

An Ailing Republic: How Covid-19 Affected the 2020 Presidential Election

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Abstract

The 2020 Presidential election was a race that was destined to be controversial at its outset. This seemingly routine quadrennial clash of Democrat vs Republican was further complicated in its prosecution by the arrival of the Covid-19 pandemic early in that year, muddling an already murky electoral picture. This thesis seeks to tease out some of the implications of the Covid-19 pandemic on the election, addressing issues such as mail-in voting, traditional electoral factors, and the data driven impact of Covid-19 case totals on county-level voting. Using regression analysis, this thesis also shows that while it might be easy to blame the Covid-19 pandemic for former President Trump's failure to capture votes, there is no significant statistical relationship between higher case totals and republican votes. Further, there is additional evidence that far from dissuading voters from the Trump-Pence ticket, higher rates of Covid-19 infection were associated with higher rates of Republican voting.

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Chapter 1: Introduction

The United States presidential election is an event that surpasses all others in American politics. Since the beginning of the American “experiment”, the presidency has served as the most visible and recognizable branch of the federal government, symbolizing not only the prestige and strength of the country but also its people’s dedication to transitory political power. The SARS-CoV-2 (abbreviated Covid-19) pandemic began its rampage through the world during the 2020 exercise of one of these quadrennial elections and came to dominate all arenas of life rapidly throughout the course of that year.

This thesis will attempt to tease out some of the political effects of that pandemic, specifically its impacts on the presidential election of 2020. This topic is one of the utmost importance as it has become something of a foregone conclusion among epidemiologists that pandemic diseases will become more likely as the effects of climate change continue (Berezow et al. 2018; Brooks, Hoberg, and Boeger 2019; Doucleff 2021). Whether through increased human-to-human contact due to migration, rapid deforestation causing previously isolated species to interact, or a growing biomedical arms race between pathogens and medicine, it is inevitable that humankind will face another pandemic in the future. The possibility of a future pandemic lends a great deal of urgency to understanding how these events impact our political systems, and how we can better understand electoral processes through them.

In the case of the 2020 election, there is hardly a clear answer when it comes to isolating an outcome *without* the interference of the pandemic. If it were to be asked of a member of either political party in the run-up to the November election, they would likely have said that their candidate would win regardless of any issue of disease. Former President Trump certainly

believes he should have won, and that he was thwarted if not by the interference of the pandemic than by a widescale voting fraud operation (a claim with no evidence) (Saul and Epstein 2020; Lott 2020). Even among the community of political analysts and reporters it was taken as a fact very quickly after the election wrapped up that Trump had lost because of the pandemic (Market 2021; Dawsey 2021; Lin 2021; Imiola, Finn, and Ledger 2021). To what degree the pandemic had caused Trump's electoral defeat was up for debate, however the first loss by an incumbent president since George H. W. Bush was regarded by many as an event that required significant explanation.

Trying to tease out the electability of each candidate in a world where Covid-19 was not a factor is perhaps a futile exercise: there is no such world. However, it is worth noting that for many voters in the 2020 election, Covid-19 may as well not have been a factor at all. Polling both months before and just after the election indicated that across the board Democratic voters were far more likely to take the Covid-19 pandemic more seriously than their Republican counterparts, placing it as the issue they were most likely to base their vote on even over the traditionally highest priority, the economy (Pew Research Center 2020). By November 2020, the gulf of concern had widened, with Republican voters being 16 points more likely to prioritize economic issues as a major voting concern and 43 points less likely to be concerned about the coronavirus.

The non-concern of some segments of American voters presents some serious issues for any analysis of the election, because while it was an election with remarkable turnout, with 17 million more votes cast compared to 2016 (Persily and Stewart 2021), voters went to the polls with very different frames of reference. This may cast doubt on any analysis which seeks to claim that by any small percentage of case change, voters may have voted differently, however

through regression analysis we can develop a better grasp of the exact impacts on voting caused by the pandemic.

Considering these factors leads me to a couple of questions that I will seek to answer in this thesis. First, and very broadly, what was the impact of the Covid-19 pandemic on the election? Is the widely held belief among Republicans that Trump was robbed of the victory by Covid-19 true? This belief that Trump lost due to Covid-19 permeated almost all news following the election; is this substantiated by the evidence? Were there any spatial differences in voting that may shed insight onto the result? If there had been no Covid-19, would the incumbent President Trump have been returned to office? This last question is difficult to answer without reaching too far into the realm of speculation, though, ignoring any personal failings of the former president, it is worth noting that it was a strong possibility.

A second question I will address will be how mail-in voting became a factor throughout the election. As some voters were wary of attending the polling places in person due to the risk of Covid infection, did increased access to mail-in voting options affect partisan voting patterns? Were voters more likely to vote if they could do so by mail? Claims by the former president also alleged a widespread voting fraud operation that, although never factually demonstrated, influenced some Trump supporters to later storm the US Capitol Building on January 6, 2021. Is there any merit to these claims, and did the president's early allegations of fraud in the voting system influence his supporters to cast their ballots in a certain way?

The second chapter of this thesis will focus on the sub-discipline of electoral geography. Chapter 1 will locate this work within the field of geography as a whole, showing some additional areas of research commonly undertaken by electoral geographers. Electoral geography

has traditionally been concerned with spatial and partisan influences on elections, and this thesis will reside in that tradition while also considering events leading up to the election.

The third chapter of this thesis will focus on several factors that may have influenced the 2020 presidential election. This chapter considers those factors such as the economy that have consistently been considered important to both electoral and political geographers, as well as issues such as mail-in voting which became a large factor in this election. This chapter will also consider historical precedents that may give insight into how electoral processes can be influenced by pandemic events.

The fourth chapter of this thesis will focus on the data used for analysis in this thesis as well as the methods used to analyze that data. Almost all data for this analysis came from the US Census Bureau, which provides datasets at the county level for researchers, but some data also came from the CDC, the Kaiser Family Foundation, and the MIT Election Data and Science Lab. Analysis in this project focused on the use of regression analysis to work out the impacts of various factors on the election.

The fifth chapter focuses on the results of the analysis outlined in the third chapter, displaying the regression analysis tables and analyzing each of their individual variables. Four regression analyses were undertaken, each displaying a different value and using different response variables to provide a wide range of results.

The sixth chapter will focus on analyzing the results of the regression analysis and pulling out some conclusions from that analysis. The final chapter of this thesis will aim to answer the questions raised in the introduction, with the main focus being on how the pandemic

impacted the electoral prospects of the Trump campaign. Did the pandemic really cost Trump his re-election bid, or were other factors more likely responsible?

This thesis fills a gap in the geographic and political research on the 2020 presidential election, specifically how the Covid-19 pandemic caused county-level voting changes. This election drastically changed the political course of the United States, and whether any reader believes that to be for worse or for better, it is critical to understand how it happened.

Chapter 2: Electoral Geography

The field of electoral geography has roots in the empirical analysis of elections, particularly those in the United States and the United Kingdom (Warf and Leib 2011). While the subdiscipline was largely left behind in geography by the emergence of a more theory-based focus, recent work in electoral geography is attempting to right this course (Johnston, Shelley, and Taylor 2014; Forest 2018; Agnew et al. 2017). Emphasizing a merger of both the quantitative approaches of a field such as political science and the more qualitative and theoretically based nuances of social theory, electoral geography is uniquely poised to analyze an electoral event such as the 2020 presidential election. With the 2020 election being a complicated mess of electoral factors with traditional concerns taking a backseat to pandemic response, electoral geography's focus on scale, space, and voting patterns can help develop a more in-depth and nuanced look at the pandemic's effects.

Seminal work in electoral geography often explores issues traditionally related to elections such as religion, class, ethnicity, education level, and race, as well as more geographic concepts such as place, identity, and scale (Warf and Leib 2011). As political science as a field has grown more aware of the spatial dimensions of politics (see for example: Hays, Kachi, and Franzese 2010; Darmofal and Strickler 2016; Whitten, Williams, and Wimpy 2021), and with the increasing access to GIS technology, electoral geography is reemerging as a way to join a more theory-based field such as geography with the increasingly spatialized political science.

Electoral geography got its foundation in the American system in the 1930s with researchers first publishing maps showing the spatial orientation of American political parties (Prescott 1959). These first works in the field demonstrated for the first time the strong correlation of American political parties to their powerbases; in the case of the 1930s the Democratic “Solid South” and Republican North. Early electoral geographers demonstrated the correlation of these political parties with the distribution of various other phenomena, such as tobacco and cotton production being a predictor of Democratic vote in the South and industrial centers being an indicator of Republican power (Prescott 1959).

These early researchers in electoral geography were concerned with how spatial patterns could provide a causal argument for the voting patterns seen on the map (Forest 2018). Often, election returns were the only data available to these researchers, and so the causality for individual voting patterns had to be inferred from obvious spatial relationships. These works laid the groundwork for theories used today, namely the link between various spatial factors such as occupation, income, and location and voting patterns (Forest 2018).

Around the same time these correlations were being advanced by electoral geographers, another segment of the field was springing up, political mapping. These maps were often created by geographers to point out the average voting habits across the country, emphasizing the geographic influences on elections that could be seen from the map (Wright 1932; Prescott 1959). This is a trend that continues in electoral geography to this day, with summary mapping atlases being issued for nearly every American election (Watre et al. 2018; Archer et al. 2014). These publications helped to explain common political phenomena to the American public and helped put electoral geography on the academic map, so to speak.

Electoral geographers began to expand their reach from the 1950s onward, with early work on the ideology and behavior of voters already beginning a departure from electoral geographies' quantitative underbelly in the 1960s and 1970s (Rowley 1969; Taylor 1973). Research into the operations and strategies of political campaigns became a large part of the field beginning in the 1980s, with research into how geography may impact the outcome of said endeavors (Archer 1981; Archer et al. 1985; Agnew 1996).

Researchers such as Ron Johnston greatly advanced the field with their prolific body of work in electoral geography (Johnston, Shelly, and Taylor 1979; Johnston 1979; Tamas, Johnston, and Pattie 2022; Castree 2021). Johnston's unique perspective on electoral geographic issues would go on to define the field, and indeed there is hardly a publication in the field that could go without citing his works. Johnston's long and incredibly prolific career defined the scope of the sub-field, with some of his earlier works such as *Geography of Elections* arguing that electoral geography took place in the intersection of political science, geography, and sociology (Johnston, Shelly, and Taylor 1979; Taylor and Johnston 1979).

As editor of a variety of journals, Johnston also oversaw the publication of numerous works focused on British and American electoral phenomena. He himself was an avid proponent of several concepts that define electoral geography to this day, such as contextual voting influences (Pattie and Johnston 2000), the "neighborhood" effect (Macallister et al. 2001), the difference between American and British political analysis (Johnston 2005), and the nature of representation in western democracies (Johnston and Pattie 2017). Other notable contributors to the field include scholars such as Charles Pattie, J. Clark Archer, John Agnew, and Richard Morrill, who all developed the field further.

Electoral geography began to turn into its more current format with studies of issues such as gerrymandering, turnout, redistricting, and change in voter preferences. Research into these topics has consumed much of the attention of electoral researchers in recent years, especially as technologies like GIS have made it easier than ever to analyze electoral data. This ease of access to electoral data has allowed the field to turn from its previous inferential methods to a more spatially represented analysis of electoral events.

This move from inferential analysis to GIS mapping has had a twofold effect however, in that since the 1990s most analysts and news sources now no longer rely on geographers for interpretations of electoral events (Morrill, Knopp, and Brown 2007; Warf and Leib 2011; Forest 2018). Indeed, the ubiquity of political mapping has led to the development of public spatial interpretations of political results, such as the now infamous red and blue America map shown by news stations during each election (Figure 1). Still, electoral geographers are routinely called on for their political analysis on issues such as redistricting and voter change, and interpretation

of political events through map making has certainly not lost its importance (Forest 2018; Bunina 2020; Pishgahi Fard and Ranjbar Dastenaei 2021).

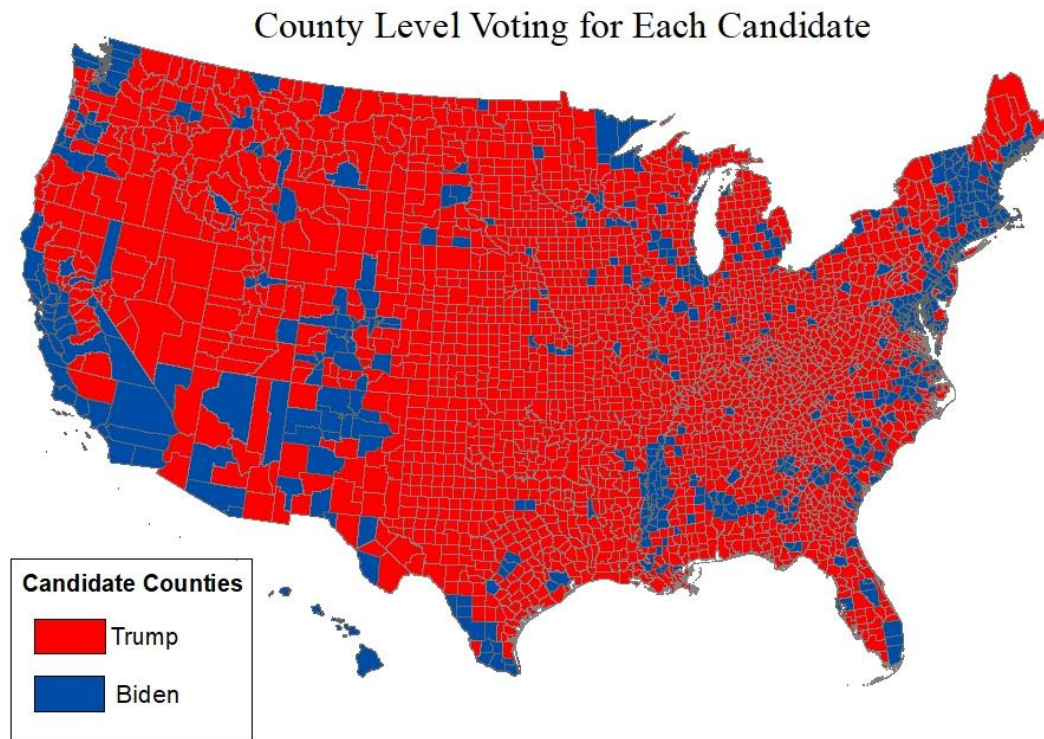


Figure 1: 2020 Presidential Election, County Level Results, 48 Contiguous States and Hawaii. Source: Map by Author, Data from MIT Election Lab 2021

Work focused on the issue of gerrymandering and redistricting has also been leading the sub-field of electoral geography for some time now. Simply put, gerrymandering is the practice of underrepresenting or overrepresenting a group of likely partisan voters to provide and advantage to one political party (Chen and Rodden 2013). While the fight over gerrymandering is a near constant political process (see *League of Women Voters of Pennsylvania et al., v. Commonwealth of Pennsylvania et al.* for an example of an off-year gerrymandering fight), it

typically picks up every ten years with the release of the decennial census. This topic has been and continues to be covered extensively by electoral geographers (Morrill 1994; Warf and Leib 2011; Agnew et al. 2017; Duchin and Walch 2022).

Additional, recent work in electoral geography has focused on the inherent male-bias in the field. Nearly all works published in the sub-discipline up until the early 2000s were authored by men, but this is beginning to change with the introduction of feminist theory into both electoral and political geography (Secor 2004; Staeheli, Kofman, and Peake 2004; Sharp 2007; McGing 2014). Feminist research into electoral geography issues remains scarce; however, several authors have pointed to the unique perspective that may be offered by their entry into the field (see for example Warf and Leib 2011; McGing 2014).

Another important change occurring in the field is the move away from the traditional American and British bias that has so far dominated research (Warf and Leib 2011; Forest 2018). Work done on countries like Italy (Agnew 2002), Weimar Germany (O'Loughlin 2002), Poland (Zarycki 2015), India (Lefebvre and Robin 2009), and Turkey (Bekaroğlu and Osmanbaşıoğlu 2021) has helped to break the spatial focus on American elections and broaden the scope of the sub-discipline. These pieces have allowed electoral geography to expand beyond its traditional borders and incorporate additional perspectives.

Electoral geographers have in the past dealt with elections as events that are spatially grounded “arenas in which subjects express their preferences within structural constraints” (Warf and Leib 2011, p. 3). In this manner, I will look into how this election differs from past events studied by electoral geographers in that the spatiality of the Covid-19 pandemic uniquely impacted voters as the election was underway. The spatial unevenness of this pandemic led to

some areas of the country being more heavily impacted than others; did that spatial unevenness play a role in the end vote?

For this election, many of the usual issues often debated during presidential campaigns would take a back seat to the more pressing matter of the corona pandemic. While the primary season had started out normally, with an incredibly large field of Democrats seeking the nomination, by the time voting had begun on Super Tuesday 2020, the rumblings of what was to come were starting to emerge (National Conference of State Legislatures 2020; Weichelt et al. 2022). What would become clear in the coming months was that although Joe Biden had emerged victorious from the primary season, his campaign faced an entirely new playing field in the general election. This change from the usual structure of the campaign cycle presents a unique opportunity for electoral geographers. This election would be focused not on what potential presidents could get done in terms of policy but rather on how they might respond to the current crisis, a situation only rarely faced by presidential candidates.

Chapter 3: Talking Points and Electioneering

This chapter will focus on various factors that are typically considered when doing an analysis of American elections and may have had an impact on this electoral bout. Issues such as the economy, the power of the incumbent officeholder, and traditional factors that influence voters such as college education are here considered, all of which have been linked by electoral geographers to the success or failure of candidates in the past (Watre et al. 2018). Additionally, this chapter will consider an historical precedent for this election, namely the 1918 pandemic, as well as the issue of mail-in voting which became a contentious factor in the 2020 election.

Historical Precedents: The 1918 Pandemic

The advancement of health care has meant that pandemic disease became rarer as we moved into the age of institutional healthcare and medicine in the 20th century. For many Americans, the last great pandemic disease in living memory was likely poliomyelitis, which swept the nation and struck fear into many parents. Polio, as it is commonly abbreviated, is a disease that, although it did not spread widely, struck seemingly without reason, leaving droves of children permanently paralyzed or dead (Baicus 2012; Tur-Sinai et al. 2019; Johnson 2022). While polio was a great source of concern for Americans, it never spread as widely or as fast as a disease such as Covid-19, and so while it had a severe impact for those affected, was not on the same scale.

A disease which *was* more of a kind to Covid-19 was the 1918 flu pandemic, however. Starting its rampage across the globe while the First World War was nearing its end, the 1918 pandemic is widely believed to have had its origin among the enlisted American soldiers in

Camp Funston, Kansas (Spinney 2018). This rather benign-presenting flu began as a minor sickness before developing into a disease that was unlike anything medical professionals at the time had seen. The flu had a particular proclivity to hit those who were young and healthy the hardest, causing a reaction among their immune systems known as a cytokine storm (Morens and Fauci 2007). The disease spread rapidly, and by the time the US Public Health Service had been notified of the outbreak, over 500 men in Camp Funston had reported in sick with the disease.

The slow reactions by health officials and wartime concerns over damaging the morale of the public with news of a new pandemic meant that by the time the disease was noticed in Camp Funston it had already reached New York City. By the summer of 1918, the flu had made its way across the ocean and a new strain of the flu had emerged in Switzerland that was so deadly, US intel referred to it as a reappearance of the Black Death (Barry 2009). This strain would cross the ocean again, only this time in the lungs of returning US soldiers.

The pandemic that returned from Europe hit the US in September of 1918 spread with a fury along the rail lines of the nation. Small towns across the Midwest would see the news of its arrival in the newspapers days before; not through warnings of health officials, but with the arrival of advertisements for products like Vick's VapoRub. Even as the disease was killing hundreds of people a day in cities like Philadelphia, often only hours after they came down with symptoms, health officials were told to toe the government line, assuring the public that everything was okay. As the director of public health for Chicago put it, "It is our job to keep people from fear. Worry kills more than disease" (Barry 2009, p. 324; Morens and Fauci 2007). Even while mass graves were being dug with steam shovels in America's cities, President Wilson made no comment about the disease.

In this dramatic case of pandemic overtaking the public while government figures did nothing, it would be easy to deduce that the administration would have a hard time maintaining political support among the public. For President Wilson, however, the pandemic came at a time when he was in a relatively comfortable political position. Having won reelection in 1916 by a narrow margin, the president had asked Congress to declare war on Germany in 1917 in response to its policy of unrestricted submarine warfare, a move that was relatively well received among the American public. The real test of the president's policies would be in the 1918 midterm election, where voters would decide who controlled the Congress. The election became a referendum not only on the war, but on the government's response to the pandemic.

It was a great victory for the Republicans, who swept into office and took control of both House and Senate. Though traditional political knowledge had held that the pandemic had little impact on the outcome of the 1918 election (Crosby 2003), Abad and Maurer (2020) found the pandemic had caused a shift against the incumbent party across the country. They showed that the 1918 pandemic had little effect on the later 1920 presidential election, when the impact of the disease was fresh on voters' minds in 1918 it caused an anti-incumbent wave (Abad and Maurer 2020). This can give us some historical insight into the 2020 presidential election, where Covid-19 was fresh on the minds of many voters.

Incumbency Advantage

A factor that should be considered in any analysis of the 2020 presidential election is the inherent power of the incumbent. Though there is some evidence that the competitive edge of the incumbency has faded in recent years for Congressional elections (Jacobson 2015), incumbent presidents enjoyed a great deal of benefits in seeking reelection in the past (Mayhew 2008). Being in the public eye for years even before his presidency, it is undoubtable that President

Donald Trump was widely known to voters. It would have been hard to escape news of Trump over the course of his presidency; there are few Americans who could say they did not have an opinion of him going into the election (something any Congressional candidate could only dream of).

Because name recognition is important, to be known by voters is a huge advantage for most political figures. As Snyder and Strömberg (2010) found, representatives who lived in areas where they were less frequently covered by the press were more likely to be both unknown to their voters and also unaccountable to them (Snyder and Strömberg 2010). There are both benefits and disadvantages to being unknown, though in most cases it has been shown to hurt their chances at reelection, if only slightly (Gelman and King 1990; Trounstine 2011). It is easy to see then, that as the Democratic party was approaching the 2020 election, many primary voters and party officials thought it not worth the risk to field someone who, though they might be politically strong, was unknown on a nationwide level.

In this regard there was perhaps no better choice for the Democratic nomination for president in 2020 than former Vice-President Joseph Biden. Biden was widely known by the national electorate for both his long service in the US Senate and his eight-year tenure as Vice President during the Obama presidency (2009-2017). This was not the first time Joe Biden had run for the highest office; he had thrown his hat in the ring twice before, once in 1988 where he dropped out over accusations of plagiarism, and again in 2008, competing against his future boss Barack Obama (Bump 2020). Both times he had finished poorly, but his exposure cemented his place as a known moderate and a good candidate that had the unfortunate situation of competing against great candidates. In Biden's third run for the presidency, although his campaign started off on the wrong foot losing important primary states such as Iowa, New Hampshire, and

Nevada, it was clear after Super Tuesday that there was no other candidate who could combat President Trump in terms of public recognition than Biden.

The former Vice President had also benefitted over the past four years from having been in the public realm but not under too much public scrutiny. President Trump had not had the same fate. By the time the 2020 election was rolling around, it would be fair to say that there was rarely a week that had gone by under the Trump administration that did not feature some news story about the president's actions in office. This attention, though often negative, had propelled Trump to a near god-like status with his followers and subjected him to intense demonization by his detractors. Even to Trump's followers however, Covid-19 had come at a cost to his reputation, and the president's approval ratings began to slump over the course of the year (Gallup Polling 2016).

The decline of the president's approval ratings exposes another side of the incumbency effect; voters holding their elected officials accountable. While it may have seemed that unlike many other political figures President Trump would be as immune to the criticism he faced over his Covid-19 response as he was over the other scandals of his presidency, this turned out not to be the case. The president's inability to remain unaccountable to his voters follows a trend that is well established in political science research, which is that voters will punish politicians for events that happen while they are in office. Perhaps one of the most famous examples of this effect occurred during the Wilson presidency, mentioned already above, where research has found that voters punished the president at the polls for shark attacks that had occurred just before the election (Achen and Bartels 2012).

While this example may seem a bit fantastical, it is a true electoral factor that although voters could not reasonably expect President Wilson to have stopped shark attacks, feeling the

effects of their occurrence caused voters to change their minds. Voters do not need to understand exactly what policies or events led to changes they see, rather they vote based on how any changes have affected their welfare (Fiorina 1981). This effect can apply in many different contexts, for example severe weather events (Healy and Malhotra 2009), or economic events (Fiorina 1978; Kiewiet 2000). For this pandemic, it could be easy to see how localized cases of Covid-19 could cause voters to cast their ballots retrospectively. Previous research has indicated that localized deaths due to the Iraq war caused voters to lose their support of then-President Bush: could this same affect apply to Covid-19 (Gartner 2008)?

College Education

Education is a factor that has been shown repeatedly in the past to impact elections. Work in both electoral geography and political science has indicated that every degree obtained, from graduate level education to secondary education, decreases the rate of voting for conservative politicians and ballot measures (Branton 2003; Rauh 2013; Enten 2016). For this election, it is worth examining whether or not this effect is likely to hold true in terms of voting for Trump.

During the 2016 election, white voters across the board voted less for Trump with every degree of education they attained. For example, fivethirtyeight.com, a noted political prediction website, found that Trump led those people who were white and had attained a high school degree or less by a 42 point margin in the polls (Enten 2016). This effect was found regardless of wealth or social class; Trump won in 2016 by 24 points with every single income group who had no college education. Trump only maintained a margin of fourteen points with those whites who were college educated, and for postgraduate degree holders his margin was thirteen points under Clinton's (Enten 2016).

As this example shows, education has been a negative factor in voting for Trump before. This effect has been found regardless of which Republican is leading the ballot, however with Trump this effect was even more pronounced (Rauh 2013; Enten 2016). While this may be a function of the traditional bias against Republicans by those who are educated, it is also worth noting the hostility that has existed in the past between Trump and higher education (Olsen-Phillips 2016; Kreighbaum 2019; Graham 2020). The Trump 2016 campaign had marked a turn in the Republican party from a general dislike of university-level education towards a palpable hostility, with early campaign promises by the administration advocating for the elimination of the Department of Education entirely (Whitaker, McDaniels, and Johnson 2017). This hostility may have cost Trump further votes among the college educated, which almost certainly played into his defeat in this election.

“It’s The Economy, Stupid” – James Carville

Economic factors must be considered when looking at a presidential election as well. As those who study politics well know, the electoral fortunes of any given party rise and fall with the economy. In times of economic growth and success, it is hard to motivate voters to defect to the alternative, whereas in times of crisis voters often see the need for a change. This effect can extend even to local units of government, where voters seek accountability even from those local officials who may not have any ability to impact the broader economic contexts (Fiorina 1978; de Benedictis-Kessner and Warshaw 2020).

In January 2020, it would be easy to say that any Democratic challenger would be facing an uphill battle to retake the presidency. The US economy was in great shape by many metrics, with the stock market consistently reaching new highs and the GDP projected to grow around 3.3% for the year (Bureau of Economic Analysis 2022). All of this economic growth was before

March 2020, however, and by the time the first Covid-19 shutdowns were going into effect, the US economy had experienced its worst drop in GDP since the end of the Second World War (Bauer et al. 2020). The pandemic not only ended the longest consecutive period of economic growth in American history, but it also wiped out a catastrophic 20.5 million jobs by April 2020. By every metric, the economy had gone from boom to bust in a matter of days, and suddenly the race for the presidency was wide open once again.

While initially the Trump administration listened to the nation's advice of medical experts in guiding the country through the pandemic, it soon became clear that the administration was not prepared for an event such as the pandemic. This lack of preparation was all the more unsettling considering only two years before the Trump administration had disbanded a task force set up to prepare responses to an event just such as this (Riechmann 2020). Still, initially responses to the pandemic lined up with the advice of experts such as Dr. Anthony Fauci, and the American people headed into lockdown practically overnight. Eerie scenes of city streets in America's largest cities devoid of people and cars came to dominate social media, and a race began among ordinary citizens to acquire masks and protective equipment from whatever store or online service would sell them. In a sense, America had gone from business as usual to complete shutdown within a matter of moments.

This initial stage of the pandemic could not last forever however, and as essential workers began to return to the streets and to work, the country reopened its doors, if only a crack. By May, however, as the pandemic was reaching nearly 200,000 new cases a day, President Trump began to push for a full reopening of the American economy. Though the president noted in an interview with Fox News in May 2020 that "Look, we're going to lose anywhere from 75,000, 80,000, to 100,000 people. ... That's a horrible thing," he still argued for a rapid revival

of the American economy, going so far as to criticize the governor of Virginia for not reopening quickly enough (Superville and Lemire 2021). These comments came just after leaked reports out of the White House had indicated to the president that without a rapid economic recovery, he would lose the upcoming election to Joe Biden.

This attitude towards a desperate need for the lifting of Covid-19 restrictions even as cases were booming across the country lead to divides between the president and elected members of his own party. While the president expressed skepticism about the efficacy of wearing masks in his press briefings, Republican politicians like leader of the Republican House Caucus Kevin McCarthy (R-CA) encouraged Americans to follow the restrictions. In a particular instance in late June 2020 where President Trump had used a press briefing to express his skepticism again about the efficacy of mask wearing, Republican Senator Tim Scott of South Carolina was quick to respond with a tweet encouraging mask wearing in his state, where cases were booming (Chiacu 2020).

With the economy dragging out a slow recovery and misinformation on the rise, it is safe to say that the Trump campaign faced a desperate situation heading into the election. The state of the economy is analyzed in this thesis by two common metrics of economic success, the unemployment rate and the median household income. These factors were chosen to provide the best understanding of the economic recovery that was so vital to the Trump campaigns reelection effort. Analysis of this economic data will allow the issue of economic recovery to either be weighed out as a factor or granted responsibility for the incumbent president's loss of the White House.

Covid-19 Misinformation

Throughout the course of the 2020 presidential campaign, an information war raged on both sides of the ballot. On the Republican side, with the epidemic gripping the nation and the American economy suffering from the virus-induced shutdowns, the Trump campaign was desperate to turn the narrative of the election away from the pandemic and onto the what it touted as its successes (Al Jazeera 2020; Collinson 2020; Bredemeier 2020; Buncombe 2020). This despite the fact that cases were routinely higher in majority Republican counties across the country (see figure 2). On the Democratic side, the Biden campaign was clear to emphasize the importance of the pandemic, using it both as a talking point to draw comparison but also to emphasize the importance of following the advice of public health officials (Lewis 2020). While

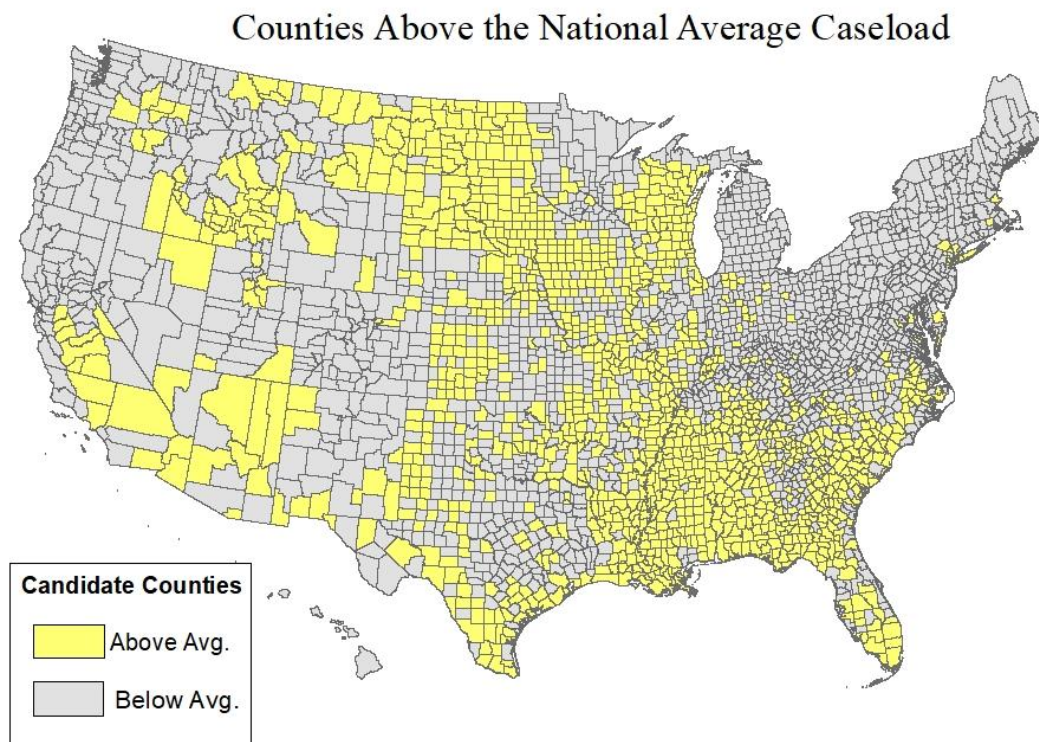


Figure 2: County Level Covid-19 Case Total, November 3rd, 2020, 48 Contiguous States and Hawaii. Source: Map by Author, Data from Kaiser Family Foundation

not attempting to seem too cynical, it is clear that the former vice-president's campaign saw political value in adhering strictly to the health guidelines put out by professionals even as Trump staffers and the president himself were falling ill with the virus.

The prominence of the virus in the news and on the minds of voters made for an uncomfortable position for the incumbent, as his 2016 campaign had focused more on attacking political opponents and the Washington system as a whole rather than emphasizing an alternative and cohesive policy plan. The president's perceived failure to manage the pandemic was unique in that it was not a position he could talk his way out of; after all, Covid-19 had spiraled out of control on his watch. That did not stop the Trump campaign from trying, however, and indeed the tendency to downplay the seriousness of the pandemic became a key campaign point (Hatcher 2020; Kapucu and Moynihan 2021; Warf 2021).

By August 2020, senior Trump advisors like Larry Kudlow, then chief economic advisor to the president, were speaking of the pandemic as if it was a past-tense event. As Kudlow said at the 2020 Republican National Convention in "It *was* awful ... Health and economic impacts *were* tragic ... Hardship and heartbreak *were* everywhere" (quote from Berman 2020, emphasis added). These comments came as Kudlow was speaking not from a large stage in a stadium or convention center, a political convention standby, but rather from his office in rural Connecticut, a glaring reminder of the seriousness of the very pandemic he was downplaying.

The pandemic also drew the Trump campaign's attention away from some of the traditional staples of the campaign process. Rallying and campaigning are typically critical parts of an election bid, and while Trump did initially halt his rallies around the country for a few months following the initial lockdown, the president hit the road again in late June with a rally in Oklahoma (Wilkie and Breuninger 2020). The incumbent president's haste to get back to the

campaign trail did not extend to fleshing out his policy preferences however, and it was not until late in the campaign that a statement of his “core priorities” was released, with little notice or emphasis (Trump Campaign 2020). The lack of emphasis on policy was in stark contrast to the Biden campaign, whose main policy positions had been outlined from the beginning of the former vice-president’s run for the highest office.

The Trump administration leadership was also fighting with itself in its response to the virus. Indeed, health officials like Dr. Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases, were clear about the need to inform the public of the dangers of the virus and to encourage the necessary health measures that could help to curb the disease’s spread. Weekly and daily press conferences at the White House emphasized the difference in approaches between the health officials on the president’s coronavirus task force and the president himself, with officials like Dr. Fauci often espousing the efficacy of measures such as mask-wearing in response to the virus only to have the president contradict said advice in a later statement. These disagreements only spiraled further, with members of the Trump White House openly disparaging Dr. Fauci and highlighting how, in the president’s own words Fauci “has made a lot of mistakes” (Samuels and Hellmann 2020).

The tendency of the president to downplay the advice of his health advisors, endanger his voters with rallies that left surges of Covid-19 infection in their path (Waldrop and Gee 2020), and the general disinterest shown by the president towards handling the worst public health crisis since AIDS may have been one factor in his loss of the presidency. The optics of the pandemic could not have been worse for President Trump; indeed the president’s approval ratings fell consistently over the course of the pandemic, from a relative high of 49% in March 2020 to a record low of 34% by January 2021 (Gallup Polling 2016). This misinformation leads to a need

for Covid-19 case count to be considered in this analysis, with the results of this analysis giving answers as to whether or not total cases were a factor in this election.

Mail-in Voting

Yet another major factor in the election was mail-in voting. Traditionally, voting by mail was done throughout the US for those who were unable to attend the polls in person (Moreton 1985). The practice of voting by mail has its roots in the American Civil War, when several states allowed their soldiers fighting on the front lines to mail in their ballots while away on duty (Moreton 1985). Coincidentally, this practice led to a landslide victory for Abraham Lincoln as he sought his second term in 1864, a fact not overlooked by his political contemporaries. Voting by mail allows a voter to skip the usual rigamarole of the democratic process, allowing for greater access to the vote.

This ease of access to the vote presents a great deal of benefit to voters, but also raises questions about the integrity of this process. If voting is becoming easier, does that mean it is also easier for voting fraud to occur? How can voter fraud be prevented or detected? Will one party or another gain a political advantage from the expansion of mail-in voting? These questions have been around since the process of voting by mail began, however they began to come to a head in the 2020 election.

With the pandemic raging and voters more concerned than ever about being among crowds on election day, many states saw voting by mail as a natural option to bring down the risk of an already fraught election. Most states expanded vote by mail for both the 2020 primaries and the general election, allowing their voters to mark the Covid-19 pandemic as a reason they could not vote in-person and therefore qualified for the mail ballot (Love, Stevens,

and Gamio 2020). Seven states left voting-by-mail laws as they were, forcing voters to use ballot drop boxes or provide another reason as to why they could not vote by mail. This rapid change in voting procedure was not without its bumps in the road, with a notable example being the Wisconsin primary vote, which was disrupted by 11th hour court rulings and the refusal of the state legislature to expand the voting deadlines (Love, Stevens, and Gamio 2020; Weichelt et al. 2022).

Still, as the expansion of the mail-in vote was instituted across most of the US, the usual concerns about vote by mail were raised again, this time by President Trump himself. Early on in the election, the president began to raise his doubts about the security of voting by mail, setting the groundwork for his later refusal to accept the results of the 2020 election (Chen et al. 2021; Saul and Epstein 2020; Persily and Stewart 2021). Trump was adamant on the campaign trail that the expansion of voting by mail was an effort to rob him of the White House, and he voiced his concerns to his voters whenever he got the chance. As Trump said in September of 2020 “Mail ballots, they cheat. ... Mail ballots are very dangerous for this country because of cheaters. They go collect them. They are fraudulent in many cases” (Saul and Epstein 2020). With this concern being raised by the president and primed in his voter’s minds, it is worth examining the president’s concerns over mail-in voting.

The first big claim about mail-in voting often made by those who seek to discredit the process is that it is riddled with fraudulent behavior. This claim is nothing new, and it has been thoroughly refuted again and again each time it is brought up. While voting fraud *does* happen, and when it occurs it *has* been found to be more likely to occur by mail, cases of voter fraud by mail have been found to be few and far between (Eggers, Garro, and Grimmer n.d.; Saul and Epstein 2020). In multiple refutations, election officials across the country found very little

evidence of fraud in any area of the 2020 election (Woodruff 2021; Itkowitz et al. 2020; Eggers, Garro, and Grimmer 2021). Further, voter fraud that would be large enough to impact the 2020 election in a significant manner was disproven by analyses of the voting done after all votes were counted (Eggers, Garro, and Grimmer 2021; Berlinski et al. 2021). This evidence, taken together, can safely be taken to refute the claim that vote by mail allowed fraud to permeate the election.

The second big claim about voting by mail is that it benefits one political party or another. This claim likely stems from the belief that greater turnout in elections benefits the Democratic party, therefore making voting easier would result in greater rates of Democratic voting. This belief is largely unfounded, and for multiple reasons. Firstly, there is little evidence that higher rates of turnout benefit the Democratic party (Grofman, Owen, and Collet 1999; Citrin, Schickler, and Sides 2003; Barber and Holbein 2020; Shaw and Petrocik 2021). Research has found that although voters who do not participate in elections often are more likely to vote for Democratic candidates, the mobilization of every single one of these voters in every election would have changed very few electoral outcomes.

The second part of this claim is the idea that voting by mail increases voters' likelihood to submit their ballots. This notion has also been found to be less impactful than may be assumed. Across the country, in states where vote by mail has been instituted as either the main way of voting or a universal option to voters, turnout has been found to increase only slightly (Fitzgerald 2005; Southwell 2009; Barber and Holbein 2020). Even when ballots are sent to the homes of registered voters without their application, turnout does not significantly rise. This indicates that although voting by mail is more convenient for voters, it is not necessarily more likely to cause voters to participate in the democratic process.

While it is true that in the 2020 election Democratic voters were more likely to vote by mail, the divide between voters in using this service seems to have been a result of the Trump campaign's statements about voting and not any nefarious effort on the part of the Democratic party (Niebler 2020; Chen et al. 2021; Persily and Stewart 2021). Republican voters were far more skeptical of voting by mail, despite the fact that many Republican political figures were previously supportive of the process just a decade ago (including the President himself) (Berman 2020; Chen et al. 2021; McEvoy 2021). This has been taken to be a result of the Trump campaign's efforts to discredit the process, and indeed it gave him the ability to declare his victory just hours after the polls closed when no mail-in-ballots had yet been counted (Itkowitz et al. 2020). Taken together, this evidence can indicate that although voting by mail may have slightly increased turnout in this election (with that conclusion based only on previous elections), it was not likely a major factor in deciding the outcome.

Chapter 4: Data and Methods

This chapter focuses on the data gathered for this study and the methods that were undertaken to interpret that data into useful conclusions. For this thesis, it was imperative that the data gathered from the web come from reputable sources, and so most sources used here either rely on government data or are themselves government data reporters. One area of note is the exclusion of Alaska in the analysis, which was excluded due to a lack of data in many datasets for the state.

Data

Data for this study were gathered from a number of sources and agencies. For the voting data, I used the numbers provided by the MIT Election Data and Science Lab for both the 2016 and 2020 elections, which are available online at <https://electionlab.mit.edu/data>. For data regarding the number of Covid-19 cases on election day in 2020, I used the Kaiser Family Foundation's Covid-19 reporting website and data download, which can be found at www.kff.org/coronavirus-Covid-19. Other data such as income, population and urban-rural data were all provided through the Census Bureau's data portal at data.census.gov. Data on income and population were from the 2020 decennial census redistricting data batch and were displayed at the county-level scale. Urban-rural data was also at the county level scale but was from the 2010 census rather than the 2020 census because of a lack of 2020 data in the online portal.

The data for unemployment figures came from the Bureau of Labor Statistic's economic survey from November 2020 to December 2021. Only data for the November 2020 period was used for this project. All data are displayed at the county-level, and unemployment rates were

used. Data for education were provided by the Census Bureau but excludes some American counties as it is from the American Community Survey dataset, which does not cover all states but rather provides a subset of data.

Data on population did not include things such as age, gender, or minority status other than race, as the released 2020 census data at the time of analysis does not include those statistics. Estimates of such factors could be taken from an extrapolation of 2019 population estimates and the 2010 decennial census data, but this task was not undertaken for fear of using unreliable data. Future study into this issue would benefit from the addition of these factors as variables in regression analysis.

Covid-19 data was limited to the total caseload on election day 2020, November 3, to give the best picture of the impacts of the disease at the time of voting. Data were organized at the county level, with each county across the US reporting their own case totals. It should be noted that although the data is from a reliable source in the Kaiser Family Foundation, there is some doubt as to whether cases were recorded correctly by states. Shortages of Covid-19 testing kits leading up to the election had led to delays in testing across the US, with one report stating that by October 2020 73% of testing labs were missing equipment (American Society for Microbiology 2020). Furthermore, President Trump had urged doctors to slow testing in early 2020, seeking to keep case numbers artificially low, which led to some states such as Florida changing their testing policies in ways that may have incorrectly recorded lower case numbers (Lopez 2020).

Overall, data for this study provide a cohesive set which covers many of the factors that may have influenced the election. All data were gathered at the same spatial scale, allowing for an in-depth analysis of county-level voting apart from state-scale interference. One area that was

mentioned above was the lack of data on the age and gender of voters, both of which are data points that have been shown to provide additional context for voting patterns in the past. With the upcoming release of 2020 census data, further analysis along these lines could incorporate this data to provide a more in-depth electoral analysis.

Methods

In this research, I looked at how voting for either party changed between the 2016 and 2020 presidential elections, focusing particularly on change in votes for the incumbent Donald Trump. Recent research in political science has pointed to an increasingly polarized electorate of American voters (Fiorina and Abrams 2008; Sides and Hopkins 2015; Pierson and Schickler 2020), and that was certainly the case here. In the 2020 election, despite all odds and with the pandemic raging, turnout was higher even than the last presidential election, by a margin of around 17 million votes (Persily and Stewart 2021; Census Bureau 2021). According to the Census Bureau, the 2020 election was the most well attended election in the 21st century, with 66.8% of registered voters participating compared to 61.1% in 2016 and 61.8% in 2012 (Census Bureau 2021; 2017; 2013). Turnout increased unevenly however, with greater access to vote-by-mail and same day voter registration in Western and Eastern states leading to a rise in voting there that was much more significant than in Midwestern and Southern states (see figures 3 and 4).

As stated earlier, there is a serious divide in how Republicans perceived the pandemic vs Democrats (Pew Research Center 2020). This divide presents some concerns when analyzing data related to the election. If conclusions are to be drawn about how a certain rate of cases may impact voting, how is the impact of that case rate to be determined? This is where regression analysis comes into the picture. Regression allows for a quantitative understanding of how

individual variables have impacted the main dependent variable, which is the rate of Republican voting.

Analysis focused on several variables which were taken together as a part of a regression model. The chosen variables that made it into the regression were the percentage of White identifying individuals in a county, the percent unemployed, the urban population of each county, the median income of each county, the percentage of college-educated individuals in each county, and of course the case level on November 3 in each county. The log of each of these variables was taken in order to ensure a normal distribution of values for statistical analysis. Four other variables were considered, all different response variables: the log of the rate of voting per county and for each party, and the log of the change in votes over the 2016 presidential election for each party.

The use of regression models to analyze these data provide a picture of the 2020 election that might be overlooked using other methods. Other studies into electoral events may utilize methods based on correlation alone to provide results, which may lead to the false positive results that regression can avoid. More complicated analysis can often give more detail into a subject but will often obscure small changes at the regional level that can be detected in a multiple regression more easily.

On the other hand, however, regression modeling can suffer from the lack of a qualitative data gathering method in that it is up to the researcher to decide inputs and interpret outputs. In a qualitative research project, multiple inputs from either interview or personal experience can provide insight into factors unknown to the researcher. This may be the case in this project, where data into the election could consider any number of factors and is limited by the researcher's ability to acquire it at the right spatial scale and knowledge of its importance.

Values were input into the regression model calculator which is included in the data analysis pack provided by Microsoft Excel. The regression equation used was

$$\Delta \text{Votes}((R \text{ or } D \text{ log}) \text{ or } (R \text{ or } D \text{ log of change})) = \beta_0 + \beta_1(\text{log of \%Cases}) + \beta_2(\text{log of \%white}) + \beta_3(\text{log of MedianInc.}) + \beta_4(\text{log of \%Unemployed}) + \beta_5(\text{log of \%Urban}) + \beta_6(\text{log of \%CollegeEducated}),$$

with R standing in here for Republican vote and D standing in here for Democratic vote. Both the log of vote values and log of vote change values were included to provide for a better understanding of the pandemics impact.

Correlation Table	Log of Median Household Income	Log of White	Log of Unemployment	Log of Cases	Log of College Educated	Log of Urban
Log of Median Household Income	1.00	0.13	-0.15	-0.12	0.30	0.23
Log of White	0.13	1.00	-0.46	-0.30	-0.16	-0.20
Log of Unemployment	-0.15	-0.46	1.00	-0.12	0.16	0.23
Log of Cases	-0.12	-0.30	-0.12	1.00	-0.04	0.08
Log of College Educated	0.30	-0.16	0.16	-0.04	1.00	0.43
Log of Urban	0.23	-0.20	0.23	0.08	0.43	1.00

Table 5: Table showing the correlation of variables. Sources: Microsoft Excel 2022, United States Census Bureau 2019; 2020; 2021; Bureau of Labor Statistics 2021; MIT Election Data Lab 2022.

Chapter 5: Results

Analysis focused on values that may have impacted the main dependent variable in this experiment, Republican vote-share. As can be determined from this first regression, values such as whiteness and median household income were both significant in this first analysis with t values of 31.55 and -12.26, respectively. Coefficients such the rate of urbanization in a county and the college-educated population were also significant, but to a lesser extent. Covid-19 cases fell right in the middle, with a t-stat of 12.38 and a p-value well under 0.

Table 1. Model 1: Regression Results for the Log of Total Republican Votes

N Value = 3112 Multiple R ² = 0.41 Standard Error = 0.13 F Value = 360.78						
Factors	Coefficients	Standard Error	t Stat	P-Value	Lower 95%	Upper 95%
Intercept	1.57	0.09	15.79	4.60 E -54	1.38	1.77
Log % White	0.70	0.02	31.55	8.46 E -190	0.66	0.75
Log Median Income	-0.22	0.02	-12.261	8.56 E -34	-0.26	-0.19
Log % Unemployed	-0.04	0.02	-2.80	0.01	-0.08	-0.01
Log % Cases	0.10	0.01	12.38	2.02 E -34	0.09	0.12
Log % Urban	-0.02	0.003	-6.44	1.36 E -10	-0.00	-0.02
Log % College Educated	-0.03	0.004	-7.48	9.37 E -14	-0.04	-0.02

NOTE - Values were input into the regression model calculator which is included in the data analysis pack provided by Microsoft Excel. The regression equation used was $\Delta\text{Votes} ((R \text{ or } D \text{ log}) \text{ or } (R \text{ or } D \text{ log of change})) = \beta_0 + \beta_1(\text{log \% Cases}) + \beta_2(\text{log \% White}) + \beta_3(\text{log Median Income}) + \beta_4(\text{log \% Unemployed}) + \beta_5(\text{log \% Urban}) + \beta_6(\text{log \% College Educated})$, with R representing the Republican vote and D representing the Democratic vote. Both the log of vote values and log of vote change values were included to provide for a better understanding of the pandemics impact. Sources: Microsoft Excel 2022; United States Census Bureau 2019; 2020; 2021; Bureau of Labor Statistics 2021; MIT Election Data Lab 2022.

All values in model 1 were determined to be significant to the model, and the regression itself was determined to be lowly significant with a multiple R-squared value of .41. This result could indicate a few things. First, it confirms research that has indicated in the past that white voters are more likely to vote for a Republican candidate (Cassese and Barnes 2019; Olson 2008). While perhaps unsurprising, this result gives good evidence that the regression is on solid footing with past research. This also confirms research cited earlier about the negative effect on Republican voting that higher levels of educational attainment has been shown to have (Ganzach, Hanoch, and Choma 2019; Weakliem and Biggert 2007). Cases of Covid-19 were shown in this

model to have a positive relationship with total Republican votes, indicating that where cases were higher there was a small tendency for votes for Trump to increase.

Table 2. Model 2: Regression Results for the Log of Total Democratic Votes

N Value = 3112 Multiple R ² = 0.39 Standard Error = 0.17 F Value = 335.26						
Factors	Coefficients	Standard Error	t Stat	P-Value	Lower 95%	Upper 95%
Intercept	1.94	0.13	14.63	6.64 E -47	1.68	2.20
Log % White	-0.72	0.03	-24.16	2.65 E -118	-0.77	-0.66
Log Median Income	0.15	0.02	6.06	1.54 E -09	0.10	0.20
Log % Unemployed	0.15	0.02	6.53	7.43 E -11	0.10	0.19
Log % Cases	-0.10	0.01	-8.63	9.90 E -18	-0.12	-0.08
Log % Urban	0.07	0.00	13.56	1.00 E -40	0.06	0.07
Log % College Educated	0.05	0.01	8.33	1.15 E -16	0.04	0.06

NOTE—Sources: Microsoft Excel 2022; United States Census Bureau 2019; 2020; 2021; Bureau of Labor Statistics 2021; MIT Election Data Lab 2022.

Model 2 details the obverse of the last model, covering Democratic votes rather than Republican. With all variables being significant by nature of their P-Values, it can be seen that percent White has a negative effect on total Democratic votes. The log of percent urban has a positive relationship, indicating that counties with higher rates of urbanization were more likely to vote Democratic. All other values fall within expectations, with variables like college education and median household income both pointing to higher rates of voting for Democratic candidates.

Importantly, the log of cases has a negative relationship on Democratic voting, meaning that while Republican voters were not turned off by higher case totals, Democrats were. This presents some interesting conclusions, indicating preliminarily that while Republicans may not have taken the Covid-19 pandemic as a serious factor, Democrats certainly did.

Table 3. Model 3: Regression Results for the Log of the Change in Republican Votes

N Value = 3112 Multiple R ² = 0.06 Standard Error = 0.30 F Value = 30.61						
Factors	Coefficients	Standard Error	t Stat	P-Value	Lower 95%	Upper 95%
Intercept	-1.15	0.23	-5.01	5.66 E -07	-1.60	-0.70
Log % White	0.42	0.05	8.15	5.32 E -16	0.32	0.52
Log Median Income	0.26	0.04	6.01	2.07 E -09	0.17	0.34
Log % Unemployed	0.27	0.04	6.81	1.15 E -11	0.19	0.34
Log % Cases	-0.05	0.02	2.62	8.88 E -03	-0.09	-0.01
Log % Urban	0.02	0.01	2.01	4.44 E -02	0.00	0.03
Log % College Educated	0.00	0.01	-0.38	7.06 E -01	-0.02	0.02

NOTE—Sources: Microsoft Excel 2022; United States Census Bureau 2019; 2020; 2021; Bureau of Labor Statistics 2021; MIT Election Data Lab 2022.

Model 3 analyzes the change in voting for the Republican candidate per county in 2020 as compared to the 2016 presidential election. While the model finds that most of the values included are significant, exempting college education, the model itself has a very low R squared value. This indicates that the values analyzed are not able to explain the change in the response variable, and therefore for this model the hypothesis must be rejected. This is an interesting result, given that it might have been expected that at least some change would be recorded in votes from past elections in an election that the incumbent lost.

Table 4. Model 4: Regression Results for the Log of the Change in Democratic Votes

N Value = 3112 Multiple R ² = 0.22 Standard Error = 0.42 F Value = 142.13						
Factors	Coefficients	Standard Error	t Stat	P-Value	Lower 95%	Upper 95%
Intercept	-2.64	0.32	-8.16	4.97 E -16	-3.27	-2.00
Log % White	0.39	0.07	5.40	7.07 E -08	0.25	0.53
Log Median Income	0.66	0.06	10.95	2.10 E -27	0.54	0.77
Log % Unemployed	-0.32	0.06	-5.78	8.13 E -09	-0.43	-0.21
Log % Cases	-0.35	0.03	-12.56	2.62 E -35	-0.41	-0.30
Log % Urban	0.11	0.01	9.59	1.75 E -21	0.09	0.14
Log % College Educated	0.09	0.01	6.46	1.19 E -10	0.06	0.12

NOTE—Sources: Microsoft Excel 2022; United States Census Bureau 2019; 2020; 2021; Bureau of Labor Statistics 2021; MIT Election Data Lab 2022.

Model 4 is similar to model 3, but this model measures the change in Democratic votes from 2016 rather than Republican change. This model had a slightly higher R-squared value at 0.22, meaning it is more significant than the previous model but not necessarily a statistic fact.

All variables in this model were deemed significant with low P values, however this time Covid-19 cases were the most significant variable. The T stat of -12.56 indicates that while there is change in the Democratic vote, this change is negatively related to increases in Covid-19 cases.

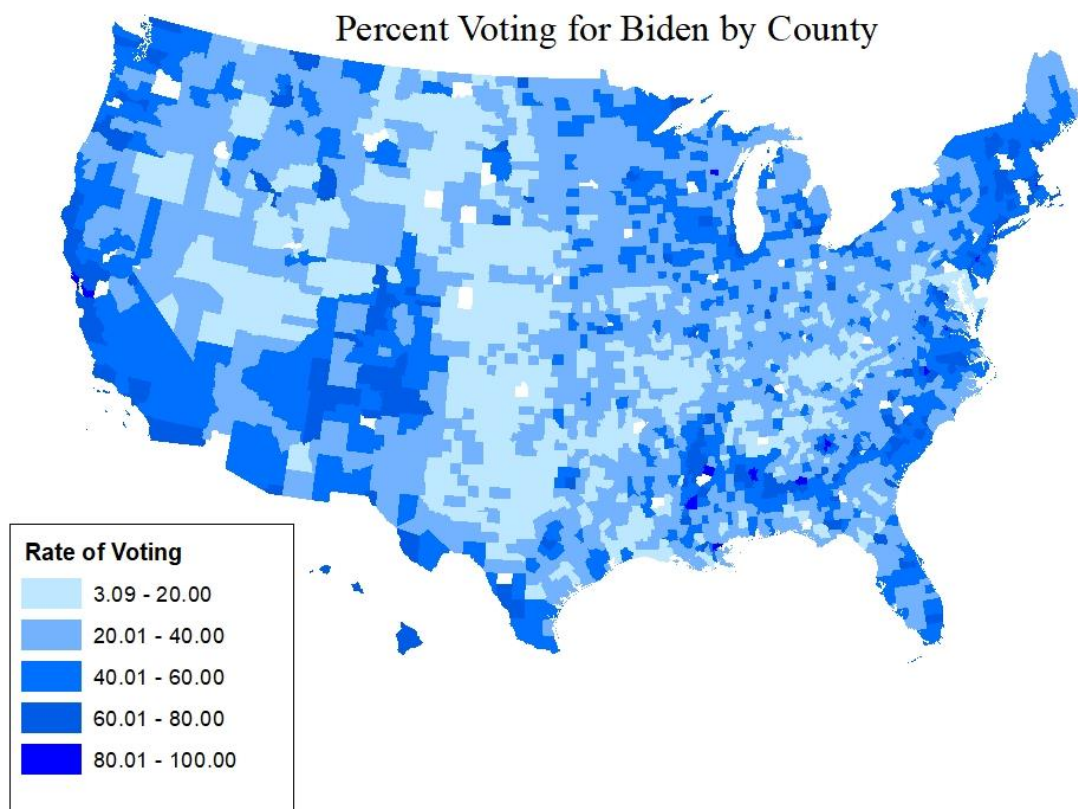


Figure 3: County Level Voting Percentages for Biden, November 3rd, 2020, 48 Contiguous States and Hawaii. Source: Map by Author, Data from MIT Data Election Lab

While Donald Trump did of course lose the presidential election (see figures 3 and 4), the results of both models 3 and 4 indicate that the president did not lose for any reason that was considered in these regression analyses. Given that these two analyses considered only change in voting over the 2016 value for both candidates, it could simply be the case that Democrats turned

out their voters in a larger proportion than Republicans, and therefore won by nature of getting out the vote. Turnout in this election was abnormally high as mentioned above.

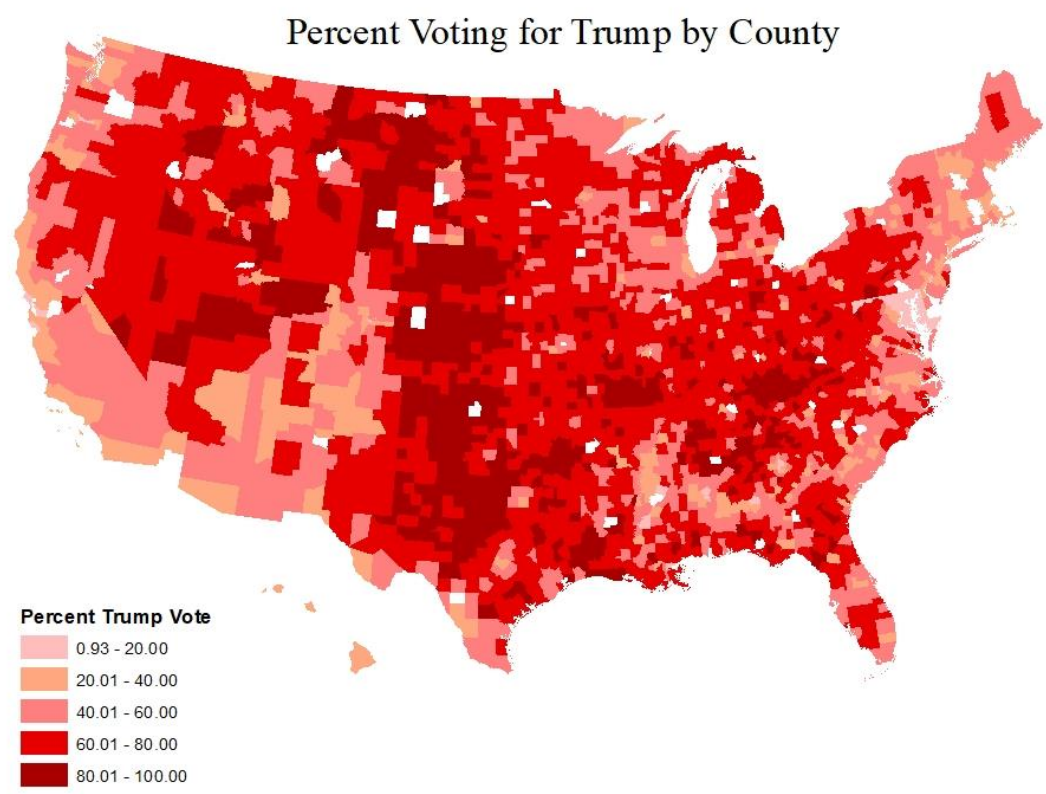


Figure 4: County Level Voting Percentages for Trump, November 3rd, 2020, 48 Contiguous States and Hawaii.
Source: Map by Author, Data from MIT Data Election Lab

Chapter 6: Analysis and Conclusion

The results of the four regression models provide some insight into the outcome of the 2020 presidential election. Each of these tests focuses on the percent voting for each candidate by county, taking into account several independent variables. In models 1 and 2, higher rates of Covid-19 infection were found to be related to higher rates of voting for the Trump campaign, and subsequently lower rates of voting for the Biden campaign. This result is in-line with other research into this topic, which has indicated that higher rates of Covid-19 cases were associated with greater rates of voting for Trump (Weichelt et al. 2022).

Models 3 and 4 focused on the change in votes for each candidate as compared to the 2016 presidential election and were largely found to have little statistical significance. This result is *not* in line with other research into this area, with Baccini, Brodeur, and Weymouth (2021) finding in “The COVID-19 pandemic and the 2020 US presidential election” that the Trump campaign had suffered from losses in votes in comparison to the 2016 election because of the impact of the pandemic. Their project had concluded that damage to the economy and the loss of votes in important industrial sectors had cost the Trump campaign votes.

It is clear that while higher rates of Republican voting were associated with higher rates of Covid-19 infection, there is little evidence that this relationship caused any voter shift away from Trump. If anything, higher rates of Covid-19 infection were more likely to predict a gain in voting for the Trump campaign rather than a loss. There are a few explanations for this result. First, as stated above, Republicans were less likely to follow Covid-19 restrictions and less likely to consider the pandemic as a major factor in their vote (Pew Research Center 2020). While

President Trump's Covid-19 response may have swayed some voters on the fringes away from his campaign, for the majority of his voting base that was not a factor in their decision. Former President Trump himself urged his voters to consider only the state of the economy and country as it was before the pandemic in many of his speeches, and the data shows that, for at least some of his voters, this message succeeded (Cathey 2020).

A second explanation that may be applied here is that voters were less concerned with retrospective voting when it came to this election. While retrospective voting has been found in the past to punish political figures who failed to act after disasters and major economic events, perhaps the Trump campaign was immune to this criticism (Achen and Bartels 2012; Bechtel and Hainmueller 2011). The election on November 3 took place at a time when Covid-19 cases were just beginning to ramp up, and the summer had been a relatively calm period with cases actually declining (CDC 2020). Perhaps voters were less inclined to vote retrospectively, instead voting based on other factors.

Trump may have also taken a hit more from economic factors than other presidents in the past. As indicated in the first and second regression models, for two traditional measurements of economic health, unemployment and median household income, both had a slight statistical tendency to push voting away from the Trump campaign. For a Republican president, especially a self-proclaimed billionaire, to be seen as weak on the economy when traditionally Republicans have been seen as strong in this area could not have helped Trump win reelection (Pew Research Center 2020).

It could be argued that Trump did not lose the election because of raw case numbers, but rather an amalgamation of the knock-on effects of the Covid-19 pandemic. As stated above, the economic impacts of this pandemic were severe and sudden, with the American economy rapidly

dropping in value practically overnight; was this the true cause of the Trump loss? I would argue that while judging all knock-on effects of Covid-19 is perhaps out of the scope of this project, the variables chosen for analysis provide a good net to grab the greatest number of factors and account for this possibility.

Conclusion

The results of the regression analysis in this paper answer one of the main questions listed at the beginning of this thesis; did the Covid-19 pandemic cost Donald Trump his reelection? Several groups of Trump's supporters certainly think this to be the case. As early as August 2020 Trump was already planting the seeds of this belief, remarking at the Republican National Convention that "What they're doing is using COVID to steal an election. ... They're using COVID to defraud the American people, all of our people, of a fair and free election" (Samuels 2020). These claims clearly were meant to prepare the Trump base to blame not the president for his potential future loss, but circumstances beyond the president's control.

This attempt to shift blame is something of a pattern for Donald Trump, with examples strewn throughout both his life and his presidency (Warf 2020). Trump cast a wide net during his re-election campaign, blaming not only Covid-19 for his potential loss but also things such as mail-in voting fraud (Marcus 2020), the certification of the election by his Vice President Mike Pence (Zhao 2021), the "betrayal" of a fellow Republican, Governor of Georgia Brian Kemp, by allowing the results there to be certified and sent to Congress (Quay 2022), and the votes of thousands of "dead people and paid Indians" who supposedly cost him the election (Smith 2021).

While most of these claims are beyond the scope of this thesis, for at least two of these claims we can say that Trump is likely wrong about the cause of his loss. As the results of this

regression analysis have shown, for most likely Trump voters the Covid-19 pandemic played little part in their voting choice. This flies in the face of what reporters and Trump campaign members have stated as their beliefs in the aftermath of the election. GOP strategist Brad Todd, who claimed after the election that Trump acquiring the disease had cost him his reelection, claimed very simply “If the President never gets COVID, he wins the election.” (Bennett and Berenson 2020). This blunt political analysis of the election was echoed on many sides, both by Trump supporters and detractors. Simply put, there is little evidence to support this conclusion, and ample evidence to refute it.

The other major factor Trump often cited as crucial to his 2020 loss was mail-in voting fraud. Despite himself appointing the head of the postal service just months before mail ballots would begin their trips to voters, Trump would still argue that the postal service was a stronghold of the Democratic party and was deliberately conspiring to defraud him of the vote. It can be stated now, that through multiple recounts, examinations of ballots, and the elimination of thousands of mail-in ballots in multiple states, there is absolutely no evidence of a conspiracy to use vote by mail to defraud Trump of his electoral victory (Marcus 2020; Sullivan 2020; Saul and Epstein 2020; Chen et al. 2021).

By 2020, it is also fair to say that Trump had alienated his fair share of the electorate with his constant news exposure. His personality, though appealing to some who appreciated his strongman antics, turned off many voters. Some of Trump’s biggest losses were among two vital groups; center-right Republicans and suburban women (Chang, Gutiérrez, and Kirk 2020; Conroy, Thomson-DeVeaux, and Cassese 2020). The Associated Press found that across the US there were often multi-point differences in voting for local Republican congressional candidates over voting for Trump in moderate Republican strongholds (Chang, Gutiérrez, and Kirk 2020).

538 also found that, while Trumps “save the suburbs” message had appealed to some voters in 2016, it had lost its edge in the 2020 election (Conroy, Thomson-DeVeaux, and Cassese 2020).

So, with these factors considered, what lost Trump the election? In a word, politics. The idea of a big personality candidate like Trump losing an election obscures the fact that on the other side of the vote there is another person who *won* an election, and that is now-president Joe Biden. Joe Biden was by all accounts a great candidate to take on Trump. His name recognition, solid-centrist political positions, refreshing female-led campaign PR team, and the general likeability of a middle-class, long-term US Senator turned Vice President propelled Joe Biden to the highest office in a time when the nation needed a steady (albeit old) hand at the wheel.

With all the bluster, bravado, and boisterousness of the Trump presidency, it can be hard to believe he was felled by a regular presidential campaign. However, through the analysis done in this thesis project, I can say with some confidence that this is likely the reason Trump ended up out of office, rather than any grand conspiracy or pandemic disease. At the end of the day, former-President Donald Trump played the political game and lost; whether the United States is better off for it remains to be seen.

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