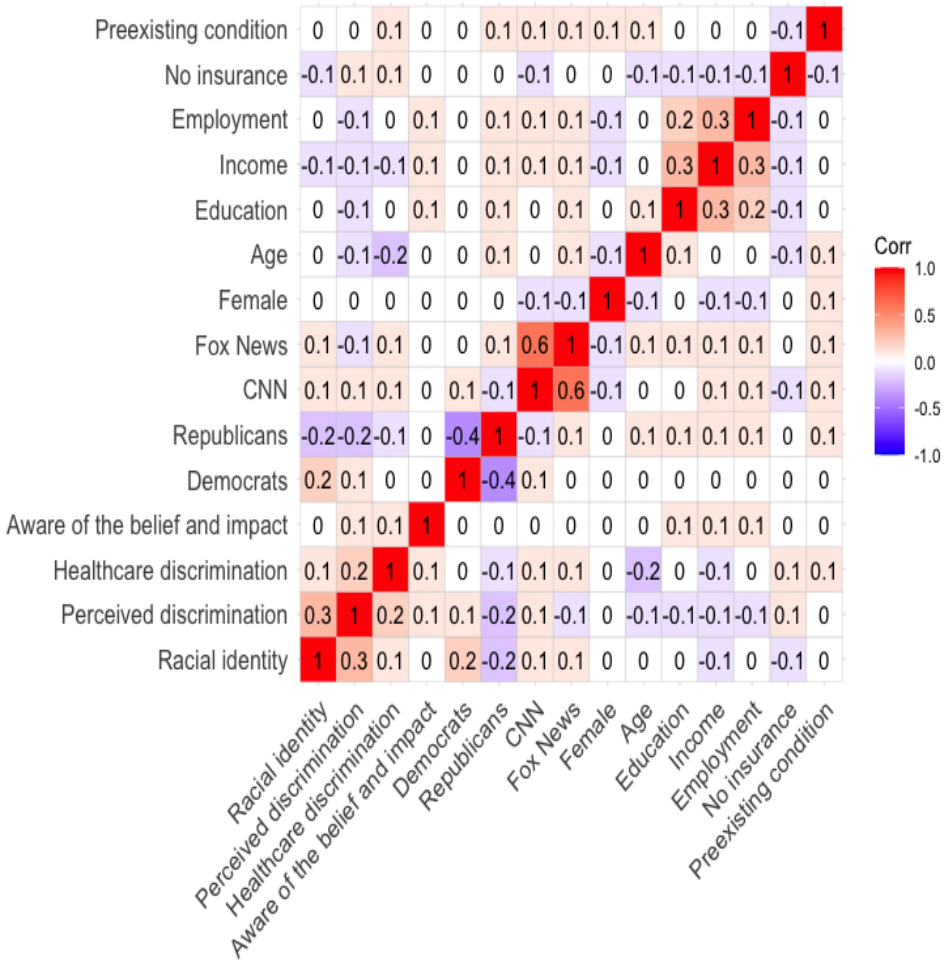

Figure 4.3: Correlation Matrix AACVP–Latinos: Vaccine hesitancy

Figure 4.4 presents the correlation matrix of all the independent variables used to explain COVID-19 vaccine hesitancy when the data is disaggragated for Native Americans. The highest observed correlation is between CNN and Fox News (Pearson's r=0.52). Because of that high correlation, I will use only CNN in the models as a proxy to measure the alternative hypothesis media effect.

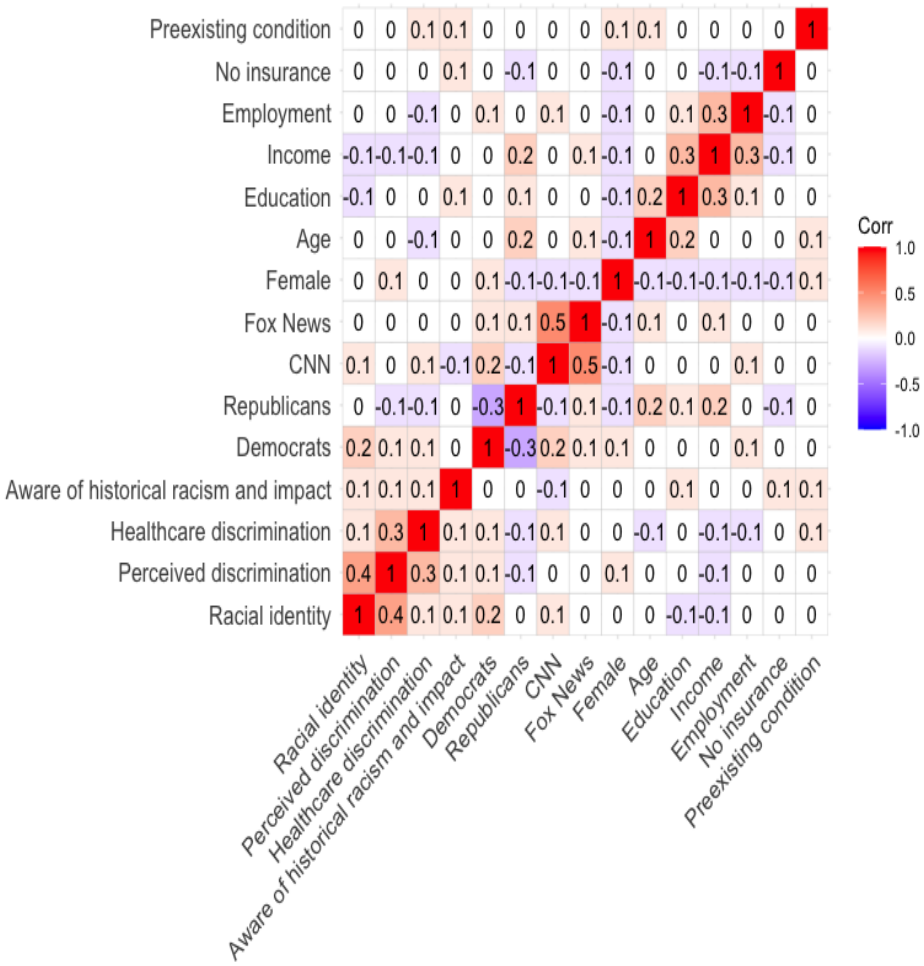

Figure 4.4: Correlation Matrix AACVP–Native Americans: Vaccine hesitancy

Logistic regression is used to estimate COVID-19 vaccine hesitancy based on the predictors mentioned above. The logistic regression helps draw out the significance and the direction of the relationship between the predictors and the dependent variable by categorizing the result into two categories: COVID-19 vaccine-hesitant vs. COVID-19 vaccine not hesitant. To control for the significance of the predictors per race, I constructed models per racial group.

The models studied in this paper are:

Model I: *Full model*

Vaccine hesitancy = α + β_1Perceived discrimination + β_2Healthcare discrimination + β_3Democrats + β_4Republicans + β_5CNN + β_6Gender + β_7Employment Status + β_8Education + β_9Age + β_{10}Income + β_{11}No Health Insurance + β_{12}Preexisting condition + β_{13}Blacks + β_{14}Latinos + β_{15}Natives Americans + β_{16}Asian Americans + β_{17}Pacific Islander + β_{18}Racial identity + ϵ.

I disaggregated data for African Americans, Latinos, and Native Americans to take into account race-specific variables such as historical medical racism, and immigration-salient policy.

Model II: *African Americans*

Vaccine hesitancy = α + β_1Perceived discrimination + β_2Healthcare discrimination + β_3Historical medical racism + β_4Democrats + β_5Republicans + β_6CNN + β_7Gender + β_8Employment Status + β_9Education + β_{10}Age + β_{11}Income + β_{12}No Health Insurance + β_{13}Preexisting condition + β_{14}Racial identity + ϵ.

Model III: *Latinos*

Vaccine hesitancy = α + β_1Perceived discrimination + β_2Healthcare discrimination + β_3Perception on immigration policy + β_4Democrats + β_5Republicans + β_6CNN + β_7Gender + β_8Employment Status + β_9Education + β_{10}Age + β_{11}Income + β_{12}No Health Insurance + β_{13}Preexisting condition + β_{14}Racial identity + ϵ.

Model IV: *Native Americans*

Vaccine hesitancy = α + β_1Perceived discrimination + β_2Healthcare discrimination + β_3Historical medical racism + β_4Democrats + β_5Republicans + β_6CNN + β_7Gender + β_8Employment Status + β_9Education + β_{10}Age + β_{11}Income + β_{12}No Health Insurance + β_{13}Preexisting condition + β_{14}Racial identity + ϵ.

4.4 Findings

This chapter addresses the influence of racial discrimination on health attitudes and behaviors controlling for policy and political factors. Specifically, this chapter evaluates how factors such as perceived discrimination, experienced discrimination in healthcare, and the awareness of historical medical racism have affected COVID-19 vaccine hesitancy among Blacks, Latinos, and Native American communities. Politics is evaluated by factors such as partisanship and, to a certain extent, by the media effect. Disaggregating the data per race helps assess how racial discrimination and partisanship influences COVID-19 vaccine hesitancy. Perceived discrimination, experienced discrimination in healthcare, and the awareness of historical medical racism help understand why, despite the vaccine's availability and available information regarding the vaccine's effectiveness, certain racial groups appear more COVID-19 vaccine hesitancy than White communities. To evaluate the full model, I used a post-stratification weight with a ranking algorithm by race based on the 2019 American Community Survey (ACS) census estimates delineated by the African American Research Collaborative Team. Table 4.2 presents the logit score of the full model and the disaggregated models of African Americans, Latinos, and Native Americans.

An analysis of Table 4.2 suggests that perceived discrimination is statistically significant at a 0.001 level and positively related to COVID-19 vaccine hesitancy in the full model. Regarding the disaggregated models, perceived discrimination is only significant among Blacks at a 0.001 level and positively related to COVID-19 vaccine hesitancy. This confirms the first hypothesis of this research. Perceived discrimination causes mistrust between African Americans communities and public institutions. However, perceived discrimination is not significant among Latinos and Native Americans. Historical factors such as racial hierarchy and categorizing African Americans as second-class citizens can help explain why perceived discrimination is an instrumental measure influencing health attitudes and behaviors

among African American communities. Assari et al. (2018), and Seaton et al. (2008) find that perceived discrimination has a detrimental effect on health attitudes and behaviors among Blacks. Stresses stimulated by perceived discrimination are associated with counterproductive health decisions in Black communities. These observations are corroborated in this research. Perceived discrimination explains counterproductive health attitudes such as COVID-19 vaccine hesitancy among Blacks.

Table 4.2 suggests that experienced discrimination in healthcare (healthcare discrimination) is an essential factor explaining COVID-19 vaccine hesitancy. Indeed, experienced discrimination is statistically significant at a 0.001 level and positively related to vaccine hesitancy in the full model, and statistically significant at a 0.01 level and positively related to COVID-19 vaccine hesitancy among African Americans and Latino communities. However, healthcare discrimination is not significant among Native Americans. This might be explained by the fact that healthcare access among Native Americans is managed by the Indian Health Service (IHS). In the health sector, Native Americans are less likely to interact with other races and thus face experienced discrimination (Sequist et al., 2011; Cunningham, 1993). Besides, Wang (2021) argues that Native American communities have been the most affected racial communities in the United States by the COVID-19 pandemic. The COVID-19 incidence rate among Native Americans is 3.5 times higher than in White communities (S. M. Hatcher et al., 2020). In addition, the high rate of COVID-19-related deaths among Natives Americans has been the highest among all races in the United States. As the pandemic was severe on Native Americans, vaccination against COVID-19 has been pretty high despite the low level of trust that Native Americans have in the federal government (Silberner, 2021).

Historical medical racism is another racial discrimination measure used in this paper to explain COVID-19 vaccine hesitancy, specifically among Blacks and Native Americans. Table 4.2 suggests that historical medical racism significantly explains COVID-19 vaccine hesitancy

among Black communities. The impact of historical medical racism is statistically significant at a 0.01 level and positively related to COVID-19 vaccine hesitancy among Blacks. This suggests that historically health-related unethical malpractices against African Americans have adversely affected trust between these communities and the health institutions (Dula, 1994; Brenick et al., 2017; Wells & Gowda, 2020). Practices such as the sale of talcum powder by Jonson & Jonson designed for Black women are examples of facts that have reinforced vaccine hesitancy among Black communities. The Tuskegee syphilis experiment on Black communities is another example of medical racism. Historical medical racism is also statistically significant at a 0.01 level and positively related to COVID-19 vaccine hesitancy among Native Americans. These findings confirm the third hypothesis of this research. Overall it appears that racial discrimination measures are significant in explaining COVID-19 vaccine hesitancy among Blacks, Latinos, and Native Americans.

Racial policy salience is another factor that helps explain health and political behaviors. Sanchez & Medeiros (2016), for example, find that specific policy-related questions are fundamental to racial identity. Aspects, for example, such as universal healthcare, are salient to Latinos. This paper tests the question of immigration-related perceptions and how it affects COVID-19 vaccine hesitancy among Latinos. Table 4.2 suggests that immigration-related perceptions are significant at the 0.05 level among Latinos and positively related to COVID-19 vaccine hesitancy. This confirms the third hypothesis that perceptions of immigration-related policy influence COVID-19 vaccine hesitancy among Latinos. The perception among Latinos that getting vaccinated will negatively affect their immigration status is an aspect to consider to improve COVID-19 vaccine acceptance among Latinos and immigrants.

Table 4.2: Logistic regression table: COVID-19 Vaccine hesitancy

	Full	**Blacks**	**Latinos**	**Natives**
Discrimination measures				
Perceived discrimination	0.14^{***}	0.37^{***}	0.10	0.17
	(0.03)	(0.11)	(0.08)	(0.11)
Healthcare discrimination	0.56^{***}	0.96^{**}	0.85^{**}	-0.48
	(0.14)	(0.30)	(0.28)	(0.31)
Aware of historical racism and impact		0.61^{**}		0.98^{***}
		(0.23)		(0.26)
Immigration perception effect				
Aware of the belief and impact			0.62^{*}	
			(0.28)	
Partisanship				
Democrats	0.03	0.03	0.08	0.15
	(0.08)	(0.19)	(0.17)	(0.23)
Republicans	0.50^{***}	0.36	0.82^{***}	0.97^{***}
	(0.09)	(0.34)	(0.25)	(0.26)
Media TV				
CNN	-0.05^{*}	-0.11^{*}	-0.14^{**}	-0.26^{***}
	(0.02)	(0.05)	(0.04)	(0.06)
Racial identity	-0.03	0.07	0.03	-0.00
	(0.03)	(0.10)	(0.08)	(0.11)
Race				
Latinos	-0.35^{***}			
	(0.10)			
Blacks	-0.40^{***}			
	(0.11)			
Asian Americans	-0.51^{**}			
	(0.16)			
Pacific Islander	-0.47			
	(0.44)			
Native Americans	-0.30			
	(0.32)			
Female	0.35^{***}	0.53^{**}	0.48^{**}	0.50^{*}
	(0.07)	(0.17)	(0.16)	(0.20)
Age	0.13^{***}	0.13^{*}	0.15^{*}	0.01
	(0.02)	(0.06)	(0.06)	(0.07)
Education	0.07^{*}	0.09	0.06	0.30^{***}
	(0.03)	(0.07)	(0.06)	(0.08)
Income	-0.05^{+}	-0.00	0.11	-0.03
	(0.03)	(0.07)	(0.06)	(0.08)
Employment	-0.14^{+}	0.03	-0.26	0.03
	(0.08)	(0.19)	(0.18)	(0.20)
No insurance	0.29^{**}	-0.04	-0.16	-0.03
	(0.10)	(0.25)	(0.22)	(0.27)
Preexisting condition	0.02	0.34	-0.01	0.48^{*}
	(0.08)	(0.21)	(0.19)	(0.22)
AIC	5107.39	851.81	975.98	705.45
BIC	5227.84	919.64	1045.42	771.67
Log Likelihood	-2533.69	-410.90	-472.99	-337.72
Deviance	5227.90	821.81	945.98	675.45
Num. obs.	3049	680	757	611

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$; $^{+}p < 0.08$

Figure 4.5 presents the predicted probabilities of perceived discrimination for the full and the African Americans models. As perceived discrimination increases, the predicted probabilities increase significantly. The intercept of the full model is 0.65, while that of the African American model is 0.38. The average magnitude of the effect for the full model is 3%[15] and for the African Americans model is 9%.[16] Figure 4.5 confirms that perceived discrimination is a significant stressor increasing COVID-19 vaccine hesitancy, especially among African Americans.

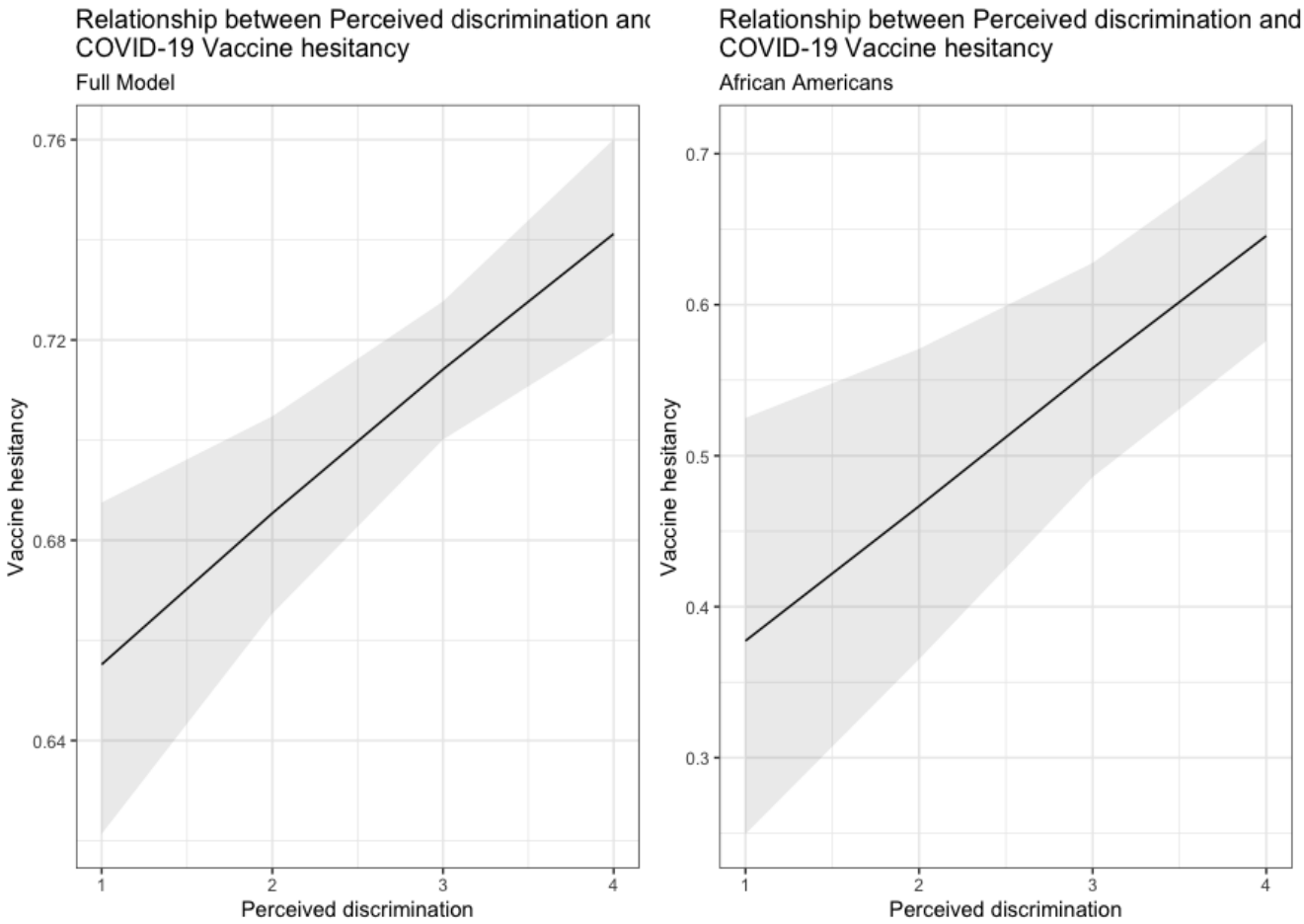

Figure 4.5: Predicted probabilities of Perceived discrimination: Vaccine hesitancy

[15]With $f(x) = \beta_0 + \beta_1 X1 + \beta_2 X2 + ... + \beta_n Xn$, the magnitude of the effect is computed by $\frac{d.f(x)}{d.x}$, with d= variation between the minimum and maximum. So in this case (0.74-0.65)/4-1

[16](0.65-0.38)/4-1

Figure 4.6 presents the predicted probabilities for experienced discrimination in health care. The slope of the full model is 0.7, while 0.55 for African Americans and 0.6 for Latinos. This suggests that by holding all the model variables at zero, the intercept for the full model is greater than that of Latinos and African Americans. Figure 4.6 demonstrates that experienced discrimination positively relates to COVID-19 vaccine hesitancy among Blacks and Latinos. Blacks and Latinos reporting racial discrimination in the health sector are less likely to get vaccinated against COVID-19 than those who did not face discrimination in the health sector.

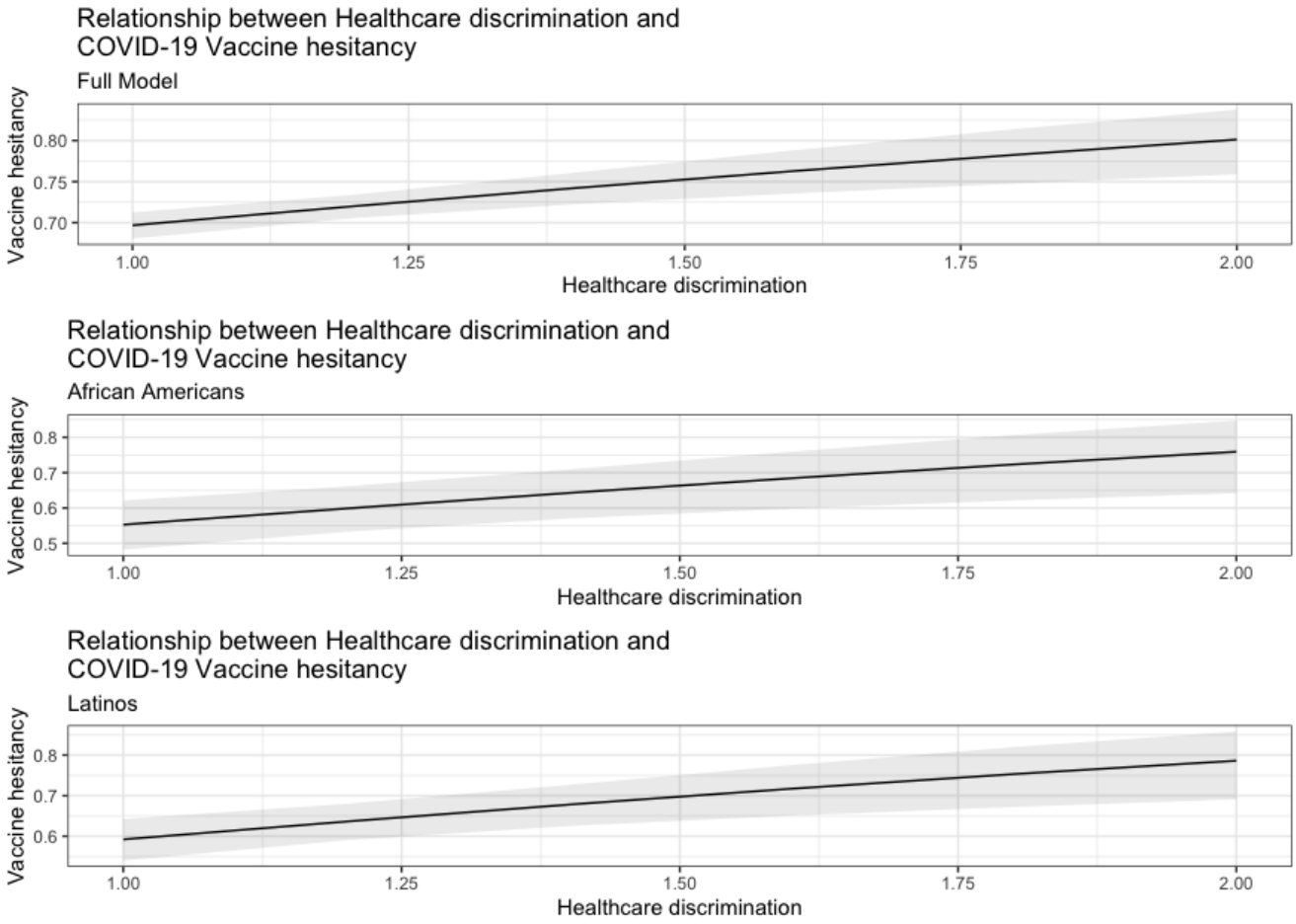

Figure 4.6: Predicted probabilities of Healthcare discrimination: Vaccine hesitancy

The importance of race in understanding health disparities in the United States is re-

inforced by existing mistrust between specific racial communities and political institutions. An analysis of the full model in Table 4.2 suggests that compared to the White communities, Latinos, African Americans, and Asian American communities are negatively related to COVID-19 vaccine hesitancy, at the 0.001 level for Latinos and African Americans and the 0.01 level for Asian Americans. These findings suggest that race as a biological construct is negatively related to COVID-19 vaccine hesitancy. Table 4.2 demonstrates that being Black or Latino is not an automatic positive connection to COVID-19 vaccine-hesitancy. Instead, vaccine hesitancy among those communities is caused by structural and political factors such as racial discrimination, historical trauma, and policy salience.

An analysis of the full model in Table 4.2 suggests that partisanship is a significant factor explaining COVID-19 vaccine hesitancy at the 0.001 level for Republicans. Compared to Independents and others, Republicans are more likely to be COVID-19 vaccine-hesitant. Bolsen & Palm (2021) observe that the politicization of the COVID-19 vaccination has hampered the effectiveness of COVID-19 mass vaccination in the United States. Results in Table 4.2 confirms Bolsen & Palm (2021)'s findings. An analysis of the effect of partisanship on matters of COVID-19 vaccine hesitancy among Blacks, Latinos, and Native Americans suggests that Republican partisanship is statistically significant at the 0.001 level for Latinos and Native Americans and positively related to COVID-19 vaccine hesitancy among the two groups. Fridman et al. (2021) argue that Republicans are more likely to be COVID-19 vaccine hesitancy than their counterpart Democrats and Independents. Overall mixed signals from the Republican party seem to have influenced COVID-19 vaccine hesitancy among Latinos and Native Americans.

Janz & Becker (1984) argue that structural factors such as socioeconomic status and psychological characteristics such as personality influence people's preferences and willingness to act appropriately regarding compliance with public health recommendations such as getting vaccinated. Alhalaseh et al. (2020) found that people who typically got vaccinated were more

likely to continue vaccinating than those who did not. Furthermore, beliefs and perceptions influence health behavior. C. J. Carpenter (2010) observed that the promotion of health services is essential because it helps improve quality of life and shapes people's beliefs and perceptions about public health services. Janz & Becker (1984) argue that understanding predictors influencing public health services acceptance in the population shapes policy. Applied to COVID-19 vaccine hesitancy, Zampetakis & Melas (2021) observed that perceptions about the severity of the pandemic are determinant factors influencing vaccine acceptance. This suggests that to increase the acceptance of the vaccine among the population, public health institutions need to be transparent about the dangerousness of COVID-19 to human health. Perceived susceptibility to health issues influences people to get protected against diseases and follow health guidelines, minimizing their likelihood of getting sick (Rosenstock, 1974a,b; Glanz et al., 2008). Television channels such as CNN have promoted public health guidance such as mask-wearing and the COVID-19 vaccine. Table 4.2 suggests that getting news from CNN is negatively related to the COVID-19 vaccine hesitancy at 0.05 level for the Full model and the African American model. News consumption from CNN is negatively related to COVID-19 vaccine hesitancy at a 0.01 level among Latinos and Native Americans. This result confirms Ruiz & Bell (2021) finding that news consumption from CNN is positively related to COVID-19 vaccine acceptance.

There are some variations by demographic; table 4.2 suggests that compared to men, women are more likely to be vaccine-hesitant, and this is at 0.001 level in the full model, at a 0.01 level for African Americans and Latinos, and 0.05 level for Native Americans. This finding concurs with that of Latkin et al. (2021), who find that women are less likely to get vaccinated against COVID-19 than men, especially among Black and Latino communities. Age is also positively related to vaccine hesitancy in the full model at 0.001 level and among Black and Latinos at 0.05 level. Other factors, such as having health insurance, help explain COVID-19 vaccine hesitancy; table 4.2 suggests that individuals without health insurance

are more likely to be vaccine hesitant than individuals with health insurance.

4.5 Conclusion

Like the other chapters in this research, this chapter addresses the interconnection between public health and political attitudes. Specifically, this chapter addresses the question of health attitudes as an output of the political system. The chapter evaluates how COVID-19 vaccine hesitancy is a product of structural racial-related factors. Specifically, discrimination (measured through experienced discrimination, perceived discrimination, and historical medical racism) helps explain COVID-19 vaccine hesitancy. The chapter also evaluates how the perception of immigration policies among immigrants and Latino communities influences COVID-19 vaccine hesitancy. Racial discrimination is the significant predictor affecting COVID-19 vaccine hesitancy, specifically in Black and Latino communities. While all discrimination measures are significant and positively related to the COVID-19 vaccine among Blacks, experienced discrimination in the healthcare system is the main deterrent to Latino vaccine acceptance. Regarding, Native American communities, historical medical racism is the primary variable explaining COVID-19 vaccine hesitancy. Overall, mistrust caused by racial discrimination is at the core of health disparities and COVID-19 vaccine hesitancy among Black, Latino, and Native American communities. This chapter demonstrates that historical trauma among Blacks and Native Americans in the United States significantly predicts vaccine hesitancy among those communities. Limiting racial discrimination will undoubtedly help improve acceptance of the COVID-19 vaccine. Addressing racial discrimination and historical trauma will help fix the structural root cause of health disparities and health services acceptance among communities of color in the United States. Furthermore, power-sharing is a determinant factor that will help improve COVID-19 vaccine acceptance among communities of color in the United States.

Additionally, this paper shows that racial-policy salience, such as immigration policy for Latinos, is a significant predictor of COVID-19 vaccine hesitancy among this group. Indeed, the perception that vaccinating against COVID-19 would negatively affect immigration status is a factor to consider in understanding COVID-19 vaccine hesitancy among Latinos. Therefore, implementing a vaccination strategy that removes immigration related-concern will help increase vaccine acceptance among Latinos and immigrants overall.

This paper demonstrates that mistrust between racial communities and governmental institutions in the United States explains COVID-19 vaccine hesitancy. Therefore, addressing the root cause of mistrust, such as racial discrimination (perceived and experienced discrimination), historical trauma (medical racism), and race-salient policy areas constitute vital areas that will help improve COVID-19 vaccine acceptance among communities of color in the United States.

4.6 Future research

Research in race and health politics highlight health disparities as an outcome of structural racism. This research addresses the issue of vaccine hesitancy in a similar approach by arguing that vaccine hesitancy is the construct of racial inequities. More research on health-related political mobilization and its connection to racial politics will help improve our understanding of how racializing social facts explains health attitudes and behaviors among communities of color in the United States.

Chapter 5

General conclusion

This chapter presents the goals, the main findings, and the significant contributions of this research. This chapter will also address the major limitations of this dissertation and opportunities for further research. First, this dissertation aims to highlight the interconnection between public health and political attitudes/behaviors in a well-known polarized context such as the United States (J. Pacheco et al., 2020; Iyengar et al., 2019; Alichi et al., 2016; Westfall et al., 2015; Clark, 2009) during a major focus event such as the COVID-19 pandemic. Using the system theory as delineated by Easton (1965), this dissertation evaluates how cues and information from the political system influence health attitudes and behaviors that spark new demands from the social environment expressed as political attitudes and behaviors. Specifically, this dissertation evaluates how health-related attitudes and behaviors during the COVID-19 pandemic have influenced vote choice during the 2020 US presidential election and how political factors are significant predictors of health behaviors (such as COVID-19 vaccine acceptance/uptake). Finally, this dissertation evaluates whether race-related factors such as racial discrimination, historical medical racism, and race-salient policies help explain public health attitudes such as COVID-19 vaccine hesitancy.

5.1 Overall Findings

Easton (1965) envisioned the political system as a black box where demands from constituents (social environment) get processed in the political system and affect the power dynamics in the decision centers. As a result, the decision centers produce outputs that either maintain the state of nature (status quo) or provoke changes that will solve the original demands or spark new ones. To analyze how health-related questions affected the power dynamic of the political system, Chapter II of this dissertation addresses the impact that public health attitudes and behaviors have had on vote choice during the 2020 US presidential election. The chapter uses the African American COVID-19 vaccine Polls (AACVP) and the Collaborative Multiracial Post-election Survey (CMPS) to explore whether health-related attitudes and behaviors explain vote choice during the 2020 US presidential election. Specifically, the chapter evaluates whether Trust in federal health institutions, support for Medicare for all, and public health compliance (mask-wearing) are significant predictors of vote choice. The first hypothesis states that public health compliance negatively affects voting for Trump. Conversely, public health compliance is positively related to voting for Biden. The variable public health compliance measures individuals' willingness to restrain their liberties to the benefit of the collectivity by following public health guidance and mandates such as social distancing, mask-wearing, and self-quarantine in case of exposure. This variable is hypothesized to be negatively related to voting for Trump since President Trump often negated guidance from the Centers for Disease Control and Prevention (CDC) in public statements or by failing to wear masks at public events. The result section from the chapter confirmed the hypothesis. Besides, the effect and the relationship remain the same when disaggregating the data by race and partisanship. The results appear to corroborate Hamilton & Safford (2021)'s observation that the overt discrepancy between Trump and health institutions such as the CDC has influenced a feeling of mistrust in science among

a significant part of the population. This result suggests that people who are more likely to follow COVID-19-related public health guidance such as mask-wearing, social distancing, self-quarantine, and others are more likely to vote for Biden and less likely to vote for Trump. The first hypothesis of this research is therefore confirmed.

The second hypothesis of the second chapter is that Trust in federal health institutions is negatively related to voting for Trump. Trust in federal health institutions measures individuals' attachment to public health institutions such as the Center for Disease Control and Prevention (CDC), the Food and Drugs Administration (FDA), and renowned scientists holding high administrative positions in the health sector, such as Dr. Anthony Facuci. The factor variable is hypothesized to be negatively related to voting for Trump and positively related to voting for Biden, as both candidates presented different approaches to managing the pandemic. While Trump was pro-State, Biden was pro-federal government to manage the pandemic. The chapter shows that public Trust in federal health institutions is negatively related to voting for Trump and positively related to voting for Biden among both datasets, even after disaggregating the data by race and partisanship.

The last hypothesis evaluated in Chapter II is the relationship between health policy preferences such as Medicare for all and vote choice during the 2020 US presidential election. Health policy preference, such as Medicare for all, is a direct measure of health attitudes. Support for Medicare for all is hypothesized to be positively related to voting for Biden while negatively related to voting for Trump. The research confirms the hypothesis. As Trump, in many instances, intend to repeal the Affordable Care Act (ACA) to give power back to the market, Biden, on the other hand, expressed his desire to expand the ACA, making it closer to a form of Medicare for all.

The third chapter of this dissertation addresses the political determinants of COVID-19 vaccine uptake in the United States. The chapter evaluates whether political attitudes such as Trust in local members of Congress and partisanship influence COVID-19 vaccine

uptake. Besides, the chapter also evaluates whether policy factors such as access to healthcare and health insurance influence COVID-19 vaccine uptake. The research hypothesizes that compared to Democrats and Independents, people identifying themselves as Republicans are less likely to get vaccinated against COVID-19. The opposition in many instances of Republican leadership to mandate and institutional guidance such as social distancing and mask-wearing have created mixed signals to the electorate that could explain lower COVID-19 vaccine acceptance among Republicans. The chapter demonstrates that identifying as a Republican mainly affects COVID-19 vaccine uptake. Omer et al. (2021) find a significant gap in COVID-19 vaccine acceptance between Democrats and Republicans, with Democrats reporting more COVID-19 vaccination rate than Republicans. This chapter corroborates that finding. Both the CMPS and the AACVP give the same results. Democrats are more likely to vaccinate against COVID-19 than Independents, and people identifying as Republicans are less likely to vaccinate against COVID-19.

Trust in local members of Congress is the other political variable used to explain vaccine uptake. As many Congressional members have publicly shared their stance on COVID-19 vaccine acceptance, I hypothesized that Trust in local members of Congress is positively related to COVID-9 vaccine uptake. Results in chapter III confirm that Trust in local members of Congress is positively related to vaccine uptake. While partisanship captures long-term attachment between individuals and a political party, Trust in local members of Congress expresses an individual's Trust toward his/her representative in Congress. Using the CMPS and AACVP data suggest that Trust in local members of Congress is statistically significant at a 0.001 level and positively related to COVID-19 vaccine uptake. This finding corroborates the second hypothesis of the chapter. Political Trust is at the core of most successful policy (Citrin, 1974; A. H. Miller, 1974; W. E. Miller, 1979). Therefore, political factors such as partisanship and political Trust (Trust in local members of Congress) determine COVID-19 vaccine uptake in the United States. Besides, among Republicans, Trust in local

members of Congress is positively related to COVID-19 vaccine uptake. The more people identifying as Republican Trust their local members of Congress, the more they are to get vaccinated against COVID-19. Regarding Democrats, Trust in local members of Congress is also positively related to COVID-19 vaccine uptake. In addition, the predicted probability intercept is higher for Democrats than Republicans, suggesting that in a total absence of Trust in local members of Congress, the magnitude of the effect of getting vaccinated is higher among Democrats than it does among Republicans, and this using both the CMPS and AACVP dataset. This paper shows that constituents' level of Trust in their representative influenced vaccine acceptance. The fact that most members of Congress have been vaccinated against COVID-19 has been influential in promoting vaccine acceptance in the population.

The second part of this paper addresses policy-related factors such as health care access and access to health insurance. Using both the CMPS and AACVP data, the chapter shows that health care access is statistically significant across all models and positively related to COVID-19 vaccine uptake. De Figueiredo et al. (2020) argue that barriers to health care services are detrimental to vaccine uptake. The more people have access to health care, the more they are likely to vaccinate against COVID-19. Finally, access to health insurance is a significant predictor of COVID-19. Individuals with no insurance are less likely to vaccinate against COVID-19 than those with health insurance. Both political factors (partisanship, Trust in local members of Congress) and policy factors (health care access, access to health insurance) are strong predictors of COVID-19 vaccine uptake. Research on access to health such as those of Hoffman & Paradise (2008), and E. R. Brown et al. (2000) demonstrate that factors such as poverty and lack of insurance are detrimental to access to health. Health coverage is a significant factor in improving access to health care and the acceptance of health services.

The last chapter of this dissertation addresses health attitudes due to race-related fac-

tors. The chapter hypothesizes that factors such as racial discrimination, historical medical racism, and race-policy salience, such as immigration-related policies for Latinos, are significant predictors explaining COVID-19 vaccine hesitancy among communities of color. The research suggests that racial discrimination is positively related to vaccine hesitancy, especially among Black and Latino communities. The more people face race-based discrimination, the more likely they will be COVID-19 vaccine hesitancy. Specifically, the chapter suggests that perceived and experienced discrimination are significant predictors of COVID-19 vaccine hesitancy. Perceived discrimination is statistically significant and positively related to COVID-19 vaccine hesitancy among Blacks. Perceived discrimination causes mistrust between African Americans communities and public institutions. Historical factors such as racial hierarchy and categorizing African Americans as second-class citizens can help explain why perceived discrimination is an instrumental measure influencing health attitudes and behaviors among African American communities. Assari et al. (2018), and Seaton et al. (2008) find that perceived discrimination has a detrimental effect on health attitudes and behaviors among Blacks. Stresses stimulated by perceived discrimination are associated with counterproductive health decisions in Black communities. These observations are corroborated in this research. Perceived discrimination explains counterproductive health attitudes such as COVID-19 vaccine hesitancy among Blacks.

Experienced discrimination in healthcare (healthcare discrimination) is also an essential factor explaining COVID-19 vaccine hesitancy. Experienced discrimination is positively related to vaccine hesitancy among African Americans and Latino communities. However, healthcare discrimination is not significant among Native Americans. This might be explained by the fact that healthcare access among Native Americans is managed by the Indian Health Service (IHS). In the health sector, Native Americans are less likely to interact with other races and thus face experienced discrimination (Sequist et al., 2011; Cunningham, 1993). Besides, Wang (2021) argues that Native American communities have been the

most affected racial communities in the United States by the COVID-19 pandemic. The COVID-19 incidence rate among Native Americans is 3.5 times higher than in White communities (S. M. Hatcher et al., 2020). In addition, the high rate of COVID-19-related deaths among Natives Americans has been the highest among all races in the United States. As the pandemic was severe on Native Americans, vaccination against COVID-19 has been pretty high despite the low level of Trust that Native Americans have in the federal government (Silberner, 2021).

Historical medical racism is another racial discrimination measure used in this paper to explain COVID-19 vaccine hesitancy, specifically among Blacks and Native Americans. Chapter four suggests that historical medical racism significantly explains COVID-19 vaccine hesitancy among Black communities. The impact of historical medical racism is positively related to COVID-19 vaccine hesitancy among Blacks. This confirms that historically health-related unethical malpractices against African Americans have adversely affected Trust between these communities and the health institutions (Dula, 1994; Brenick et al., 2017; Wells & Gowda, 2020). Practices such as the sale of talcum powder by Jonson & Jonson designed for Black women are examples of facts that have reinforced vaccine hesitancy among Black communities. The Tuskegee syphilis experiment on Black communities is another example of medical racism. In addition, historical medical racism is positively related to COVID-19 vaccine hesitancy among Native Americans. Overall, racial discrimination measures are significant in explaining COVID-19 vaccine hesitancy among Blacks, Latinos, and Native Americans.

Racial policy salience is another factor that helps explain health and political behaviors. Sanchez & Medeiros (2016), for example, find that specific policy-related questions are fundamental to racial identity. Aspects, for example, such as universal healthcare, are salient to Latinos. This paper tests the question of immigration-related perceptions and how it affects COVID-19 vaccine hesitancy among Latinos. Chapter four suggests that immigration-related

perceptions are positively related to COVID-19 vaccine hesitancy. The perception among Latinos that getting vaccinated will negatively affect their immigration status is an aspect to consider to improve COVID-19 vaccine acceptance among Latinos and immigrants.

5.2 Major contributions

This dissertation demonstrates the interconnection between public health and political behaviors in the United States by showing that health attitudes and behaviors can be used as predictors to explain political behaviors. Specifically, health behaviors such as public health compliance, health attitudes such as Trust in federal health institutions, and support for Medicare for all are significant predictors of vote choice during the 2020 US presidential election. In addition, this research shows that health-related issues can alter the power dynamics within the political system.

While health-related attitudes and behaviors help explain political behaviors such as vote choice, this research also shows that political attitudes and behaviors influence health behaviors. The dissertation demonstrates that Trust in local members of Congress, partisanship, and access to healthcare are significant predictors of COVID-19 vaccine uptake. Understanding how politics influence health behaviors can help increase health services acceptance in the general population. Additionally, race-related factors such as racial discrimination, historical medical racism, and racial-policy salience are significant factors explaining health attitudes such as COVID-19 vaccine hesitancy. Compared to the White communities, Latinos, African Americans, and Asian American communities are more likely to vaccinate against COVID-19. These findings suggest that race as a biological construct is negatively related to COVID-19 vaccine hesitancy. Furthermore, the research shows that being Black or Latino is not an automatic positive connection to COVID-19 vaccine-hesitancy. Vaccine hesitancy among those communities is caused by structural and political factors such as racial discrimination,

historical trauma, and policy salience. This paper demonstrates that racial concepts are fundamental to health policy and politics.

5.3 Limitations of the research

The significant limitations of this research are methodological. First, the AACVP sample used is not restricted to registered voters, suggesting that inferences intending to explain the 2020 US presidential election may not be accurate as inferences coming from a probability sample of registered voters. Secondly, a critical measurement that would have helped understand the impact of policy on vaccine uptake is COVID-19 mandates. AACVP interviews were conducted between May 7, 2021, and July 7, 2021. The CMPS interviews were implemented between April 2, 2021, to August 25, 2021. States started to implement the COVID-19 vaccine mandate in early July 2021. Because the survey time and state mandate are tightened, using a control variable for mandate by coding 1 for states applying the mandate and 0 would not reflect the reality as respondents may not have been aware of those mandates during the interviews. Using mask mandate as a proxy did not give conclusive findings.

5.4 Recommendation and future research

Having post mandate surveys to evaluate the impact of policy on COVID-19 vaccine uptake and vaccine hesitancy will improve our understanding of the impact of policy on health attitudes and behaviors. Besides, using large probability samples based on registered voters will help measure how health-related phenomena explain changes in the power dynamics of the political system. Finally, although the spatial-temporal frame of this research help evaluates the interconnection between health and political attitudes/behaviors, more research

during non-focus events such as a pandemic will improve our understanding on long term relationship between health and political attitudes/behaviors.

Appendix

2021 NATIONAL VACCINE MESSAGING POLL:

African American Research Collaborative Team

2021 NATIONAL VACCINE MESSAGING POLL

(Field Dates April 30 – May 21, 2021; N=13,500)

SCREENS

[PHONE] Hello, may I please speak with Mr./ Ms. [NAME]? [ALLOW ANY ADULT]

Thank you. My name is _____. This is not a sales call. I am calling on behalf of the Commonwealth Fund, a philanthropic foundation committed to health care equity. We are conducting a very short survey about issues important to your community and we'd like to include your opinions in our research. We appreciate your help.

[ONLINE] Thank you for participating in this survey. All of your answers are completely confidential and anonymous. Please answer every question as truthfully as possible. This is not a race! Take your time to read each question and provide your honest opinion. Thank you.

S1. langpref. Do you prefer the interview to be conducted in English, Spanish or another language?

Spanish.....1
English 2
Chinese (Mandarin) 3
Chinese (simplified)
Chinese (traditional)
Chinese (Cantonese) 4
Korean.....5
Vietnamese.....7

S2. Before we get started, to make sure we have a representative sample of people of all backgrounds, let's start with a few basic demographic questions. What racial or ethnic group best describes you?

Hispanic or Latino.....1
African American or Black.....2
Asian American 3
Pacific Islander.....4
Native American / American Indian 5
White, not-Hispanic 6
Something else/Other.....88 [TERM]
Refused .....99 [TERM]

RACE [NOTE TO PROGRAMMER: Based on S2, generate variable called RACE where:
Hispanic or Latino (anyone who checks this option).....1
African American or Black.....2
Asian American 3
Pacific Islander.....4
Native American or American Indian.....5
White (only those who ONLY check White) 6

[AAPI Defined as S2.r3 or S2.r4]

S3. In what state do you currently reside?

[DROP DOWN ALL STATES-QUOTA FOR NM] [CONTINUE]

S4. In which county do you currently live here in [INSERT STATE]?
[DROP DOWN ALL COUNTIES for STATE]

S5. Do you identify as:

Male/Man.....1
Female/Woman.....2
Non-binary.....3
None of these……. ……4

S6. [IF S2 =1] There are different terms used to describe people of Latin American descent living in the United States, such as 'Hispanic', 'Latino', and 'Latinx'. Which do you prefer?

Hispanic [Use Hispanic rest of survey] 1
Latino or Latina [Use Latino rest of survey] 2
Latinx [Use Latinx rest of survey].....3
Doesn't matter [Use Hispanic rest of survey].....4
Something else [Use Hispanic rest of survey].....5

S6B. [IF S2 = 2] People within the community use different terms to identify themselves. Do you prefer to use the term Black or African American to identify yourself?

Black [Use Black rest of survey] 1
African American [Use African American rest of survey]....2
Either (Use Black rest of the survey) 3

IF S1=3, 4, 5, 7 (AAPI LANGUAGES) PLEASE SUPPRESS R5 AS IT WAS ADDED AFTER WE SENT TEXT FOR TRANSLATIONS.

S6N. [IF S2 = 5] People within the community use different terms to identify themselves. Do you prefer to use the term American Indian, Indigenous or Native American? [SHOW LIST IN ORDER DISPLAYED BELOW]

Native American [Use Native American rest of survey].....1
Native [Use Native rest of survey].....5
American Indian [Use American Indian rest of survey].....2
Indigenous [Use Indigenous rest of survey] ……..3
Either [Use Native American rest of survey].....4

S7L. [If S2=1] [INSERT S6L] have their roots in many different parts of Latin America. To what country or place in Latin America do you or your family trace your ancestry?

Argentina.....1 [South American quota]
Bolivia.....2 [South American quota]
Chile.....3 [South American quota]
Colombia.....4 [South American quota]
Costa Rica.....5 [Central American quota]
Cuba.....6 [Cuban quota]
Dominican Republic.....7 [Dominican quota]
Ecuador.....8 [South American quota]
El Salvador.....9 [Central American quota]
Guatemala.....10 [Central American quota]
Honduras.....11 [Central American quota]
Mexico.....12 [Mexican quota]
Nicaragua.....13 [Central American quota]
Panama.....14 [Central American quota]
Paraguay.....15 [South American quota]
Peru.....16 [South American quota]
Puerto Rico.....17 [Puerto Rican quota]
Uruguay.....18 [South American quota]
Venezuela.....19 [South American quota]
Spain.....20 [Other – if no to S7L2]
Other country.....21 [Other – if no to S7L2]
None.....22 [Other – if no to S7L2]
Don't know.....88 [Other – if no to S7L2]
Refuse.....99 [Other – if no to S7L2]

S7L2. [IF S7L=20,21,22,88,99] Do you consider any part of your family ancestry to be of Mexican, or Mexican-American descent?

Yes.....1
No.....2
Don't know.....88
Refused.....99

S7B. [IF S2=2] Some [INSERT S6B] people are part of immigrant communities that are newer to America while others have roots in America for generations going back to slavery. Some families have a bit of both. How about you? Do you identify at least in part with any Black immigrant community, and if so, from what country, or like a majority of [S6B] do you have roots in America for many generations? [Programmer: allow multiple]

Roots in America for many generations 1
Nigeria.....2
Ethiopia.....3
Egypt.....4
Ghana 5
Kenya.....6
Liberia.....7
Somalia 8
Other country in Africa.....9
Jamaica.....10
Haiti.....11
Trinidad and Tobago.....12
Barbados 13
Dominican Republic 14
Puerto Rico.....15
Other country in Caribbean.....16
Guyana 17
Brazil.....18
Other country in Latin America.....19
Other country: SPECIFY 20
Do not have roots in a Black immigrant community.....21
Don't know 88
Refused 99

S7A. [IF S2=3 OR 4] Asian Americans and Pacific Islanders have their roots in many different countries and ethnicities in Asia and the Pacific. What do you consider your primary country of origin or Asian ethnic group?

Chinese, except Taiwanese 1
Taiwanese 2
Asian Indian.....3
Filipino.....4
Vietnamese.....5
Korean.....6
Pakistani.....7
Hmong.....8
Cambodian 9
Lao 10
Native Hawaiian.....11
Pacific Islander [Samoa, Guam, Tonga] 12

Japanese 13
Other [SPECIFY].....14
Don't know 88

S7P. [IF S2=4 or S7A=11,12] Pacific Islanders have their roots in many different territories and places. What do you consider your primary Pacific Islander origin?

Native Hawaiian.....1
Guamanian/Chamarro 2
Samoan.....3
Tongan 4
Other Pacific Islander [SPECIFY].....5
Don't know 88

S7NB. [IF S2=5] How would you BEST describe your [S7N] ancestry? Would you say you have at least one distant relative who was [S7N], that an immediate relative like a parent or grandparent was [S7N], or do you consider yourself [S7N]?

Distant relative 1
Grandparent / parent relative .....2 [CONTINUE]
Me .....3 [CONTINUE]
Don't know .....88 [TERM]

S7N. [IF S2=5] [INSERT S6N] have their roots in many different tribes, nations and ethnicities in the Americas. What do you consider your primary [INSERT S6N] affiliation or tribe?
[Let's watch closely, do not need to screen out Cherokee but do not want large numbers here]

Navajo 1
Cherokee 2
Sioux 3
Chippewa or Ojibwe 4
Choctaw 5
Apache 6
Pueblo 7
Iroquois 8
Creek 9
Blackfeet 10
Alaska Native.....11
Latin American Indian 12
Other [SPECIFY].....13
Don't know 88
Refused 99

[Programmer: Add a quota for this question and set cap for r2 at N=200. All others should be set to inf.]

7ZN_NM [IF S2=5 [INSERT S6N – If New Mexico Resident] [Native American/American Indian] have their roots in many different tribes, nations and national origins in the Americas. What do you consider your primary ethnic group?

Taos Pueblo.....1
Picuris Pueblo 2
Ohkay Owingeh 3
Santa Clara Pueblo.....4
Jicarilla Apache Nation.....5
San Ildefonso Pueblo 6
Nambe Pueblo.....7
Pojoaque Pueblo.....8
Tesuque Pueblo.....9
Cochiti Pueblo.....10
Santo Domingo Pueblo 11
San Felipe Pueblo 12
Santa Ana Pueblo.....13
Sandia Pueblo.....14
Zia Pueblo 15
Jemez Pueblo 16
Isleta Pueblo.....17
Acoma Pueblo.....18
Laguna Pueblo 19
Zuni Pueblo.....20
Mescalero Apache Tribe 21
Ft. Sill Apache Tribe.....22
Dine/Navajo Nation 23
Cherokee Nation 24
Alaskan Native 25
Other 26
Don't know 88

[Programmer: Add a quota for this question and set cap for r24 at 20% of NA sample in NM. All others should be set to inf.]

S8. In what year were you born? _____

For quotas/weights, recode to:
Age 18 to 29.....2
Age 30 to 39.....3
Age 40 to 49 4
Age 50 to 59.....5
Age 60 to 69.....6
Age 70 and above.....7
Refuse 99

[Randomize, PUSH A REMINDER ON FIRST FAIL AND THEN TERMINATE ON SECOND FAIL. See bsp21002 for example of error code.]

QR1: Last year, Americans ate over 1.6 billion gallons of ice cream, and everyone seems to have a different favorite. Regardless of what your favorite flavor is, read this question carefully, and from the answers below, click on Strawberry.

Vanilla……1
Chocolate 2
Strawberry.....3
Mint Chocolate Chip.....4
Cookie Dough 5

S9. Where were you born? [ask all]

United States (the 50 states and Washington DC).....1
Island of Puerto Rico 2
US Virgin Islands.....3
American Samoa, Guam or other US territory 4
Another country 5

S10. What is the highest level of education you completed?

Grades 1 to 11 1
High School graduate or GED 2
Some college, but did not graduate.....3
Associate or other 2-year degree.....4
4-year degree / Bachelors degree.....5
Post-graduate degree.....6

S11. What is your zip code? __ __ __ __ __

S12. When you think about the community that you live in, which comes closest to how you would describe it?

Large city or urban area 1
Suburb near large city 2
Small town or small city 3
Suburb near small town or city 4
Rural area.....5

REFID [NOTE TO PROGRAMMER: Based on S6L, S6B, S6N, S2, generate variable called REFID where:

1 = IF S6L = 1, 4, or 5 = Hispanic
2 = IF S6L = 2 = Latino
3 = IF S6L = 3 = Latinx
4 = IF S6B = 1 or 3 = Black
5 = IF S6B = 2 = African American
6 = IF S6N = 1 or 3 or 5 = Native American
7 = IF S6N = 2 = American Indian
8 = IF S2 = 3 = Asian American
9 = IF S2 = 4 = Pacific Islander
9 = IF S2 = 6 = White

S13. Are you the parent or primary caregiver of a child who is 18 years of age or younger?

Yes, one child living in my home 1
Yes, more than one child living in my home of this age group 2
I am the parent of a child or children under age 18 but they do not live with me 3
No children/not parent or guardian 4

S14. [If S13=1,2,3] What is the age of your child or children 18 years of age or younger?

[IF S13=1, allow only one response, otherwise allow multiple]

0 to 4 years old 1
5 to 11 years old 2
12 to 15 years old 3
16 to 17 years old 4
18 years old 5

S15. [If S13=1,2,3] What is your relationship to your child/children living in your home?

Mother (Birth, Step, Adoptive) 1
Father (Birth, Step, Adoptive) 2
Grandparent 3
Other 4

S16. Do you help take care of a parent or grandparent who either lives with you at your home or whom you visit regularly?

Yes, I take care of one parent/grandparent 1
Yes, I take care of more than one parent/grandparent 2
No, I do not take care of any parents or grandparents 3

S17. Are you currently enrolled as a student at a two or four-year college or a university?

Yes 1
No 2
Don't know 88
Refused 99

S18. Generally speaking, do you consider yourself to be…

Definitely consider myself a Democrat 1
Lean more towards a Democrat 2
Independent, neither of the two major parties 3
Lean more towards a Republican 4
Definitely consider myself a Republican 5
Other political party 6

MAIN QUESTIONNAIRE

YOUR MEDICAL/COVID-19/VACCINE EXPERIENCE

1. Generally speaking, in a typical year...

I always get the flu shot every year 1
I get the flu shot some years, but not always 2
I usually do not get the flu shot.....3
I never get the flu shot 4

2. Do you plan to get the flu vaccine this year?

Yes.....1
No 2
Unsure/Don't know 88

3. How about the COVID-19-19 vaccine, have you…

I have received both first and second dose of a two dose COVID-19 vaccine 1
I have received only first dose of two dose COVID-19 vaccine.....2
I have received one dose of the COVID-19 vaccine that only requires one dose 3
I have **NOT** had any COVID-19-19 vaccine 4

4. [IF Q3=4] Which is closest to your plan regarding the COVID-19-19 vaccine? [check all that apply]

1…….I plan to get the vaccine as soon as I can. [=not hesitant]
2…….I have already scheduled an appointment to get the vaccine. [=not hesitant]
3…….I plan to get the vaccine, but I am not in a hurry to do so. [=some hesitant]
4…….I want to wait some time before getting the vaccine or deciding whether to get the vaccine. [=some hesitant]
5…….I do not know when I will get the vaccine. [=very hesitant]
6…….I will not get the vaccine. [=very hesitant]
7…….I do not believe I am eligible for the vaccine [=some hesitant]
8…….Unsure/Don't Know [=very hesitant]

HESITANT [Programmer create variable based on Q3/Q4:
1=VAXXED (Q3=1,2,3) 2=NOT; 3=SOME; 4=VERY

5. [If Q3=4] Regardless of how you answered above, do you have any hesitancy or concerns about getting the COVID-19-19 vaccine?

Yes, I have some hesitancy or concerns 1
No, I do not have any hesitancy or concerns 2

CONCERNS [Programmer create variable if Q4=3-8 OR Q5=1]

How strongly do you agree or disagree with the following statements about COVID-19-19 vaccines? [Rotate questions 6-7]

6. Your family or close friends believe COVID-19-19 vaccines are safe and effective.

Strongly agree 1
Somewhat agree 2
Neither agree nor disagree 3
Somewhat disagree 4
Strongly disagree 5
Don't know 88

7. A COVID-19-19 vaccine is safe and effective if it is approved and recommended by the federal Food and Drug Administration (FDA) and Centers for Disease Control and Prevention (CDC).

Strongly agree 1
Somewhat agree 2
Neither agree nor disagree 3
Somewhat disagree 4
Strongly disagree 5
Don't know 88

8. How often have you had arguments or disagreements with your family or close friends about whether someone should get the COVID-19-19 vaccine?

Often 1
Sometimes 2
Rarely 3
Never 4
Don't know 88

9. How safe do you think a COVID-19-19 vaccine will be for you? [ROTATE 1 to 4 top to bottom: 1, 2, 3, 4 AND 4, 3, 2, 1]

Not at all safe 1
A little safe 2
Mostly safe 3
Very safe 4
Don't know 88
Refused 99

10. [INSERT RACIAL GROUP BASED ON RACE] people are less likely to have access to health insurance or quality health care. This makes the consequences of getting sick with COVID-19-19 more severe.

Strongly agree 1
Somewhat agree 2
Neither agree nor disagree 3
Somewhat disagree 4
Strongly disagree 5
Don't know 88
Refused 99

11. People who live in locations like where I live struggle with many health inequalities and lack access to advanced medical care. This makes the consequences of getting sick with COVID-19-19 more severe.

Strongly agree 1
Somewhat agree 2
Neither agree nor disagree 3
Somewhat disagree 4
Strongly disagree 5
Don't know 88
Refused 99

12. Think about your past experiences with the medical profession. Do you believe that you or anyone living in your household has had any of the following happen because of their race, ethnicity, or language? [Make each a Yes/No item]

a. Not been offered the best available treatment
b. Not been referred to see specialists
c. Been denied the opportunity to speak with a physician
d. Been denied or delayed access to any needed healthcare services
e. Not able to access medical care in preferred language

13. Over the next month, do you plan to follow, or not follow these practices: [GRID]

a. Stay home if you feel sick
b. Seek medical attention if you have symptoms of COVID-19
c. Wear a mask when indoors in a public place around other people
d. Avoid crowded locations and mass gatherings
e. Wash your hands regularly, with soap, for at least 20 seconds
f. Stay at least six feet away from other people when you are in public settings

Definitely will do this 1
I might do this, just depends 2
No, I will not do this 3

14. Have you, a family member, or friend contracted COVID-19? [MARK ALL THAT APPLY]

I had COVID-19 1
Someone in my household had COVID-19 2
Family outside my household had COVID-19 3
Someone else I know had COVID-19 4
NO - No one I know has had COVID-19 5

15. [Ask if Q14= 1] Which of the following best fits your situation?

I tested positive on a COVID-19 test and had symptoms.....1
I tested positive on a COVID-19 test and did not have symptoms.....2
I tested negative on a COVID-19 test but had COVID-19 symptoms.....3
I never took a COVID-19 test but had COVID-19 symptoms.....4

16. [IF Q14=1] Did you receive any medical care to deal with COVID-19?

I did not seek or need medical care 1
I received medical care but was not hospitalized 2
I had to be hospitalized 3

17. [IF Q14 =2-4] As far as you know, did the person you know who had COVID-19 receive any medical care?

They did not seek out or need medical care 1
They received medical care but were not hospitalized 2
They had to be hospitalized 3

18. Do you know someone who has died because of COVID-19? [Allow multiple]

Yes, someone in my household 1
Yes, family outside of my household 2
Yes, someone else I know died.....3
No, nobody I know has died because of COVID-19 4

19. How concerned are you that you might get COVID-19?

Not at all concerned 1
A little concerned.....2
Moderately concerned.....3
Very concerned 4

20. Rate your opinion of the safety of each of the following brands of COVID-19 vaccines on a scale of 0 to 10, with 0 being not at all safe and 10 being totally safe.
    a. Moderna
    b. Pfizer
    c. Johnson and Johnson
    d. AstraZeneca

    [CAPTURE RESULT 0 to 10, Allow for Don't Know as option 11]

21. Some medical professionals think COVID-19 vaccines may need to be taken annually similar to the seasonal flu vaccine. Would you say…

I would definitely take an updated COVID-19 vaccine once per year 1
I might take an updated COVID-19 vaccine each year, it depends 2
I would NOT take an updated COVID-19 vaccine each year 3

22. Would you be willing to take a combination COVID-19-Flu vaccine as one shot every year to protect yourself from both COVID-19 and influenza?

Yes 1
No.....2
Don't know/unsure.....3

23. Which is closest to your opinion?

Biden winning the election **increased** my desire to get the vaccine 1
Biden winning the election **decreased** my desire to get the vaccine.....2
The election result did not have any impact on my desire to get the vaccine.....3

24. Please indicate whether any of the following circumstances apply to you or someone in your household because of the COVID-19 pandemic over the last year: [RANDOMIZE]

a. Lost job
b. Had work hours cut, or pay cut, but kept job
c. Had to temporarily or permanently close my business or my self-employment
d. Currently unemployed and looking for work
e. Lost health insurance

Yes 1
No.....2

25. [If Q24_e=Yes] Did children in your home lose their health insurance as well?

Yes 1
No.....2
Do not have children 3
Don't know 88

26. [NM Respondents Only] Over the last 2 weeks, how often have you been bothered by the following problems.

A. Feeling nervous, anxious or on edge?

B. Not being able to stop or control worrying?

C. Little interest or pleasure in doing things?

D. Feeling down, depressed, or hopeless?

Not at all.....1
Several days 2
More than half the days.....3
Nearly every day 4

ACCESS QUESTIONS FOR THE UNVACCINATED

27. [Ask if Q3 = 4] Do you know how to get a COVID-19 vaccine in your community?

Yes, I definitely know how to get the vaccine.....1
I have some information but not all I need to get the vaccine 2
No, I do not know how to get the vaccine 3
Don't know 88

28. [Ask if Q3 = 4 – SKIP IF New Mexico resident] Have you signed up to schedule a COVID-19 vaccine appointment?

Yes 1
No, I have attempted to sign up but have not been successful 2
No, I have not attempted to sign up 3
Don't know 88

29. [NM Version] [Ask if Q3 = 4] Have you signed up with New Mexico's Department of Health vaccine registration program to get registered for a COVID-19 vaccine?

Yes 1
No, I have attempted to sign up but have not been successful 2
No, I have not attempted to sign up 3
Don't know 88

30. [Ask if Q3=4] Would you be more likely to get a COVID-19 vaccine if it required only one dose instead of 2 doses a few weeks apart?

Yes 1
No.....2
Don't know 88

31. {current college student} [IF S17=1 OR AGE=18-20 AND IF Q3=4] Many colleges and universities are requiring that you take a COVID-19 vaccine to go to college starting in September. If your college or university requires the COVID-19 vaccine, will you take it?

Yes 1
No.....2
Don't know/Not applicable.....88

32. [Ask if Q3=4] Some employers are requesting that all employees receive a COVID-19 vaccine to continue employment. If your employer requests that you take the COVID-19 vaccine, will you take it?

Yes 1
No.....2
Don't know 88

33. [Ask if Q3 = 4] Many businesses across the country are offering small incentives to encourage people to get vaccinated, such as a free meal or a gift card to their business. Would getting a small incentive worth about [SPLIT: A=25 dollars / B=50 dollars / C=100 dollars / D=500 dollars] increase your desire to get a COVID-19 vaccine?

Yes..... 1
No 2
Don't know.....88

34. [Ask if Q3 = 4] Although many Americans have already been vaccinated, we are hearing that other people are facing challenges getting a COVID-19 vaccine. Have any of the following made getting a COVID-19 vaccine difficult for you? [Randomize list, allow multiple responses]

1. I cannot afford a COVID-19 vaccine and I am worried about the cost
2. I do not know how to get vaccinated
3. I am unemployed right now and only people with jobs can get vaccinated
4. My state uses an Internet sign-up and I don't know how to access the online portal
5. I need transportation to get a vaccine
6. I am busy and not able to go during the hours when vaccines are offered
7. I am not eligible to get vaccinated
8. It is difficult to find out how to make an appointment
9. I have a medical reason that makes me ineligible to get vaccinated (e.g., I have had a severe allergy to vaccines in the past/my doctor advised me not to get a vaccine)
10. I do not have health insurance and only people with insurance can get a vaccine
11. There is no information about signing up for the vaccine in my language
12. No, none of these apply to me

35. [Ask if Q3 = 4] If you have a choice, where would you prefer to get the COVID-19 vaccine?

[Check all that apply]

1. Large public vaccination site in my community
2. At my workplace or job location
3. My doctor's office
4. Clinic set up by my city, town or county health department
5. Community health clinic or health center
6. Convenient shopping area near me, like a grocery store
7. Hospital
8. Church or place of worship
9. Nearby college or university
10. Local community center or public park
11. Retail pharmacy or drug store (like Walgreens or CVS store)
12. Drive up clinic that would not require me to get out of my vehicle

13. Mobile van that comes to my community
14. At a clinic at my reservation or tribal center [NATIVE ONLY]
15. At an Urban Indian Health Care clinic [NATIVE ONLY]

36. [If Native American] If you have a choice, would you prefer to receive your vaccination through your state's department of health vaccination program or through the federal government's Indian Health Service (IHS)? [Rotate options]

State Department of Health 1
Federal Indian Health Service 2
No preference between the two 3
Don't know.....88

[Randomize, PUSH A REMINDER ON FIRST FAIL AND THEN TERMINATE ON SECOND FAIL. See bsp21002 for example of error code.]

QR2: What color is made when you mix white and black together?

Blue…… ……1
Grey.....2
Red.....3
Yellow……4
Green.....5

HESITANCY QUESTIONS FOR THE UNVACCINATED

37. [Ask if Q3 = 4] Have you heard any of the following statements about the COVID-19 vaccine and if so, what is your reaction?

a. New strands of the virus are emerging that will make the COVID-19 vaccines ineffective
b. COVID-19 vaccines can give you COVID-19 and make you sick
c. Private information must be shared with the government to sign up for a COVID-19 vaccine and they will use it to monitor us
d. [Asked of Latinos or anyone foreign born] Signing up for the COVID-19 vaccine could complicate your immigration status with the government
e. The COVID-19 vaccines were not tested thoroughly with [INSERT RACIAL GROUP] people
f. COVID-19 vaccines can cause unforeseen problems in children
g. People like me are not likely to get very sick or die from COVID-19
h. The COVID-19 vaccines may not be safe for pregnant women or women who may get pregnant
i. Taking a COVID-19 vaccine could change my cells, DNA, or genes
j. The COVID-19 vaccine is connected to a microchipping program to allow the government to track us

k. The Trump administration pushed COVID-19 vaccines to approval too quickly without proving their safety
l. The Biden administration is pushing out COVID-19 vaccines to the public too quickly without proving their safety
m. The Johnson and Johnson COVID-19 vaccine is dangerous and can create blood clots
n. [BLACK SAMPLE] Based on their history with talcum powder and other products, I do not trust Johnson and Johnson to make a safe COVID-19 vaccine
o. All the COVID-19 vaccines can create blood clots in those who take them
p. The COVID-19 vaccines are really intended to help pharmaceutical companies make a lot of money.
q. [INSERT RACIAL GROUP BASED ON RACE] people face discrimination from medical professionals which makes it hard to trust that the COVID-19 vaccines are safe and effective for me and others from my community.
r. The COVID-19 vaccines were developed using fetal cells
s. The severity of COVID-19 has been exaggerated by the Biden administration and the media who want everyone to get vaccinated for political reasons
t. [Ask of Black people] Because of the nation's unethical medical experiments on African Americans, including the infamous Tuskegee syphilis experiments, we cannot trust the COVID-19 vaccine to be safe for our community.
u. [Ask of Native Americans] Because of the nation's unethical medical research on Native Americans and exploitation of tribal communities by the federal government, we cannot trust the COVID-19 vaccine to be safe for our community.
v. The COVID-19 vaccines can cause irregular menstrual cycles and pain for women
w. The COVID-19 vaccine can cause infertility, meaning you cannot have children

No, I have not heard this 1
Yes I have heard this but it does not impact whether I will get a vaccine. 2
Yes, I have heard this and it makes me less likely to get a vaccine…….. 3

[SHOW Q39 HERE]

38. [Ask if Q3 = 4] Have you heard any of the following statements about the COVID-19 vaccine and if so, what is your reaction?

a. I do not need a COVID-19 vaccine because the whole thing has been blown out of proportion from the beginning due to politics.
b. It is my right to choose to NOT take the COVID-19 vaccine, if I decide it is not the best thing for me or my family.
c. At this point I do not need to get vaccinated; I already feel safe to return to my normal lifestyle.
d. Because it looks like the number of people getting very sick or dying from COVID-19 is going down, I do not feel the need to get vaccinated.
e. Being exposed to COVID-19 naturally is safer than receiving a COVID-19 vaccine.

f. [RACIAL GROUP BASED ON RACE] have experienced racism or discrimination in the healthcare system.
g. [Ask of Asian Americans/Native Americans] My racial or ethnic group has been blamed for the spread of COVID-19 in the United States and have faced discrimination as a result.
h. Other drugs are more effective against the COVID-19 virus but the government is not telling us about those

No, I have not heard this 1
Yes I have heard this but it does not impact whether I will get a vaccine. 2
Yes, I have heard this and it makes me less likely to get a vaccine……...3

[MOVE Q39 TO SHOW BETWEEN Q37 & Q38]

39. [IF Q3 = 4] If we reach the point where
[SPLIT A] Over 200 million Americans are vaccinated
[SPLIT B] Over 250 million Americans are vaccinated
[SPLIT C] Over 300 million Americans are vaccinated
[SPLIT D] Over 60% of your friends and family are vaccinated
[SPLIT E] Over 75% of your friends and family are vaccinated
[SPLIT F] Over 90% of your friends and family are vaccinated
Would you feel more comfortable yourself getting the vaccine?

Yes, I would be more comfortable getting the vaccine 1
No, I would still not be likely to get the vaccine 2
This would have no impact on my views..... 3

CONTENT FOR THOSE WHO HAVE BEEN VACCINATED

40. [IF Q3=2] Some people skipped or forgot to take the second shot. How about you? Did you take the second vaccine shot or not?

Yes, I took the second shot 1
I plan to take the second shot when the date comes 2
I have taken my first shot but do not plan to take the second shot …3

41. [Ask if Q3=1,2,3] How easy was it to get a COVID-19 vaccine for yourself?

Very easy 1
Somewhat easy.....2
Somewhat difficult.....3
Very difficult.....4

42. [Ask if Q3=1,2,3] Do you happen to remember which of the major vaccines you received?

Pfizer.....1
Moderna.....2

Johnson & Johnson 3
I was not told which vaccine I was provided with.....4
I do not remember/Don't Know.....88

43. [IF Q40=3] Which of the following best reflects why you have not yet taken the second dose of your vaccination? [allow multiple]

1. I had a bad reaction to my first dose
2. I have had trouble signing up for my second dose
3. One shot is good enough, I am not planning to take the second shot
4. It is too much effort to get the second dose, I am not planning to take the second shot
5. I have heard the side effects are very bad for the second dose

44. [IF Q3=1,2,3] Are you comfortable letting other people among your friends, family and neighbors know you have been vaccinated?
[RANDOMIZE]
1. Yes
2. No.

MESSAGES / MESSAGING THEMES ASKED OF EVERYONE NOT YET VACCINATED

[ASK IF C3=4]
We are now going to share statements intended to encourage people to get the COVID-19 vaccine. After each statement, please indicate if this statement makes you more likely to get the vaccine, or not.

45. A COVID-19 vaccine will make me safer and much less likely to get sick from COVID-19.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

46. The COVID-19vaccine is free.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

47. Getting a COVID-19 vaccine will help open up businesses here in [INSERT STATE] and help our economy rebound quickly.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2

Has no impact on how I think about the vaccine 3

IF S2=5 (NATIVE AMERICAN) PLEASE HIDE Q48 FROM THEM AND SKIP TO Q49.

48. Getting a COVID-19 vaccine will help save elders in my community who have valuable culture knowledge and help preserve our Native language.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

49. [NON-WHITE SAMPLES] Getting a vaccine will help open up [RACIAL GROUP] owned businesses here in [INSERT STATE] and help the economy in our community rebound quickly.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

50. Getting a vaccine will help open up schools fully here in [INSERT STATE] and help all children, teachers, and school staff feel safe to return to in-person learning.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

51. Over 150 million Americans have already received COVID-19 vaccines. It is clear that there are no major side effects for nearly everyone who has gotten a COVID-19 shot.

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine.....3

52. [For New Mexico Residents only] New Mexico has been a leader nationally in getting our residents vaccinated, but we can only fully re-open if everyone is vaccinated.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine 3

53. In the past year, at least 40,000 children have lost a parent to COVID-19. Millions more have a parent struggling with long term symptoms after getting infected with COVID-19. Getting a vaccine will help our children.

This makes me…

Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

54. Getting a COVID-19 vaccine can protect the lives of my family, friends, and those I love.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

55. REMOVE QUESTION, MAINAINING HERE FOR LABELING: I may not fully believe in the vaccine, but I know the only way we can get back to normal and fully re-open our economy is for everyone to get the vaccine. So I'm getting the vaccine to end the COVID-19 pandemic

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

56. The [RACIAL GROUP] community has been hit hard by COVID-19, with higher rates of [RACIAL GROUP] COVID-19 illnesses and deaths. The best way to prevent more suffering through this terrible pandemic is to get vaccinated and encourage all [RACIAL GROUP] people to do the same.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

57. Federal law requires that any personal information that you share when signing up for the vaccine is anonymous and must be secure. Your information will be kept safe and cannot shared.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

58. People and businesses in [IF S12=1 "big cities"; S12=2 or 4 "suburbs"; S12= 3 or 5 "smaller towns"] have been particularly hard hit by job losses here in [STATE], and many of our businesses are struggling due to the pandemic. If we all get vaccinated these businesses can open back up and more people here in <u>our community</u> can get back to work.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

59. Even though I am healthy, getting vaccinated will allow me to see loved ones who are older or more vulnerable. The best way to protect the elders in our community is to get vaccinated and encourage others to do the same.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

60. This past year, COVID-19 has robbed young people of the ability to experience many important life achievements like graduation, getting married, and advancing in their careers. The best way to give younger adults these opportunities again is to get vaccinated now

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

61. [IF S18=Republican] Former President Donald Trump got a COVID-19 vaccine and is now encouraging everyone to get vaccinated.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

62. [IF S18=NOT Republican] President Joe Biden got a COVID-19 vaccine and is now encouraging everyone to get vaccinated.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

63. This is not about red state against blue state. Former Presidents Barack Obama and George W. Bush both received the COVID-19 vaccine and are now encouraging everyone to get vaccinated.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2
Has no impact on how I think about the vaccine.....3

64. Getting vaccinated is patriotic and part of our responsibility to each other.

This makes me…
Much more likely to get the vaccine.....1
More likely to get the vaccine.....2

Has no impact on how I think about the vaccine 3

65. Getting vaccinated protects my community's elders and our culture.

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

66. [For New Mexico Residents Only] New Mexico has been a leader nationally in our COVID-19 vaccination rates and this has helped open things back up across the state. We all need to keep doing our part and get vaccinated so New Mexico continues on the right track. This makes me...

Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

67. I may not always believe the government, but our nurses, doctors and healthcare experts all agree the COVID-19 vaccine is safe and effective.

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

67_1. Because people who are vaccinated for COVID-19 almost never get the disease, getting vaccinated will help us stop having to wear masks.

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

68. Getting the COVID-19 vaccine will allow the return of safe family occasions like birthday parties, celebrations and holiday get togethers

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

69. Getting the COVID-19 vaccine will allow the return of social activities like going to movies, concerts and sporting events.

This makes me…
Much more likely to get the vaccine 1
More likely to get the vaccine 2
Has no impact on how I think about the vaccine 3

MESSENGERS – ASKED OF EVERYONE

70. On a scale of 0 to 10, with 0 meaning you do not trust at all and 10 meaning you totally trust, how much would you trust each of the following if they participated in a campaign to encourage Americans to get the COVID-19 vaccine?

a. Centers for Disease Control and Prevention
b. [INSERT STATE] Department of Health
c. My personal doctor/primary care physician
d. Friends and family who have taken the vaccine
e. Food and Drug Administration (FDA)
f. Local Hospitals here in [STATE]
g. [COUNTY, PIPE 'District' for DC] County health officials
h. [RACIAL GROUP] Doctors & Nurses (if White, just list 'Doctors & Nurses")
i. A local pharmacist where I pick up prescriptions
j. My child's doctor
k. Religious leaders from your church or place of worship
l. Online publishers of medical information (such as WebMD or Mayo Clinic)
m. [Native American] Native news outlets such as Indian Country Today, indianz.com, local tribal papers
n. [Native American] My Tribal government
o. [Native American] Tribal leaders
p. [Native American] Tribal health facility here in [STATE]
q. [IF Latino] Spanish language news media such as Univision or Telemundo
r. [IF AAPI] Asian language news media
s. Dr. Anthony Fauci
t. [RACIAL GROUP] Small business owners from my community (If White, do not insert Race)
u. [Insert Racial/Ethnic Group] Elected Officials
v. Republican Members of Congress
w. Democratic Members of Congress
x. Your local member of Congress
y. [BLACK] Civil Rights Organizations like the NAACP, Color of Change, the Urban League and PushBlack
z. [Latino] Civil Rights Organizations such as LULAC or Unidos
aa. [AAPI] Civil Rights Organizations such as Asian Americans Advancing Justice
bb. NASCAR drivers ~~such as Denny Hamlin or Joey Logano~~
cc. NBA Basketball stars ~~such as LeBron James or Steph Curry~~
dd. WNBA Basketball stars ~~such as Breanna Stewart or Candace Parker~~
ee. NFL football stars such as Peyton Manning
ff. Major League Baseball stars ~~such as Aaron Judge or Mike Trout~~
gg. Professional soccer stars ~~such as Christian Pulisic or Weston McKennie~~
hh. Members of the World Champion US Women's National Soccer team

ii. Actor, director, producer, and screenwriter Tyler Perry

[PROGRAMMER NOTE: REPEAT SCALE HALF WAY THROUGH]

71. How often do you use each of the following for information or news?

a. Facebook
b. Twitter
c. Instagram
d. Discord
e. TikTok
f. Reddit
g. Gab or Rumble
h. [AAPI] WeChat, Line
i. [AAPI] Kakao Talk
j. Talk radio or news radio
k. CNN
l. MSNBC
m. Fox News
n. National Network News (ABC, CBS, NBC)
o. Local Network Affiliates in your city (ABC, CBS, NBC)
p. PBS television news
q. NPR (National Public Radio)
r. Local newspaper in your city – either print or online
s. [LATINO] Spanish news such as Univision or Telemundo
t. YouTube
u. Google
v. [NATIVE] Native American news outlets such as Navajo Times, Indian Country Today, Native American Calling
w. [BLACK] Black news outlets such as BET, Ebony, Essence or Black radio

Never heard of it/Never used it.....1
Many times per day.....2
About one time per day.....3
Couple times per week.....4
Couple times per month.....5
Only very occasionally 6

CONTENT FOR PARENTS

72. [Ask if S13 = 1] Although the vaccine rollout is currently focused on adults, soon there will be a similar effort to vaccinate children across the country. As vaccines become available for those under age 18, do you plan to sign your child/children up for the vaccine? [Allow multiple]

Yes, will sign up a 16 or 17 year old.....1
Yes, will sign up a child age 12 to 15 years old.....2
Yes, will sign up a child 11 or younger.....3
I have already vaccinated my 16 or 17 year old…….5
I will vaccinate my older children but not the younger ones……6
No, will not sign up my child.....7 [EXCLUSIVE]
Don't know/It depends.....88 [EXCLUSIVE]

73. [If Q72=No] Why are you not planning to sign up your child for a vaccine? [SELECT ALL THAT APPLY]

1. Children do not need a vaccine because they do not often get COVID-19
2. My child is scared to take the vaccine
3. There has not been enough research done with children to ensure the vaccine is safe for kids
4. I do not believe in vaccinating children
5. Once I am vaccinated I do not have to worry about my child infecting me with the virus
6. Being exposed to diseases naturally is safer for my child's immune system than being vaccinated
7. I am concerned about the side effects the vaccine may have on my child
8. My spouse or partner does not want my child to get the vaccine
9. My religion does not allow for vaccinations
10. I have heard from many people that the vaccine is not safe for kids
11. I think a COVID-19 vaccine might cause lasting health problems for my child

74. How strongly do you agree or disagree with the following statements about COVID-19-19 vaccines for children? [Rotate questions]

a. The COVID-19 vaccine will be important for my child's health
b. Getting my child or children a COVID-19 vaccine will be a good way to protect them from COVID-19
c. The COVID-19 vaccine will be safe and effective if it is approved and recommended for children by the Food and Drug Administration and Centers for Disease Control and Prevention
d. If we get our kids vaccinated they can finally go back to school, playing sports and being involved in their activities with friends
e. I will do what my child's pediatrician, doctor or health care provider recommends about the COVID-19 vaccine for my child/children

Strongly agree.....1
Somewhat agree.....2
Neither agree nor disagree.....3
Somewhat disagree.....4
Strongly disagree.....5
Don't know.....88

75. Would you support or oppose requiring all teachers and school staff -- except those with a medical exemption -- to get a COVID-19 vaccine before fully opening schools next academic year?

Support.....1
Oppose 2
Don't know/It depends.....88

76. Would you support or oppose requiring all K-12 students to get a COVID-19 vaccine in order to attend school next academic year?

Support.....1
Oppose 2
Don't know/It depends.....88

IF S13=1, 2, OR 3, ASK Q77, Q78, Q79. ALL OTHERS SKIP TO Q80.

77. Generally speaking, in a typical year do your children…

Always get the flu shot every year.....1
Get the flu shot some years, but not always.....2
Usually do not get the flu shot 3
Never get the flu shot.....4

78. What about other vaccinations typically given to children? As far as you know, have your children had their routine childhood vaccinations?

Yes 1
No.....2
Don't know/It depends.....88

79. Has the focus on vaccinations during the COVID-19 pandemic impacted how you feel about having your children receive other routine childhood vaccines?

I am more likely to vaccinate my children for these other diseases moving forward……1
The pandemic has not impacted how I feel about vaccinating my children……2
I am less likely to vaccinate my children for other diseases moving forward……3

80. State education leaders are developing strategies to help kids catch up, make schools safer and reduce the spread of COVID-19. Do you support or oppose each of the following… [RANDOMIZE]

a. Extending the length of the school year to help kids catch up academically
b. Longer school days to help kids make up ground academically
c. Staggering different classes on different days to reduce class sizes

d. Having the classrooms extensively cleaned every day
e. Requiring teachers and students to wear masks to prevent the spread of the virus
f. Continuing a mix of in-person, on-campus class with online/distance learning from home
g. Only continue with online/distance learning until children are fully vaccinated for COVID-1
h. Resume fulltime in-person attendance for all families to get things back to normal

Strongly support.....1
Somewhat support.....2
Somewhat oppose 3
Strongly oppose 4

81. How important is your racial identity as [RACE GROUP] in your daily life?

Very important 1
Somewhat important 2
Only a little important.....3
Not important at all 4

82. Do you agree or disagree that discrimination against [RACIAL GROUP] people in the United States exists today?

Strongly agree 1
Somewhat agree.....2
Somewhat disagree 3
Strongly disagree 4

[IF Q3=4]

83. And one last time, which is closest to your plan regarding the COVID-19 vaccine? [check all that apply]

1…….I plan to get the vaccine as soon as I can. [=not hesitant]
2…….I have already scheduled an appointment to get the vaccine. [=not hesitant]
3…….I plan to get the vaccine, but I am not in a hurry to do so. [=some hesitant]
4…….I want to wait some time before getting the vaccine or deciding whether to get the vaccine. [=some hesitant]
5…….I do not know when I will get the vaccine. [=very hesitant]
6…….I will not get the vaccine. [=very hesitant] [EXCLUSIVE]
7…….I do not believe I am eligible for the vaccine [=some hesitant]
8…….Unsure/Don't Know [=very hesitant] [EXCLUSIVE]

[PROGRAMMER: CREATE A HIDDEN QUESTION TO TRACK HESITANCY]

DEMOGRAPHICS

D1. [ONLY IF S2=5] Do you currently live on a designated Native American reservation or Tribal government area?

Yes, live on reservation or Tribal area.....1
Live very near reservation, but not on Native American reservation.....2
No, do not live on a reservation.....3

D2. [ONLY IF S2=1 or 2] Do you consider any part of your ancestry or family origin to be Afro-Latino, that is to include both African and Latin American ancestry?

Yes.....1
No.....2
Don't know.....88
Refused.....99

D3. [ONLY IF S2=1, 3, or 4] When it comes to news and information about COVID-19 and the vaccine, how often do you use or rely on tv, radio, or online sources in [IF S2=1 "Spanish"] [IF S2=3 or 4 "another language"]?

Every day.....1
A few times a week.....2
A few times a month.....3
Rarely or never.....4
Don't know.....88
Refused.....99

D4. [ONLY IF S9=1]. Were your parents born in the United States, Puerto Rico, a US territory, or in another country?

Both parents born in United States.....1
Both parents born in another country.....2
Both parents born in Puerto Rico, Virgin Islands, American Somoa or other US territory.....3
1 born in U.S. /1 born abroad or PR, VI, or AS.....4
Don't know.....88
Refused.....99

D5. [ONLY IF S9=5] Which of the following best describes your immigration status:

I am a naturalized U.S. citizen.....1
Have applied for citizenship, but not yet finished.....2
Legal permanent resident, but not currently applying for citizenship.....3
I have a Visa.....4
Not eligible to apply for citizenship.....5
Other: SPECIFY.....6

D6. Which best describes your religious affiliation?

Catholic 1
Evangelical Christian 2
Baptist 3
AME 4
Protestant /Other Christian 5
Muslim 6
Hindu 7
Native American spirituality / faith 8
Jewish 9
Mormon 10
Atheist/non-religious 11
Agnostic 12
None 13
Something else 14
Don't know 88
Refused 99

D7. Are you currently married or not married?

Married 1
Not married 2
Don't know 88
Refused 99

D8. Do you consider yourself straight, gay, lesbian, bi-sexual, trans-gender or something else? [allow multiple]

Straight 1
Gay or Lesbian 2
Bisexual 3
Queer 5
Something else 6
Don't know 88
Refused 99

D9. Thinking about your family, friends and the people you know, do you know anybody who is an undocumented immigrant? [ALLOW MULTIPLE]

Yes, a family member 1
Yes, a personal friend 2
Yes, someone I know 3
No, I do not know anyone undocumented 4
Don't know 88
Refused 99

D10. Do you have any of the following medical conditions? (Select all that apply)

1. Cancer
2. Chronic kidney disease
3. Chronic obstructive pulmonary disease (COPD)
4. Heart conditions, such as heart failure, coronary artery disease, or cardiomyopathies
5. Obesity or severe obesity
6. Sickle cell disease
7. Type 2 diabetes
8. Pregnancy
9. Type 1 Diabetes
10. None of the above

D11. Which of the following is your main source of health insurance coverage?

I do not have health insurance 1
A plan through your employer 2
A plan through your spouse's employer 3
A plan you purchased yourself directly from an insurance company 4
A plan through the health insurance marketplace 5
Medicare 6
Medicaid 7
[STATE] health program [STATE MEDICAID NAME] 8
Indian Health Services (HIS) 9
Other source of health insurance 10

[There is a good list of names to use for each state here:
https://www.medicaidplanningassistance.org/state-medicaid-resources/]

D12. Do you currently have a primary care provider or family doctor?

Yes 1
No 2
Don't know 88
Refused 99

For D13 - IF S1=3, 4, 5, 7 (AAPI LANGUAGES) PLEASE SUPPRESS R11 AS IT WAS ADDED AFTER WE SENT TEXT FOR TRANSLATIONS.

D13. Which of the following best reflects your area of employment? [Allow up to 2 responses]
[DISPLAY ROWS IN ORDER SHOWN HERE]

Healthcare including caregiving, social worker, or working in a lab 1
First responder (fire department, police, or other emergency service) 2
Food and agriculture production/delivery 3
Restaurant/Grocery store 4

Education/Educator/Teacher 5
Government sector 6
Retail/work in a store that has remained open 7
Transit/Transportation 8
Unemployed/not currently working 9
Tribal Government 11
Other [specify] 10

D14. [Ask if D13=1-8] Are you currently working mostly from home or are you working outside of the home and interacting with people regularly?

Working mostly from home……1
Working mostly outside of the home and interacting with people……2
Working mostly outside of the home but not interacting with too many people……3

D15. [If D13 =1 or 2] What more specifically within health care best reflects your employment?

a. Doctor/Physician
b. Pharmacist
c. EMT
d. Medical resident/student
e. Registered Nurse (including APRNs)
f. Licensed Practical Nurse
g. Certified Nursing Assistant
h. Physician assistant
i. Orderly
j. Hospitality
k. Social Worker
l. Housekeeping and Maintenance in a clinic, health care facility or hospital
m. Dining services in a health care facility or hospital
n. Laboratory technician
o. Social worker
p. Home healthcare provider
q. Dentist
r. Dental assistant
s. Administrative Staff
t. Other

D16. In the 2020 election, who did you vote for President: [ROTATE]

Donald Trump 1
Joe Biden 2
Someone Else 3
I did not vote for President 4

D17. And finally, what was your total combined household income in 2020 before taxes. This question is completely confidential and just used to help classify the responses, but it is very important to our study.

Less than $24,999 1
$25,000 to $49,999 2
$50,000 to $79,999 3
$80,000 to $99,999 4
$100,000 to $150,000 5
More than $150,000 6
Don't know 88
Refused 99

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