Young Republican Climate Change Opinion Formation:

Investigation into Peer Norm-Setting Influence Using Public Survey Data

Laura Zwicker
Senior Honors Thesis
Department of Political Science
University of California, San Diego
March 30, 2020

Acknowledgments

I would first like to thank my thesis advisor, Maureen Feeley, whose tireless support and encouragement made the research process a joy to endure. Her dedication to student success and creativity gave me the confidence to find and use my own voice to defend my ideas and define my own research agenda. She spent countless hours providing advice and assistance that meant everything to this project and to me personally.

I would also like to extend many thanks to the instructors of the senior honors seminar, Professors Dan Butler and Kaare Strøm, as well as the graduate student assistant, Mike Seese, for sharing their expertise on the research process. Their advice and critiques challenged me to push this project where it needed to go. I also need to thank Matt Nelson, Writing Hub Director, and Annelise Sklar, Library Research Services Coordinator, for their immensely helpful workshops.

This project would not be possible if not for Professors Fonna Forman and Veerabhadran Ramanathan. Their class, *Bending the Curve: Climate Change Solutions*, was the inspiration for this work, and my early interest in this topic was fostered by their support.

This project also greatly benefitted from the guidance of PhD candidate Charles McClean who helped to shape it from the very beginning during my research apprenticeship. He continued to provide invaluable advice and assistance -- particularly with R programming -- throughout this entire daunting process. I also owe many thanks to PhD candidates Kathryn Baragwanath Vogel and Jonathan Walton who both greatly helped to develop my critical thinking and writing skills during my time as an undergraduate student.

Finally, I would like to thank my fellow student scholars from the senior honors seminar for providing feedback and support throughout our time together. Best of luck to you all!

Contents

1 Introduction

1.1 Research Question 5

1.2 Summary of Research Design & Findings 8

1.3 Outline of Chapters 11

2 Background Information

2.1 Importance of Addressing Climate Change 12

2.2 Statement of Problem 17

2.3 Historical & Current Context 20

3 Literature Review & Theoretical Framework

3.1 Situating Research as a Climate Change Communication Issue 25

3.2 Situating Research as a Young Person's Issue 29

3.3 Elite Signaling Framework 33

3.4 Peer Norm-Setting Framework 38

4 Research Design & Findings

4.1 Methodology 43

4.2 Overview of Data 48

4.3 Presentation of Regression Results 51

5 Discussion

5.1 Summary of Results 71

5.2 Limitations & Analysis of Findings 73

5.3 Suggested Next Steps 79

6 Conclusion 84

Appendices

I. Effect of Party Preference on Support for Climate-Focused Policies **88**

II. Effect of Age on Support for Climate-Focused Policies **92**

III. Effect of Education on Support for Climate-Focused Policies **93**

IV. Effect of Support for Donald Trump on Support for Climate-Focused Policies **97**

V. Effect of District Competitiveness on Support for Climate-Focused Policies **101**

References 105

List of Tables

Table 1. *Republican Sample Demographic Characteristics* **49**
Table 2. *Democrat Sample Demographic Characteristics* **50**
Table 3. *Effect of Party Preference on Support for Climate-Focused Policies* **51**
Table 4. *Effect of Age on Support for Climate-Focused Policies* **52**
Table 5. *Effect of Education on Support for Climate-Focused Policies (Millennials)* **54**
Table 6. *Effect of Education on Support for Climate-Focused Policies (Gen X)* **55**
Table 7. *Effect of Education on Support for Climate-Focused Policies (Boomers)* **56**
Table 8. *Effect of Education on Support for Climate-Focused Policies (Silents)* **57**
Table 9. *Effect of Trump Approval on Support for Climate-Focused Policies (Millennials)* . **58**
Table 10. *Effect of Trump Approval on Support for Climate-Focused Policies (Gen X)* . . . **59**
Table 11. *Effect of Trump Approval on Support for Climate-Focused Policies (Boomers)* . . **60**
Table 12. *Effect of Trump Approval on Support for Climate-Focused Policies (Silents)* . . . **61**
Table 13. *Effect of District Competitiveness on Support for Climate-Focused Policies (Millennials)* **63**
Table 14. *Effect of District Competitiveness on Support for Climate-Focused Policies (Generation X)* **65**
Table 15. *Effect of District Competitiveness on Support for Climate-Focused Policies (Boomers)* **67**
Table 16. *Effect of District Competitiveness on Support for Climate-Focused Policies (Silents)* **69**
Table 17. *Summary of Predicted & Actual Correlations* **71**

1.1 Research Question

It is a well-established fact that climate change poses a serious threat to the United States and the world at large with numerous economic, sociopolitical, human rights, and environmental impacts. The severity of climate change consequences warrants deliberate, concentrated efforts to produce solutions in order to keep global warming below 1°C and avoid catastrophic effects on human society. The need for effective climate change mitigation policies is clear, yet many nations have been slow to respond. Some, including the United States, have recklessly pursued policies that allowed for continued increases in greenhouse gas emissions despite the clear risks. The accelerating warming trend in recent years, extremely high dependence of modern society on fossil fuels, and reluctance of states to implement national climate policy make development of effective strategies to combat climate change an enormous undertaking requiring significant public buy-in. Establishing this buy-in in the United States has proven difficult due to the highly polarizing nature of climate change along ideological lines. In the U.S., political party is the greatest predictor of belief in climate change, the seriousness of the threat, the effectiveness of environmental policies, and trustworthiness of climate scientists. Republicans are less inclined than Democrats to believe in anthropogenic climate change, prioritize climate policies, or trust climate scientists; however, there is evidence of a distinct generational divide in the Republican party. If younger Republicans are more likely to believe in climate change and support climate policies, this represents an underutilized but important opportunity to analyze this ideological divide and determine what factors contribute to the formation of climate change opinion.

The traditional theory of political opinion formation is that signaling from political elites is a strong causal factor in the formation of opinions on complex topics. Indeed, many complex

topics including climate change, healthcare, gun control, and immigration are highly politicized along ideological lines. Decades of public opinion polling demonstrated this trend for climate change opinion in particular. Prior to the late 1980s/early 1990s, support for environmental policy was generally fairly similar for Republicans and Democrats (Dunlap 2008). However, the rise of the climate change denial movement -- initiated and sustained by Republican elites -- sought to discredit the science behind climate change and cast doubt on the effectiveness of environmental policy. Over the next two decades, belief in climate change and support for environmental policy dwindled among the general population of Republicans. As of 2018, about three quarters of Democrats believed in human-caused climate change and were concerned about it versus just a quarter of Republicans (Pew Research 2018c). Analyses typically directly attribute these trends to historical political elite rhetoric espousing climate change denial and doubt (Dunlap 2008; Nisbet 2009). The process by which this type of opinion formation is theorized to occur is a heuristic shortcut informed by political elite signaling. In the elite signaling theoretical model, this process occurs especially when topics are complex and remote to the average person (Gilens & Murakawa 2002; Hample 1985; Morley 1987; Petty & Cacioppo 1986). Given the data from historical polling trends and how climate change fits within the criteria of a topic vulnerable to elite signaling (Gilens & Murakawa 2002), it is unsurprising this theoretical model is the dominant explanation for climate change opinion formation.

However, young Republicans pose a problem for this traditional view in terms of their climate change opinion. The generational split among Republicans on climate change represents an aberration in the traditional model, as political elite signaling on this issue is extremely high and polarized with Republican leaders, including President Donald Trump, outright denying the

existence and seriousness of climate change. This project theorizes that young Republicans are ignoring and/or less respondent to elite signaling specifically on the issue of climate change, but the mechanism by which they form their opinions is still unknown and difficult to access. One potential alternative explanation is that peer signaling supersedes the influence of elite signaling for young Republicans on the issue of climate change. Peer norm-setting plays an understudied but powerful role in opinion formation. Even on politically charged issues, individuals are more willing to engage with complex topics when they experience a fear of accountability (Leeper & Slothuus 2014; Tetlock 1983), desire for belongingness (Baumeister & Leary 1995), or appeal to being a good citizen or neighbor (Groenendyk 2013). Some early studies have linked this type of moral framing to environmental concern specifically in Republicans (Wolsko et al. 2016), and ongoing research has explicitly linked peer norm-setting to environmental behavioral and opinion (Cialdini 2003; Cialdini et al. 1990; Goldstein et al. 2008; McDonald & Crandall 2015; Moussaïd et al. 2013; Nolan et al. 2008; Renn 2011; Swim et al. 2009; van der Linden 2015).

Although elite signaling is still the predominant explanation for climate change opinion formation, peer norm-setting holds significant potential as an alternative explanatory mechanism. There is little research into the topic of peer norm-setting relating to climate change, and none on the possible link between peer norm-setting and young Republican climate change opinion. The tension between elite and peer signaling on politically charged topics is also understudied, and attempting to link peer norm-setting and climate change opinion formation in young Republicans is an exciting opportunity to explore the knowledge gap surrounding this topic. It is hoped that any information gathered from this exploration may be utilized to potentially help create needed public support for climate change policy.

1.2 Summary of Research Design & Findings

Data from the Cooperative Congressional Election Study (CCES) is used to perform an analysis on the relationship between political party and climate change opinion in the U.S.. The data is disaggregated into age groups to reflect traditional generational boundaries used in studies by Pew Research and other sources. Specifically, Millennial Republicans (ages 18-38) will be compared with older Republicans (defined as Generation X [born between 1965-1980], Boomers [born between 1946-1964], and Silents [born between 1928-1945]). These generations will then be compared to their Democrat counterparts. The dependent variable -- climate change opinion of these various subpopulations -- will be operationalized as the level of support for four climate-focused policies assessed by CCES in a 2018 survey. The decision to disaggregate data and to operationalize the DV in this manner has serious limitations discussed more thoroughly later on in this paper. However, at this initial stage of inquiry, within the bounds of significant constraint, it is sufficient to investigate traditionally defined generations on their support for specific climate change policy questions, especially given how the motivation for this project is ultimately to contribute to effective climate change policy-making processes going forward. The four policies for which support was assessed by CCES are: 1) giving the EPA power to regulate carbon dioxide emissions, 2) lowering the required fuel efficiency for the average automobile from 35 mpg to 25 mpg, 3) requiring that each state use a minimum amount of renewable fuels in the generation of electricity even if electricity prices increase, and 4) strengthening the EPA enforcement of the Clean Air Act and Clean Water Act even if it costs U.S. jobs.

This project simultaneously tests multiple hypotheses to shed light on the process of climate change opinion formation in general, but with a specific focus on young Republicans. A

general baseline of ideological and generational opinions must first be established within the specific chosen dataset. Therefore, the first hypothesis tests the effect of political party (IV) on support for the four climate-focused policies (DV) for each generational subcategory; the second hypothesis tests the effect of age (IV) for the four climate-focused policies (DV) for members of each political party. It is expected that Democrats will demonstrate greater support for climate-focused policy than Republicans in all generations; it is also expected that younger members of both political parties will demonstrate greater support for climate-focused policy. The first hypothesis was confirmed for all generations on each policy question; the second hypothesis was confirmed for each policy among Republicans and for policies 1 and 2 for Democrats.

Next, two obvious confounding variables -- education and support for Donald Trump -- are independently tested with a focus on these specific generational subpopulations. The third hypothesis tests the effect of education level (IV) on support for the four climate-focused policies (DV) for each generational subcategory; the fourth hypothesis tests the effect of level of support for Trump (IV) on support for the four climate-focused policies (DV) for each generational subcategory. Given previous findings that education plays a modest and/or inconsistent role in climate change opinion (Pew Research 2016), it is expected that education will similarly play a modest and/or inconsistent role in support for the four climate-focused policies for respondents within this dataset. Given that higher levels of Trump support is correlated with lower levels of climate change belief (Pew Research 2017), it is also expected that respondents with higher levels of Trump support within this dataset will demonstrate lower levels of support for the climate-focused policies. The third hypothesis was confirmed for all generations of Republicans but not for Democrats, who demonstrated an association between increased education level and

increased support for climate-focused policy. The fourth hypothesis was confirmed for all generations of Republicans, but not for Democrats, who demonstrated inconsistent association between Trump support and policy support.

Some creativity was required to assess the role of peer norm-setting given the lack of specific questions relating to this concept within CCES. The competitiveness of congressional races in the respondent's district is used as an alternative method of evaluating the presence of potential peer norm-setting influences. An assumption is made that individuals living in safe Democrat, lean Democrat, or competitive districts may be exposed to peer norm-setting values that are more supportive of climate-focused policy than those living in lean Republican or safe Republican districts. This assumption has several limitations which are discussed in depth in the analysis section of this paper; however, a difference in generational response would represent a significant finding that could prompt further exploration down this avenue of investigation. For the fifth hypothesis, the competitiveness of the respondent's congressional district (IV) is tested for effect on support for the climate-focused policies (DV) for each generational subcategory and controlled for several other relevant factors including gender, race, voter registration, region, and number of children. Given the assumptions made here, it is expected that respondents living in safe Democrat, lean Democrat, or competitive districts will demonstrate higher levels of support for the four climate-focused policies than those living in lean Republican or safe Republican districts. However, the fifth hypothesis was not confirmed. There was no correlation between district competitiveness and policy support. All generations of both Republicans and Democrats demonstrated a minimal and inconsistent association between district competitiveness and policy support.

1.3 Summary of Chapter Outlines

The complexity and importance of this topic necessitate an in-depth understanding of the broader issue of climate change response. Chapter 2 summarizes the importance of responding to climate change in general and specifically for the United States, provides an overview of why garnering public buy-in for climate-focused policy is difficult and how this research is related to addressing this issue, and outlines the historical and current context of public opinion on climate change within the U.S. Chapter 3 situates this project within a broader context of climate change communication, specifically as it relates to young people, and provides a theoretical framework overview of both elite signaling and peer norm-setting research efforts. Chapter 4 explains the methodological approach of this project, an overview of the sample data used in the experimental effort, and regression summaries and tables. Chapter 5 summarizes the findings, offers analyses of the findings and the limitations of the research design, and suggests potential future research projects based on these results. Chapter 6 outlines the main takeaways and concluding thoughts on implications for climate-focused policy going forward.

2.1 Importance of Addressing Climate Change

Climate change refers to the significant, long-term alteration of Earth's climate system, including atmospheric composition, glacial and sea levels, and weather patterns. Anthropogenic climate change refers to the alteration of Earth's climate system by human activity. Primarily this has occurred through use of fossil fuels to produce energy (Wuebbles & Jain 2001). The burning of fossil fuels produces greenhouse gases (GHG) that change atmospheric composition, upsetting the delicate balance of Earth's "energy budget" by preventing solar radiation from escaping back into space (Wuebbles & Jain 2001). Over time, this imbalance causes an increase in overall global temperature which has a profound effect on many of Earth's natural systems. Although global temperature has varied throughout Earth's history, there has been a documented increase that has been accelerating since the First Industrial Revolution of the late 18th century that has been linked to GHG emissions caused by the burning of fossil fuels, most notably carbon dioxide (CO_2), to power human society (Solomon et al. 2009).

The resulting approximately 1°C rise in overall global temperature since this acceleration trend began has caused an "increased frequency and intensity of storms, hurricanes, floods, heat waves, droughts and forest fires…as well as the spread of certain infectious diseases, worsened air pollution, drinking water contamination and food shortages…[and a rise in sea levels] causing major damage in the world's most populous cities" (Ramanathan et al. 2016). According to projections based on current and predicted emissions, we can expect a rise of at least 2°C by 2050 and between 2.5°C and 7.8°C by 2100 (Ramanathan et al. 2016). Such a dramatic increase would likely have catastrophic implications for human society and disproportionately affect low income people and communities, developing countries, indigenous peoples, women, children, the

disabled, and other marginalized groups (Limon 2009). Worst case scenarios include "collapse of critical natural systems such as the Arctic sea ice, the Asian monsoon system and the Amazon rain forest" (Ramanathan et al. 2016), anywhere between "25 million to 1 billion environmental migrants by 2050" (Bassetti 2019), and severe loss of land to sea level rise and flooding (Climate Central 2017).

The United States is no exception to these dangers. Indeed, the consequences of climate change are already being felt within the U.S. Documented points of impact upon human health, societal infrastructure, and economic viability within the U.S. are multitudinous and compelling. It is essential to note that climate and weather should not be conflated; increase in overall global temperature has resulted in abnormal temperature extremes in both directions. The United States is currently facing "extended periods of unusual heat" presenting atypically in certain seasons and regions (Melillo et al. 2014), as well as extreme cold from an unstable polar vortex that has caused temperatures in parts of the U.S. to fall below temperatures in Antarctica and caused at least 21 deaths in 2019 (Gibbens 2019). Climate change is also linked to documented increases in the "frequency and intensity of some extreme weather events" such as hurricanes, flooding, droughts, and forest fires (Melillo et al. 2014). These events pose quantifiable danger to human health, safety, and societal and economic infrastructure. High temperatures and drought in the Western United States caused by climate change have directly led to "conditions [leading] to larger wildfires and longer fire seasons" (Melillo et al. 2014). In 2018, the U.S. experienced almost 60,000 wildfires -- of which just five resulted in 23,000 structures being damaged or destroyed, well over $12 billion in damages, and over 100 deaths (Insurance Information Institute 2019).

Flooding of the Missouri, Arkansas, and Mississippi rivers alone caused over $20 billion in damages in 2019 (Smith 2020). The "large increases in heavy precipitation…occurr[ing] in the Northeast, Midwest, and Great Plains…[have] led to runoff that exceed[s] the capacity of storm drains and levees, and caused flooding events and accelerated erosion" (Melillo et al. 2014). Flooding events affect coastal areas and also inland cities near large rivers, particularly in the Midwest and Northeast; however, [r]ising sea levels intensify coastal flooding and storm surge, and thus exacerbate threats to public safety during storms" (Melillo et al. 2014). Some coastal communities are now even threatened by the potential need for permanent relocation, while"[i]nsurance rates are rising in some vulnerable locations, and insurance is no longer available in others" (Melillo et al. 2014). Both flooding and sea level rise have also been linked to increases in injuries and waterborne diseases (Melillo et al. 2014). Significantly, every facet of "[c]oastal infrastructure, including roads, rail lines, energy infrastructure, airports, port facilities, and military bases, are increasingly at risk from sea level rise…[including] nearly five million Americans and hundreds of billions of dollars of property…located in areas [projected to be below sea level by the end of this century]" (Melillo et al. 2014). Furthermore, "[m]ajor storms and the higher storm surges exacerbated by sea level rise that hit the Gulf Coast affect the entire country through their cascading effects on oil and gas production and distribution" (Melillo et al. 2014).

The economic impacts of climate change on the U.S. are also significant and quantifiable. Without a reduction in emissions, by the end of the century, it is projected that climate change will cost the U.S. upwards of $141 billion annually for heat-related deaths, $118 billion annually for coastal property losses, $155 billion annually of lost wages in outdoor industries due to heat

waves, $26 billion annually due to deaths related to bad air quality, and $23 billion annually due to forest fires [not adjusted for inflation] (Gramling & Hamers 2018). Even with modest action to reduce emissions, the projected costs are still in the tens of billions of dollars each year. It is important to note that projections are based on our current situation. If emissions are not reduced, the situation and its associated costs will only be exacerbated by inaction. For instance, just three hurricanes that made landfall in 2017 cost the U.S. over $265 billion in total damages and aid (Gramling & Hamers 2018). Rising sea levels, melting glaciers, and particulate matter in the atmosphere from forest fires can also affect weather patterns and climate (Melillo et al. 2014), and it is therefore possible that future extreme weather events may be more extreme and cause more damage and result in higher costs than projected.

Furthermore, the U.S. operates an agricultural industry that "produces nearly $330 billion per year in agricultural commodities [and] is vulnerable to direct impacts on crops and livestock from changing climate conditions and extreme weather events and indirect impacts through increasing pressures from pests and pathogens" (Melillo et al. 2014). The collapse of this industry would be devastating for the U.S. economy, as well as a projected global population of nine billion by 2050 facing severe food and water shortages in the next few decades (Melillo et al. 2014). Short-term economic effects include declines in labor productivity and investment, which can impact long-term economic output. If emissions were to remain consistent, the U.S. is facing an overall 10.5% reduction in GDP by 2100 (Kahn et al. 2019). Yet even if emissions are reduced to levels acceptable under the Paris Agreement, projections suggest that a decrease in GDP is unavoidable in both developed and developing countries (Kahn et al. 2019).

The most troubling aspect of climate change is its potential for irreversibility. CO_2 can remain in the atmosphere for up to 1,000 years even after emissions cease (Solomon et al. 2009). The global temperature increase that has already occured will last for at least a millennium even if emissions are immediately halted. This has effectively locked in climate change consequences for human society. Furthermore, another approximately 0.6°C of projected warming based on historical CO_2 emissions is still stored in the ocean and is "expected to be released and contribute to atmospheric warming in two to four decades" (Ramanathan et al. 2016). Another approximately 0.8°C of projected warming based on CO_2 emissions has been masked by air pollution particles -- a masking effect which "will go away when strict air pollution controls are adopted worldwide" (Ramanathan et al. 2016). The complexity and magnitude of this problem, and its profound impact on the long-term viability of the United States and human society in general, cannot be overstated. There is a clear need to respond to the threat of climate change with decisive action.

Social science research plays a critical role in climate change response. There is no single scientific or technological solution that can solve climate change and its long-term consequences. Policy-focused, economic and market-based, and social transformative solutions are key aspects of effective climate change response (Ramanathan et al. 2016). Indeed, the implementation of scientific and technological solutions that could prevent or mitigate climate change consequences almost certainly requires innovative policy options, market regulations, and large-scale societal support. Understanding and optimizing all facets of proposed solutions is an arduous undertaking that must be carefully and deliberately informed by social science research efforts to ensure any solutions utilized effectively addresses the targeted issue.

2.2 Statement of Issue

The connection in global temperature increase and human activity has been repeatedly confirmed via "[l]ong-term, independent records from weather stations, satellites, ocean buoys, tide gauges, and many other data sources" (Melillo et al. 2014). Scientists predicted the events currently occurring as far back as the 1960s (Robinson & Robbins 1968), and multiple studies in recent years confirm an approximately 97% consensus among climate scientists on the reality of climate change (Cook et al. 2016). There has been increasing international recognition of the seriousness of the threat as well. The United Nations (UN) collectively recognizes that "climate change represents an urgent and potentially irreversible threat to human societies and the planet" (UN Paris 2015). A report by the UN Environment Programme stated that "[c]limate change... pos[es] a serious risk to the fundamental rights to life, health, food and an adequate standard of living of individuals and communities across the world" (2015).

Yet states have been slow and even reluctant to act. Large scale, international agreements aimed at reducing global emissions, such as the 1997 Kyoto Protocol and 2016 Paris Agreement, have failed to garner the universal support necessary for their success. Most notably, the U.S. did not ratify the Kyoto Protocol (Hovi 2010) and intends to withdraw from the Paris Agreement (Mooney 2018), and neither climate agreement contains an enforcement mechanism. It is largely up to each state to autonomously set and enforce its emissions goals -- unfortunately "[m]any large emitters aren't even on track to meet their self-imposed targets…[and] even if every country did manage to fulfil its individual pledge, the world would still be on pace to heat up well in excess of 2[°C] over preindustrial levels" (Plummer & Popovich 2018).

It is worthwhile and necessary to examine why states have not yet achieved sufficient progress on such an important global issue. In particular, the U.S. warrants close examination due to its position as a significant global leader and its role as "the country with the largest, most dynamic economy…[yet] historically responsible for more emissions than any other country…[and currently] responsible for almost a third of the [emissions] heating the planet" (Gillis & Popovich 2017). Although "debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand…long-term climate processes" (Doran & Zimmerman 2009), climate change remains a topic of considerable debate and political polarization within the U.S. This is an alarming trend in U.S. politics given the severity of potential repercussions if climate change is ignored.

The reasons for this lack of progress responding to climate change, in general as well as specifically in the U.S., are complex, numerous, and overlap with a number of systemic issues. Synthesizing these reasons into a coherent whole is frankly beyond the scope of a single paper. Nonetheless, it is possible and indeed necessary to examine and situate individual and specific factors into a larger framework of understanding how and why progress on climate change is occuring or not. In many states, one prominent explanation for a lack of effective climate change policy is its perceived political intractability. Concern for economic impacts of sweeping climate policy, unprecedented but necessary lifestyle changes, and potentially mismatched accountability among nations have led to volatile political discourse and lack of consensus on policy approach. In the U.S., public concern about climate change and support for climate change policy has been comparatively low (Stokes et al. 2015). Without wide-spread public buy-in, it is unlikely that the necessary large-scale changes will be viewed as politically feasible.

It is significant that political ideology is the greatest predictor of belief in climate change, as well as perceived seriousness of the threat posed, the effectiveness of environmental policies, and trustworthiness of climate scientists (Pew Research 2016). Indeed, "[t]here are no consistent differences or only modest differences in people's views about these issues by other factors including gender, age, education and people's general knowledge of science topics" (Pew Research 2016). In the U.S., Republicans are in general less inclined than Democrats to believe in climate change, prioritize climate policies, or trust climate scientists (Pew Research 2016). This has resulted in heated partisan debate with climate change and environmental issues highly contested topics for Republican candidates and law-makers.

Current President Donald Trump, and others within his administration, including former Environmental Protection Agency (EPA) head Scott Pruitt, have publicly doubted and/or denied the seriousness and even the existence of climate change despite near global scientific consensus (Mooney 2018). Under President Trump, many domestic environmental standards are being rolled back, the U.S. declared its intention to withdraw from the Paris Agreement, and executive rhetoric has been centered around undermining the credibility of established science. The U.S. risks a state failure by allowing partisan concerns to delay response to a grave threat that will affect many American citizens; therefore, it may be useful to examine why Republicans are less likely to believe in climate change and to question if that can be altered. This paper explores the topic of Republican engagement with climate change paying special attention to the interaction between communication processes and ideology in developing and maintaining political opinion. In particular, it focuses on the topic of young Repubublican climate change opinion and engagement as a possible point of entry for additional research on this topic.

2.3 Historical & Current Context

It is worth noting that many of the most vocal critics against climate change policies are actively exploiting the climate crisis for financial, political, and personal gain. President Trump's business dealings reveal a different sentiment than his public rhetoric about climate change -- his company Trump International Golf Links applied for permits to build a sea wall around a golf course threatened by "global warming and its effects…cit[ing] scientific studies indicating that a rise in sea level could result in damaging erosion in a bay near the golf course" (Rupar 2018). Big oil companies such as ExxonMobil, which often have immense lobbying power within U.S. politics, are expecting record profits in the coming years -- in fact actively working to more than triple their profits between 2017 and 2025, despite publicly supporting proactive climate change policies (*The Economist* 2019). Furthermore, just 100 companies are responsible for over 70% of global emissions (Griffin 2017), and many of these companies have invested heavily in "climate denial and obfuscation" (Del Valle 2018).

There is a considerable history between conservative and corporate elites and the climate change denial movement. In part, this is due to extensive lobbying efforts by fossil fuel interests towards conservative policy-makers and think-tanks. Their interests closely align with traditional conservative ideological concerns such as limited government regulation and free enterprise. Although corporate interests may largely be driven by their economic self-interest, conservative interests have adopted their climate change denial strategies to some degree as "a matter of ideological survival…irrespective of economic and environmental common sense" (Collomb 2014). This ideological need has resulted in a situation in which conservative politicians and think-tanks are deeply invested in fossil fuel interests and routinely "provided with the expertise

and the scientific evidence they need to be able to counter arguments by the proponents of environmental regulations" (Collomb 2014). Republicans, elite or otherwise, therefore have been specifically primed to doubt the science of climate change. From the late 1980s onwards, climate change has been deliberately framed as "scientifically uncertain" with an emphasis on the "dire" economic consequences likely to result from any action to prevent it (Nisbet 2009). Climate change denial interests have been "remarkably successful in confusing public opinion…delaying decisive action…[and] shaping the position of the Republican party" (Collomb 2014).

Before the concentrated effort by conservative and fossil fuel interests to discredit climate change science, environmental policy had been "relatively nonpartisan" (Dunlap 2008). In the 1970s, gaps between Democrats and Republicans supporting environmental policy were minimal to modest (Dunlap 2008). However, in the decades following the rise of climate change denial interests, the support for environmental policy among Republicans dwindled. Analyses of public opinion trends attribute this shift to "voters' tendency to follow cues from party leaders and political pundits" (Dunlap 2008). Climate change denial is still prevalent in contemporary Republican rhetoric, and support for environmental regulation has continued to decrease overall among Republicans -- primarily due to fears about economic costs. In 2017, just 36% of Republicans believed that strict environmental regulations were worth the cost; a decade prior, 58% of Republicans believed such regulations were worth the cost (Pew Research 2017b).

Beyond any speculation about the motivation of these bad actors on public opinion, it is well established that individuals in the U.S. self-identifying as Republican or Republican-leaning are less inclined than Democrats to view climate change as real or a serious threat. In 2016 pre-general election surveys, approximately 36% of Americans indicated they cared deeply about

climate issues with the majority of that group being made-up of Democrats -- 72% versus 24% Republican (Pew Research 2016). Despite a marked increase in the visibility of this issue in national media and mainstream politics, these numbers are similar even after almost two years of heavy media exposure during Donald Trump's presidency. In 2018, approximately three quarters of Democrats/Democrat-leaners versus just 26% of Republicans/Republican-leaners believe in anthropogenic climate change and are concerned about its effects (Pew Research 2018c). Among these groups, women are slightly more likely (~55%) to be concerned about climate change but "they come from a range of age and education groups and from all regions of the country" (Pew Research 2016). Indeed, across the board, "[t]here are no consistent differences or only modest differences in people's views about [climate change] by other factors including gender, age, education and people's general knowledge of science topics" (Pew Research 2016).

Instead, an individual's beliefs about climate change, as well as their views about climate scientists, the likely effects of climate change, and effective ways of addressing it "are explained especially by their political orientation and their personal concerns with the issue of climate change" (Pew Research 2016). The predictive power of ideology and political party affiliation as indicators of climate change views is much more significant than even "[t]he effects of science knowledge [which] tend to be modest and inconsistent in predicting people's views about climate change and climate scientists…in comparison with [ideology/party]" (Pew Research 2016). It is also significant that Republicans strongly approving of Trump's job performance are much more likely to not believe climate change is real. Among the approximately 63% of Republicans and Republican-leaners who strongly supported President Trump in 2017, only 39% say there is solid evidence that the Earth is warming, compared to those who approve of Trump

"not so strongly" (65%) and those who disapprove of him (88%) (Pew Research 2017b). Furthermore, compared to Democrats, among whom "there are no more than modest differences by generation on beliefs about [climate change]" (Pew Research 2018d), there are also significant differences in belief between younger and older Republican generations that warrant examination.

It is well established that younger generations, particularly Millennials, are more likely to believe in climate change. Across political party lines, approximately 81% of Millennials, 75% of Gen Xers, 69% of Boomers, and 63% of Silents believe there is evidence of global warming; Millennials "are the only generation in which a clear majority (65%) says both that there is solid evidence of global warming and attribute this primarily to human activity" (Pew Research 2018a). These generational differences are more extreme among those who self-identify as a Republican or Republican-leaner. Approximately 65% of Republicans and leaners younger than 30 say there is solid evidence of climate change compared to just 46% of those over 50. (Pew Research 2017b). Among Republican Millennials, 57% believe there is solid evidence of climate change while "Boomers and Silents remain divided [on the issue]" (Pew Research 2018a). Approximately 36% of Republican Millennials also believe that climate change is caused by human activity instead of natural causes, which is double the percentage of Boomer or older generations who believe this (Pew Research 2018d). Millennial Republicans are also more likely to report that they can recognize some of the effects of climate change in their own communities -- about 45% compared to a third of Boomer and older generations (Pew Research 2018d).

These differences are significant compared to those that exist among Democrats -- about 87% of Millennial Democrats and Democrat-leaners believe humans are responsible for global

warming, while about 73% of Gen Xers, 74% of Boomers, and 72% of Silents believe similarly (Pew Research 2018a). There are also significant generational differences of opinion on climate policy and environmental regulation. Overall, about 59% of Americans believe environmental regulations are worth the costs; only 37% believe environmental regulation will cost jobs or hurt the economy (Pew Research 2017b). Approximately "67% of those younger than 30 say such regulations are worth the cost, compared with 52% of those 50 and older" (Pew Research 2017b). These trends are again more pronounced among Republicans. Overall, only "36% of Republicans say stricter environmental laws are worth the cost, while 58% say they cost too many jobs and hurt the economy" (Pew Research 2017b).

Yet Millennial Republicans are more likely than older generations to "say the federal government is currently doing too little to protect key aspects of the environment such as animals and their habitats [60% vs. 34%], water quality of lakes, rivers and streams [59% vs. 43%] and air quality [49% vs. 29%]…[and] less inclined…to support increased use of fossil fuel energy sources such as offshore drilling [44% vs 75%]" (Pew Research 2018d). However, there is little difference among Republican opinions across generational lines about the economic costs of climate policies -- 44% "say policies aimed at reducing the effects of climate change make no difference for the environment, and around a quarter believe such policies do more harm than good for the environment" (Pew Research 2018d). There are clear discrepancies in likelihood for Republicans to believe in climate change, believe in *anthropogenic* climate change, be concerned about climate change, desire environmental policy to be implemented, and actually support proposed environmental policy. The clear complexity of these opinion formation processes has significant policy implications and warrants careful consideration.

3.1 Situating Research as a Climate Change Communication Issue

Although climate change itself has been well established among scientific and scholarly communities, climate change communication is becoming an increasingly examined, debated, and valued topic. The extremeness of the threat posed by climate change warrants an effective and deliberate approach, and strategic communication is part of this essential process. Research thus far has established that communications and framing language around climate change have a significant impact on how receptive an audience might be to accepting presented information and taking action on it. This is in contrast to previous assumptions that "the scientific facts [will] speak for themselves with their relevance and policy significance interpreted by all audiences in similar ways" (Nisbet 2009). Instead it is increasingly apparent that factors such as political party and ideology serve as a filter through which climate change opinion is formed. Therefore, it is necessary to review the ideological context and framing through which climate information is received and interpreted.

The effort to educate and inform the public about climate change has been hampered by several key misconceptions. First, there is a disparity in perception about the timeline of climate change effects between the scientific community and certain sectors of the public. In the U.S., this is also highly polarized. A 2018 survey showed that approximately 67% of Democrats believe that "global warming will pose a serious threat in their lifetime", while only 18% of Republicans believed similarly (Brenan & Saad 2018). This is in contrast to a scientific consensus that measurable consequences are already occurring. Second, especially in the U.S., there are fears that media sources are highly polarized along ideological lines. Specifically, on the topic of climate change, 69% of Republicans believe that the seriousness of climate change is

being exaggerated by the news media; 64% of Democrats believe the seriousness is being underestimated. As news media becomes "increasingly fragmented" on highly contested topics, there may arise tendencies to avoid more neutral sources of information and seek out one's "preferred ideological source of commentary" (Nisbet 2009). Furthermore, due to the complex interplay between climate, weather, geography, and a myriad of factors that impact and are impacted by climate change, there exists "no single news headline or visual image [that] will catalyze widespread public attention or policy action" (Nisbet 2009). This makes it difficult to formulate a definitive strategy for engaging with the general public as a whole.

The concept of uniquely framing complex topics for an un- or under-informed audience dates back to over 2000 years ago to philosophical debates between Plato and Aristotle on best strategies for public communication (Moser 2009). At the heart of their debates was the inherent tension between conveying pure truth and the effectiveness of messaging; today's scientists, scholars, and communicators face a similar tension with this "global problem that involves less certainty and immediacy than most other, more familiar problems, yet which also has the potential for far graver implications than previous challenges" (Moser 2009). Although communication theory in general emphasizes the importance of unique messaging strategies to target specific audiences, "attention paid to audience needs and differences in communicating climate change has been limited historically" (Moser 2009). Given the disproportionate effect ideology has on climate opinion, it is necessary to consider unique strategies to communicate with individuals on both sides of the political spectrum with wildly differing needs, concerns, and worldviews through which they assess climate information.

It is significant that messaging from liberal/Democrat sources has been problematic and ineffective at convincing Republicans to accept the seriousness of climate change. Some scholars "worry that the news media has moved from an earlier era of false balance to a new phase of overdramatization, one that skeptics can easily exploit to dismiss climate change as a problem" (Nisbet 2009). Numerous studies have established that fear-based approaches led to a sense of fatalism and inaction in general audiences and, specifically in Republicans, tend to reinforce the idea that mainstream media exaggerates the severity of climate change (Nisbet 2009). Overall, fear-based messaging tends to attract wide-spread attention to the issue but results in little action or motivation for action, whereas linking messaging to an "individuals' everyday emotions and concerns in the context of this macro-environmental issue tend to be the most engaging" (O'Neill & Nicholson-Cole 2009). Public opinion polls over the past several decades reveal that "climate change and environmental issues have consistently ranked at the bottom of public concerns… [and o]ut of nine environmental issues, global warming was ranked last" (Brulle et al. 2012). Everyday concerns -- most often jobs and economic security -- tend to dominate these polls and reinforces how linking messaging about climate change to everyday emotions and concerns is an effective strategy.

Prime everyday concerns for self-identified Republicans are typically focused around economic and market concerns. This is evident from statistics demonstrating that, despite a trend of increasing climate change belief among Republicans, the majority say that climate policy will cost too many jobs and hurt the economy (Pew Research 2017b). Yet, as stated, belief in climate change and its severity has overall increased among Republicans despite the substantial concerns about economic impacts of climate change action. Numerous studies have established this trend,

but there has been little inquiry into the mechanism behind it. Ideology and party alignment has traditionally been viewed as the dominant method by which climate change opinion is apparently formed. Given the high association between ideology and climate change belief -- along with a lack of additional factors associated with opinion formation on this highly complex topic -- this assumption is understandable. In a world where mass media and personal technology have resulted in a deluge of information, interpretations, and imperatives that are readily available, it becomes necessary for the average layperson to utilize informational shortcuts to assess complex topics and develop their individual viewpoint. Ideological signaling from elite party sources is an easily understandable and recognizable mechanism to attribute to opinion formation.

Yet traditional views that cues from elite ideological sources are responsible for formation of climate opinion are insufficient in explaining this trend of shifting climate opinions among Republicans. Executive rhetoric on climate denial is currently extremely high, but the tide of Republican public opinion continues to shift, and it is shifting most significantly among the younger generations, specifically among younger Republicans. Even "[c]ollege Republicans say they're struggling to recruit on campus, often because of the climate issue" (Worland 2018). There has been extensive work done on establishing the connections between ideology and climate opinion, the accelerating shifts in climate change opinion among the general population, the generational split overall and particularly among Republicans, the role of economic concerns on climate change opinion, and the effect of elite cues on climate change belief. There has been little analysis into the specifics of how or why climate opinions have or might change over time or in response to specific messaging strategies. This dramatic shift, and its policy implications, warrant further examination.

3.2 Situating Research as a Young Person's Issue

Given the urgency of climate change and the lack of complete understanding of the mechanisms linking party identification and climate change opinion, young Republicans provide an important entry point for valuable research on political socialization, opinion formation, and messaging strategies. Significantly, nearly a quarter of young Republicans under 30 switched to the Democratic party between late 2015 and early 2017 -- a percentage that was "much greater than the share of older Republicans -- or Democrats across all age groups -- who left their party during this period" (Pew Research 2017a). Among younger Republicans, the Democratic Party is rated more trustworthy on addressing climate change (Gray 2016). It is possible that this specific issue is driving these significant demographic shifts, which would represent a dramatic departure from the traditional top-down theoretical models of political socialization and opinion formation. Yet the overwhelming theme of the literature on young people engaging with climate change is that there has simply not been enough research conducted yet, and there has been virtually none specifically on young Republicans and climate change engagement.

Despite a high likelihood of young persons being disproportionately impacted by climate change consequences, their opinions are historically "not prominent in the political, media or cultural discourse on climate change" (Corner et al. 2015). They often have similar everyday concerns as their older counterparts -- competing concerns that are more immediate than climate change such as "the economy, employment opportunities and access to affordable education" (Corner et al. 2015). However, political apathy is particularly high among young people who experience "widespread scepticism about formal political parties, distrust in political figures and a general sense of alienation from mainstream politics" (Corner et al. 2015). This is in contrast to

overall public opinion that governments are primarily responsible for addressing climate change (Corner et al. 2015). This presents an interesting barrier for public policy solutions surrounding climate change when governments "claim that they would be more ambitious on climate change *if* they had the electoral mandate, while the electorate looks to the government for leadership" (Corner et al. 2015). With political participation historically low in young people, their concerns about climate change could go unaddressed due to disparities in governmental responsiveness to generational subpopulations.

There is an oft-repeated misconception that younger people are more aware of climate change and its seriousness due to being -- on the whole -- better and more widely educated and therefore more receptive to climate science and trusting of climate scientists. However, despite overall "high levels of agreement on the anthropogenic nature of climate change…young people still tend to underestimate the level of scientific consensus on climate change" (Corner et al. 2015). Consistently, scientific literacy tends to play a modest role at best in climate change belief compared to ideology across all generations. However, research into the ideological divide on climate change establishes that "young people with 'individualist' and 'hierarchical' worldviews were more likely to be sceptical about climate change…[and] ideology-based polarisation in climate change beliefs [i]s substantially reduced for those…with higher levels of climate science knowledge" (Corner et al. 2015). It has yet to be established whether scientific literacy affects the development of ideological worldview during adolescence or even childhood but, as these views are still forming during this time period, it may represent an ideal period in which climate change opinion among young people can be affected.

Early studies on strategic climate communication for young people -- defined broadly as a group that can encompass young children to young adults under 40 -- suggest that reducing psychological distance between climate change and everyday lives can potentially be effective. This involves framing climate change in terms of potential consequences that will or do manifest in one's own lifetime, typically public health or energy security (Corner et al. 2015). There is still generally minimal research on this subject, and even less on specifically young people, but the results thus far demonstrate inconsistent results at best. Though it is fairly intuitive that reducing temporal distance -- as in framing the effects of climate change within one's personal lifetime -- can incentivize action, it seems corresponding action is largely restricted to personal issues. For instance, a farmer may be incentivized to conserve water due to increased knowledge about how water shortages may affect their own industry, but this does not predict any other environmentally-focused behaviors (McDonald et al. 2015). Furthermore, there is some evidence that "people are more willing to act on climate change when impacts are severe and distant" (McDonald et al. 2015). It is significant that such perceptions and willingness to act are also highly ideologically dependent. For instance, "the effects of personal experience are stronger among…or unique to…political moderates or independents…[while] conservatives tend to express more support for action when exposed to socially near victims, whereas the opposite tends to be true for liberals" (McDonald et al. 2015). The inconsistencies of these results only emphasize the need for individualized climate communication along ideological lines.

Another emerging trend in strategic climate communication is the role of positive versus negative framing. Among young people, one's perceived self-efficacy plays a key role in climate change engagement; a "substantial amount of international research…demonstrates that children

and young people are more likely to understand, care and act on climate change if they can engage with it directly and experientially" (Corner et al. 2015). Lack of political engagement by and with young people, their general mistrust and apathy towards the political process, and their overall pessimism and largely anxiety-based perceptions surrounding climate change represent significant barriers to achieving engagement that creates a sense of self-efficacy. In contrast, some studies suggest hope about the future actually has a negative effect on young people's pro-environmental behavior (Ojala 2012). This occurs primarily in young people who are less worried about climate change impacts on themselves or in general, and is correlated with wishful thinking and perhaps outright denial. Constructive hope -- centered on problem-solving based coping strategies -- is positively linked to pro-environmental behaviors (Ojala 2012). This also has serious implications for strategic messaging about climate change to young people.

It is clearly necessary to fine-tune messaging promoting climate engagement to a young person's emotional connection to the topic. Though there are not any specific studies on differing levels of hope between young Democrats and Republicans, general trends of climate opinions clearly indicate disparate views of the seriousness and potential effects of climate change which may be predictors of hope level. The complexity of this topic and the myriad of factors that can affect receptiveness to messaging concerning it makes climate change communication extremely challenging to perfect. Given the disparity in climate change opinion between Republicans and Democrats, understanding the unique issues and psychological implications of young Republican engagement with climate change may provide important insights into how these worldviews are formed, what types of strategic messaging have the potential to affect or alter these views, and the larger implications for shaping climate change policy going forward.

3.3 Elite Signaling Framework

The high level of association between ideology and climate change belief -- and a lack of other factors associated with climate change opinion formation -- along with concentrated efforts by conservative and corporate elites to influence public opinion on climate change has led to an assumption that signaling from ideological elites is the determining factor by which that opinion is formed. This assumption is understandable given the evidence from several decades of polling suggesting climate change science "skepticism among Republican and conservative elites has led rank-and-file Republicans to follow suit" (Dunlap 2008). Moreover, several decades of research in cognitive, political, and communication science have revealed that individuals discard factual evidence that does not fit into their ideological worldview -- especially if those facts are refuted or countered by ideological elites (Benegal & Scruggs 2018; Kuklinski et al. 2000).

Most political issues are complex and both socially and temporally remote to the average voter (Gilens & Murakawa 2002). Given high information costs of becoming informed on a wide range of policy issues, the average person "cannot be expert in all the fields of policy…[and] will seek assistance from…experts in those fields [who] have the same political goals" (Downs 1957). It is unreasonable to expect an individual voter to be well-informed on every choice they face, so the voter tends to trust political experts and elites -- especially those who seem to align with their ideological preferences -- when forming their own opinions on complex political issues to avoid working through complex information about those issues personally (Gilens & Murakawa 2002). The mechanism involved in this process is a simple heuristic mental shortcut that enables people to "be knowledgeable in their reasoning about political choices without necessarily possessing a large body of knowledge about politics" (Sniderman et al. 1991).

The reasoning behind this theory is heavily invested in the assumption that people are generally rational actors. Rational choice theory originated as an economic model to predict how individuals make complex decisions under risk. Over the years, it has been adapted and applied to the social and biological sciences to explain everything from "governmental decision making, foraging by animals, the behavior of individual or collective economic agents, of social institutions like the criminal justice system or the family, [and] of rats or pigeons in the behavior laboratory" (Herrnstein 1990). By the early 1990s, when elite signaling on climate change was on the rise, rational choice theory was beginning to dominate political science research -- nearly 40% of articles published in *American Political Science Review* were oriented around this theory (Green & Shapiro 1994; Toke 2000). It is not surprising that climate change opinion formation was adopted into this paradigm given the popularity of the rational choice model and the amount of evidence linking climate change opinion and ideology.

In subsequent years, this model has been subjected to numerous critiques yet it has had incredible staying power. Simple observation of reality reveals seemingly irrational behaviors in which people act against their own interest whether by overindulging in self-harmful behaviors or performing altruistic acts for others. Adherents of the rational model have gone to great pains to explain seemingly contradictory behavior displayed by "rational" individuals including loose definitions of utility in a given situation and "by appealing to the undeniable fact that organisms may calculate incorrectly, be ignorant, forget, have limited time horizons, and so on" (Herrnstein 1990). Scholars are just beginning to offer critiques of the model in the context of climate change opinion formation, although the case of young Republican engagement with climate change has not as of yet been offered as a counter example.

Applied to political science, elite signaling as a primary heuristic shortcut among voters has become popularized as a means to maintain the rational voter model, yet it is clear that the idea of a truly rational voter is a myth (Caplan 2006). This is not only seen plainly in examples of individuals voting against their own interests, but also simply because the average voter often has very little political knowledge or expertise. This reality has been used to speculate about some of the more problematic aspects of democracy as a political system. If voters "are deeply ignorant about politics…[t]hey do not know who their representatives are, much less what they do [which] tempts politicians to pursue personal agendas and sell themselves to donors" (Caplan 2006). This is consistent with the criticism mentioned earlier of conservative interests being over reliant on donor money from the fossil fuel industry in the case of climate change.

Yet adherents of the rational choice model would argue that despite widespread ignorance on political issues among the general population, the aggregate of collective opinions respond in predictable ways to changes in social and political conditions (Page & Shapiro 1992). The logic behind this rationale is that opinions of those poorly-informed (but respondent to elite cues) on a particular issue tend to be fairly close to the opinions of those who are well-informed on that same issue. An analysis of several decades of presidential voting patterns found only "a very modest difference in party preference…due to the failures of heuristic decision processes" (Bartels 2002; Gilens & Murakawa 2002). Additional analyses revealed that none of the studied elections would have had different outcomes if voters were "fully informed"; similar analyses of voting on policy issues demonstrated that there were minimal changes in policy preference between a hypothetical well-informed electorate and the public's actual preferences (Althaus 1998; Bartels 2002; Gilens & Murakawa 2002).

The extent to which elite cue signaling affects political reasoning can most certainly vary. First, it is far more likely that a voter will look to elite cues when evaluating issues that are particularly complex or technically difficult to understand versus issues that are more readily comprehensible or more obviously aligned with familiar values. For example, in studies on voter response to highly technical insurance initiatives, "poorly informed voters who had elite cues to draw on were able to emulate the voting behavior of their better-informed peers" (Gilens & Murakawa 2002). Climate change can most certainly be regarded as a highly technical issue, and it is significant that education seems to play such a minimal role in opinion formation on this issue as compared to ideology. The complexity of climate change could have certainly created a situation in which individuals are primed to rely on elite cues to form their opinion.

Another factor that plays a role in how likely elite cues play a role in decision-making is the level of personal involvement a voter has in a particular issue. Personal stake in an issue "makes people less likely to rely on source cues and more likely to consider argument strength" (Gilens & Murakawa 2002; Hample 1985; Morley 1987; Petty & Cacioppo 1986). However, as noted above, the average citizen is usually personally remote from the direct effect of any single policy (Gilens & Murakawa 2002). This reinforces a "rationally ignorant" voter theory wherein a voter is free to rely on elite cues because "[o]ne vote has so small a probability of affecting electoral outcomes that a realistic egoist pays no attention to politics" (Caplan 2006). This has tremendous implications for climate change politics. The worst of its consequences will be experienced far later than the actions taken to ensure its inevitability. This fits with psychological implications of rational choice theory, which consistently predicts individuals place a "very high value on the near future and a very low value on the distant future" (Orlove 2010).

Finally, voters who are politically aware or active tend to be less receptive to messaging inconsistent with their ideology (Gilens & Murakawa 2002; Zaller 1992). This is consistent with findings that individuals "tend to seek out and assess evidence in biased patterns that reinforce the positions that they, or those who share their ideological predispositions, already hold" (Kahan 2013). This tendency is theorized to be "intensified by dogmatism, aversion to complexity, and like traits that correlate with political conservativism and…make[s] politically conservative individuals distinctively resistant to revising their beliefs based on empirical evidence" (Kahan 2013). This type of motivated reasoning is a ready explanation for the historical trends seen in Republican engagement with climate change. This is a highly complex problem with solutions that are often contrary to traditional conservative values, and Republican elite signaling using this type of rhetoric has been incredibly high for the past several decades. Given these facts, it is unsurprising that elite signaling has traditionally been considered the dominant mechanism by which climate change beliefs are formed among Republicans.

And yet the statistics presented earlier clearly show that climate change beliefs among Republicans are shifting in ways that suggest elite cues are not sufficient to explain their decision-making process. Of course this process is complex enough that there is no single factor we could expect to entirely account for political opinion, but this divergence is especially strange when the elite rhetoric on this issue has never been higher, and ideological solidarity is occurring on many other issues such as gun rights, abortion access, and immigration. Although this divergence has been noted by many scholars, surprisingly little investigation for its possible causes has been suggested. Particularly for young Republicans that are disportionately changing their viewpoints, an alternative explanation is needed.

3.4 Peer Norm-Setting Framework

Although elite signaling continues to be a common explanation for opinion formation, new studies are challenging this traditional view. It is unreasonable to prove when individuals are using heuristic shortcuts so these challenges instead arise from examples of situations in which they do not appear to be using these shortcuts. Leeper & Slothuus, arguing that too little attention has been paid to partisan psychology, outline the more obvious short-comings of the top-down approach to political opinion formation (2014). Individuals rarely belong only to a political party and not to any other identity group (Klar 2013). This reality makes assigning causal factors in opinion formation incredibly complex. Studies have shown that threatened identities trump the influence of other identities, even when primed by elite signaling (Klar 2013; Leeper & Slothuus 2014). For instance, the influence of membership in an identity group such as parenthood, racial minority, or socioeconomic status can override even elite signaling on issues pertinent to the threatened identity (Klar 2013). There has been comparatively little work on opinion formation within competitive environments or when individuals receive information framed in many alternative ways (Chong & Druckman 2007).

One interesting pattern that has emerged is that individuals are more willing to engage with complexity when they know "they will be held accountable for their decisions...particularly when they anticipate interactions with dissimilar others" (Leeper & Slothuus 2014; Tetlock 1983). Accountability "decrease[s] dependence on peripheral cues and increase[s] reliance on argument content" (Chaiken 1980; Leeper & Slothuus 2014). This phenomenon has been suggested to be motivated by fundamental social needs such as "belongingness" (Baumeister & Leary 1995) and/or a desire to be "a good citizen" (Groenendyk 2013). Individuals primed to

consider their civic duty when responding to surveys or voting on policy issues tend to rely less on partisan reasoning and "engage in greater information seeking, think more about candidates' positions, and reason in a more evenhanded way" (Bolsen et al. 2013; Kam 2007; Leeper & Slothuus 2014; Mullinix 2017). This may be promising for efforts to garner Republican support for environmental policy by appealing to their desire to be good citizens or neighbors instead of an abstract concern for the environment. Some early studies on moral framing of environmental concern also suggest differences in liberal and conservative attitudes disappear when the issue is explicitly linked to traditional values such as civic duty and patriotism (Wolsko et al. 2016), and conservatives are generally more responsive to concerns for socially near victims (McDonald et al. 2015), such as their neighbors and immediate peers.

This complex interplay between competing values, identities, and framing techniques is not easily understood. At this stage, this research is focused broadly on the force of social need in opinion formation including a desire of belongingness, a fear of accountability, and/or a sense of duty to socially near individuals. There has been surprisingly little research into the tension between elite and social forces in opinion-making relating to climate change. We do know that social pressure is a powerful force in opinion formation on many pressing social issues including climate change (Moussaïd et al. 2013). It is also closely tied with ideological belief as individuals who share similar extreme opinions such as climate change denial (Jasny et al. 2015) and racial prejudices "tend to strengthen their judgment and confidence after interacting with one another" (Moussaïd et al. 2013). The echo chamber phenomenon has particularly severe consequences for climate change policies if those who do not support them speak only with each other. However, rarely do individuals exist in completely homogeneous environments. Although

the degree to which an individual experiences ideological diversity in their environment will obviously vary, they are far more likely than not to be exposed to some level of diversity of thought and to receive competing framing messages from various shared identity groups.

This research project is interested in exploring the effect of differing levels of competing ideological pressure, specifically social pressure. It seems obvious that social pressure could be a potential force behind climate opinion and behavior, particularly for young people. Positive peer pressure has been found to reduce disruptive activity of children in classroom settings (Smith & Fowler 1984), reduce underage drinking in college students (Goode et al. 2014), reduce negative racial stereotypes (Sinclair & Kunda 1999), and increase political participation in young adults (Quintelier et al. 2011). Across the board, voting tends to be contagious among households and peer groups (Glynn et al. 2009; Nickerson 2008). The dominant theme in literature about this peer influence phenomenon is its relation to a deep seated social need to belong in a social group. Conforming to the perceived or actual behavior among peers assures an individual of their place within the group, while the failure to adhere to group norms risks social exclusion. This impulse is seen in the desire for "belongingness" that motivates willingness to engage with complexity when one is held accountable to their peers regardless of ideology (Baumeister & Leary 1995).

Many behaviors are subjected to competing signaling influences including peer and elite sources of messaging, and there is considerable difficulty in isolating the effects of these sources on any one individual behavior. Ideological group membership studies are clearly dominated by the role of elite signaling on opinion formation, and people tend to socially engage in ideological echo chambers as well. Pre-existing beliefs are reinforced by these social interactions (Jasny et al. 2015) and are resistant to change when confronted by ideas too initially dissimilar

(Hegselmann & Krause 2002; Lorenz 2007; Moussaïd et al. 2013). This type of confirmation bias is difficult to overcome, and it becomes more daunting to counter when ideological group membership is a dominant influence. However, identity-based group membership is rarely so simple. Individuals tend to exist within a number of socially based groups that influence their attitudes, behaviors, and goals (Fiske 2010; Shah 2005; Stok 2014). As stated, it is a challenge to isolate the effects of one identity over another, but there are situations in which membership within a unique identity group can override the influence of ideological group membership even primed by elite signaling (Klar 2013; Leeper & Slothuus 2014). It is possible there are situations in which peer influence originating from a unique identity group -- particularly a threatened identity group such as young people in the face of long-term climate change consequences -- could override elite influence on ideologically charged issues such as climate change.

Peer-to-peer pressure "may be the single most neglected lever of change" (Katzenbach & Khan 2010), but there is a growing body of literature attempting to link peer norm-setting and formation of climate change belief and pro-environmental behaviors. Here it is important to note one of the difficulties in assessing the role of peer influence: individuals rarely tend to attribute behavioral changes to it (McDonald & Crandall 2015). Campaigns promoting energy-saving in households were most effective when individuals were primed to join neighbors in saving energy (compared to money or the environment), but those responding to this signaling technique rated it the least influential in their decision-making process (McDonald & Crandall 2015; Nolan et al. 2008). Individuals also respond more readily to descriptive versus injunctive peer norm signals (Gerber & Rogers 2009) on pro-environmental behaviors such as recycling (Cialdini 2003), reusing hotel towels (Goldstein et al. 2008), or refraining from littering (Cialdini et al. 1990).

More recent studies have consistently demonstrated "social norms significantly influence perceptions of climate change" (Renn 2011; Swim et al. 2009; van der Linden 2015). Individuals who perceive that others recognize the risk of climate change and are taking action to prevent it are more likely to internalize climate change as an individual risk and perceive action is expected of them as well. Establishing causal links is still necessary, but some early studies suggest direct social confrontation over energy-consuming behavior is correlated with a higher level of future environmentally-motivated behaviors (Steentjes et al. 2017; Swim & Bloodhart 2013); while witnessing an environmental activist fail to confront anti-environmentalist behavior is correlated with a lower level of future environmentally-motivated behaviors (Czopp 2013; Steentjes et al. 2017). There is clearly much work left to be done on proving causal inference, but these findings are important first steps in creating a social norms framework for categorizing climate change opinion formation.

It is interesting that these works have largely treated subjects as a politically monolithic group. Given the high ideological polarization of this topic, it is essential to pay special attention to how political affiliation affects peer signaling results. It is possible that peer influence may have differing levels of effect on Republicans and Democrats. If influence effects are similar across party lines, this information adds to our understanding of the interaction between ideological and competing social identities and influences. If the effects are not sufficient to overcome the effect of ideology, this information should be factored into future campaigns capitalizing on social norm-setting methods. This research project intends to build on existing work by testing differences in support for climate-focused policy among distinct demographics living in areas where they may experience varying levels of peer influence on climate change.

4.1 Methodology

Determining the process of climate change opinion formation has proven daunting as there is a distinct lack of research on this topic in general and especially as it relates to young people. The predominant theme in existing literature has consistently been that climate change opinion is ideologically determined. There has been little work done thus far on examining young people's climate beliefs by party specifically, and the analysis that has been performed on young people in general has mainly treated them as a politically monolithic group. Pew Research data has provided the evidence for a disproportionately accelerating trend of shifting belief in climate change among younger Republicans, but has not proposed any mechanism by which to explain this trend. This paper seeks to identify this mechanism so that it may be utilized going forward to potentially move the needle on gaining the much needed public support for climate change policy to be implemented.

In order to identify this elusive mechanism, this paper will simultaneously test multiple hypotheses that may shed light on the process of climate opinion formation. First, it may prove helpful to reexamine an obvious explanation for why young Republicans are splitting from their party on climate change. The role of education on climate change opinion is traditionally seen as modest at best, yet it has not been studied within the context of young Democrats versus young Republicans. There also exists an obvious correlation between belief in climate change and a lack of support for Donald Trump, but it has not been assessed directly for young Republicans. There may be trends specific to these demographics that have yet to be uncovered. Additionally, it may be possible that young Republicans experience more peer/social than party pressure on climate change belief, which could sufficiently negate the effect of elite signaling.

At this stage in the process, this project intends to survey this very general reasoning for clues on a more specific mechanism. The significant lack of research on this topic presents many challenges for assessing this issue in a meaningful way. Public opinion survey data will be used as a window into potential motivating factors in climate change opinion formation; however, it cannot be overstated that making conclusions about the mechanisms behind opinion formation is impossible at this point in the research process. Opinion polls provide a useful snapshot of how general public opinion is trending at a given time, but linking causation between any independent factor and opinion is nebulous at best. A more detailed explanation of the challenges inherent in using survey data is included in the discussion section of this paper, followed by a suggestion of how to better assess the targeted mechanism in future research. For now, given the limitations of this research project, public opinion data will be utilized to test the following five hypotheses for each generation of both parties to further refine the parameters of future research questions.

[H_1] *Ideology plays a significant role in support for climate-focused policy. Individuals who self-identify as Republican are less likely to support climate-focused policy.*

[H_2] *Age plays a significant role in support for climate-focused policy. Younger individuals are more likely to support climate-focused policy.*

[H_3] *Education plays a minimal or inconsistent role in support for climate-focused policy.*

[H_4] *Support for President Trump plays a significant role in support for climate-focused policy. Individuals who strongly support Trump are less likely to support climate-focused policy.*

[H_5] *Living in a strong Democrat congressional district plays a significant role in support for climate-focused policy. Individuals living in Democrat populated districts are more likely to support climate-focused policy.*

A baseline of climate change opinion trends must first be established within a specific dataset. The Cooperative Congressional Election Study (CCES) is an acceptable starting point for analysis. This nationally representative survey of adults in the U.S. has been conducted yearly since 2005 and contains questions on a diverse range of topics, including climate change, environmental regulations, and many other relevant factors. For the purpose of this research project, which is primarily focused on public buy-in for climate-related *policy*, support for *policy* will be assessed. Specifically, opinion on four policies is considered: 1) giving the EPA power to regulate carbon dioxide emissions (CC18_415a), 2) lowering the required fuel efficiency for the average automobile from 35 mpg to 25 mpg (CC18_415b), 3) requiring that each state use a minimum amount of renewable fuels (wind, solar, and hydroelectric) in the generation of electricity even if electricity prices increase (CC18_415c), and 4) strengthening the EPA enforcement of the Clean Air Act and Clean Water Act even if it costs U.S. jobs (CC18_415d). Support is assessed on a simple scale from support [1] to oppose [2].

The inclusion of four different but similarly focused policies allows for some measure of robustness to ensure that whatever trends may be discovered can be projected across a range of policy options and not limited to a single issue. Furthermore, questions 3 and 4 specifically ask about climate-focused policies that pose economic risks, which may be particularly relevant for the targeted demographic. Pew Research data has been extensively relied on for background data on these generational trends; therefore, the commonly accepted generational boundaries used in that data will be used here to define demographic subdivisions. Millennial Republicans (defined here as those born between 1981-2000) will be compared with older Republicans (defined as Generation X [born between 1965-1980], Boomers [born between 1946-1964], and Silents [born

between 1928-1945]); Republicans in each generational category will be compared to their respective Democrat counterparts. The limitations of using such arbitrary generational bounds are explored more in the discussion section of this paper; however, disaggregating data in this manner allows for the examination of trends that may be overlooked when subpopulations are aggregated into monolithic groups (Yi 2020).

To test the first hypothesis [H_1], self-identified political/ideological affiliation rated as Democrat [1] or Republican [2] (CC18_421a) will be treated as the independent variable (IV), and its effect on support for climate-focused policy -- operationalized as the dependent variable (DV) via the four policy questions mentioned previously -- is tested. It is expected that support for climate-focused policies will decrease as individuals shift from Democrat to Republican as has been established in numerous other studies (Pew Research 2018c). To test the second hypothesis [H_2], birth year (birthyr) will be treated as the independent variable (IV), and its effect on support for the climate-focused policies -- operationalized as the dependent variable (DV) -- is tested. It is expected that support for climate-focused policies will increase as age shifts from older to younger as has been established in numerous other studies (Pew Research 2018d).

Although education is thought to play a modest and/or inconsistent role in climate change belief (Pew Research 2016), it is possible that young Republicans may be unique in this regard. To test the third hypothesis [H_3], education level (IV) -- ranging from "did not complete high school" [1] to "postgraduate degree" [6] (educ) -- is tested for effect on support for climate-focused policies (DV) to provide a starting point to reexamine the role of education in climate change belief. It is expected that level of education will play a modest or inconsistent role in support for climate-focused policies. Additionally, it is possible that support for Donald Trump

may not play as significant a role in support for climate-focused policies among young Republicans. To test the fourth hypothesis [H_4], support for Trump (IV) -- ranging from "strongly approve" [1] to "strongly disapprove" [4] (CC18_308a) -- is tested for effect on support for the climate-focused policies (DV). It is expected that support for Trump will play a significant role in support for climate-focused policies as has been established (Pew Research 2017).

The competitiveness of congressional races in the respondent's district may be useful in assessing the extent to which social norms play a role in formation of climate opinion. Young Republicans living in districts considered safe Democrat, lean Democrat, or competitive may experience and perhaps respond to social pressure on climate change more than those living in lean/safe Republicn districts. This hypothesis is a starting point for a deeper examination of the role social norms play in climate opinion that will continue to evolve as this research progresses. To test the fifth hypothesis [H_5], district competitiveness (IV) -- ranging from "safe Democrat" [1] to "safe Republican" [5] (CompRaitng) -- is tested for effect on support for the climate-focused policies (DV) to assess if there are significant trends in support for these policies among young Republicans living in districts of different levels of ideological competitiveness.

As this research progresses, these various factors can be analyzed to determine their effect on climate change opinion between generations and parties. One or more may provide insight into how climate change belief is formed and possibly how to shift it in support of policy. The relative scarcity of data on the relationships between generation, party, and climate opinion makes this inquiry potentially quite valuable. However, additional analysis will be necessary to more firmly understand this process once these baselines have been established.

4.2 Overview of Data

The 2018 CCES survey data includes unique responses from 60,000 individuals. Of these respondents, approximately 33% identified as Democrat, 25% identified as Republican, 24% identified as Independent, and 18% identified as other, skipped the ideological identity question or were not asked it. The average respondent age is 48. Among Republicans, the mean age is 54; among Democrats, it is 48. Responses on relevant questions were recorded from 2904 Millennial Republicans with mean age of 29; 6327 Millennial Democrats with mean age of 29; 3451 Gen X Republicans with mean age of 46; 4987 Gen X Democrats with mean age of 45; 6047 Boomer Republicans with mean age of 62; 6600 Boomer Democrats with mean age of 62; 2259 Silents Republicans with mean age of 78; and 1687 Silents Democrats with mean age of 78.

The following tables provide a breakdown of the sample's demographic information for comparison with population statistics. Although the sample is similar to the population in many relevant factors, several key differences are noted. In general, women make up a disportionate percentage of respondents. This is especially true for female Millennial Republican respondents who make up the majority of Millennial women and Millennial Republicans here despite being minorities in both sub-demographic populations (Kosoff 2018; Pew Research 2018b). White respondents are slightly over-represented, especially among Republicans; education level among respondents from both parties is lower than the general population; registered voters among both parties is far higher than the population; and sample regional distribution is also different from population distribution (Edsall 2019; Kabaservice 2019; Pew Research 2015; Pew Research 2018b). Due to these discrepancies, it may not be possible to validate any conclusions about this sample for the larger population. Such limitations are further discussed later in this paper.

Table 1. *Republican Sample Demographic Characteristics*

	Millennials	Generation X	Boomers	Silents
Male	37%	47%	47%	60%
Female	63%	53%	53%	40%
White	83%	85%	94%	96%
Black or African-American	2%	2%	1%	0%
Hispanic or Latino	8%	8%	3%	2%
Asian or Asian-American	4%	2%	1%	0%
Native American	1%	1%	1%	0%
Middle Eastern	0%	0%	0%	0%
Mixed Race	2%	1%	1%	0%
Northeast	18%	17%	16%	13%
Midwest	23%	23%	24%	20%
South	41%	42%	41%	42%
West	18%	18%	19%	25%
Yes	88%	94%	95%	99%
No	10%	6%	4%	1%
Don't Know	2%	1%	0%	0%
Did not complete high school	2%	3%	3%	3%
High school graduate	20%	26%	38%	31%
Some college, but no degree	23%	20%	19%	21%
2-year college degree	11%	12%	12%	8%
4-year college degree	32%	27%	18%	20%
Postgraduate degree	11%	12%	10%	17%

Table 2. *Democrat Sample Demographic Characteristics*

	Millennials	Generation X	Boomers	Silents
Male	31%	37%	37%	47%
Female	68%	63%	63%	53%
White	57%	58%	76%	87%
Black or African-American	15%	22%	15%	8%
Hispanic or Latino	15%	13%	5%	3%
Asian or Asian-American	8%	3%	1%	0%
Native American	0%	1%	1%	0%
Middle Eastern	0%	0%	0%	0%
Mixed Race	4%	3%	1%	1%
Northeast	21%	19%	20%	21%
Midwest	23%	23%	24%	19%
South	34%	37%	33%	30%
West	22%	21%	22%	30%
Yes	90%	94%	96%	100%
No	9%	5%	4%	0%
Don't Know	1%	1%	0%	0%
Did not complete high school	2%	2%	3%	0%
High school graduate	14%	19%	29%	25%
Some college, but no degree	23%	20%	18%	27%
2-year college degree	9%	12%	11%	4%
4-year college degree	36%	30%	22%	23%
Postgraduate degree	16%	18%	18%	22%

4.3a Effect of Party Preference on Support for Climate-Focused Policies

[H_1]: *Ideology plays a significant role in support for climate-focused policy. Individuals who self-identify as Republican are less likely to support climate-focused policy.*

The effect of party preference on support for the four chosen climate-focused policy questions was determined by slope. Linear regression was not possible in this case due to the limited range of both questions used. Instead, slope was used to determine the directionality of the impact of party preference on support for the climate-focused policies among each of the generational subcategories. A table outlining these results is below (Table 3), and graphical representations of the relationship between party preference and policy support is found in Appendix I.

The first hypothesis [H_1] was confirmed for all generations. Positive slopes for questions 1 (regulation of CO_2 emissions), 3 (imposing renewable energy standards), and 4 (allowing the EPA to enforce the Clean Air and Clean Water Acts), and negative slope for question 2 (lowering fuel efficiency standards) indicates that, as party affiliation moves from Democrat to Republican, support for these climate-focused policies decreases.

Table 3. *Effect of Party Preference on Support for Climate-Focused Policies*

	CO_2 Emissions	Fuel Efficiency	Renewable Energy	Clean Air/Water Act Enforcement
Millennials	2.899	-11.13	3.142	2.373
Generation X	2.244	-7.854	2.560	1.907
Boomers	1.7792	-3.957	2.022	1.5488
Silents	1.544	-3.543	1.767	1.3567

4.3b Effect of Age on Support for Climate-Focused Policies

[H_2]: *Age plays a significant role in support for climate-focused policy. Younger individuals are more likely to support climate-focused policy.*

The effect of age on support for the four chosen climate-focused policy questions for both parties was determined by linear regression. A table outlining results for both Republicans and Democrats on each policy question is below (Table 4), and graphical representations of the relationship between age and policy support is found in Appendix II.

The second hypothesis [H_2] was confirmed for each policy among Republicans, and for policy 1 and 2 for Democrats. Regression results for Republicans are estimated at a P-Value <0.001 for every policy issue. These results indicate that, as age decreases, support for climate-focused policies increases.

Table 4. *Effect of Age on Support for Climate-Focused Policies*

Republican Age Effect on Support CO2 Emissions Regulation

	Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	12.26	11.13 – 13.39	**<0.001**
Age	-0.01	-0.01 – -0.00	**<0.001**
Observations	9		
R^2 / R^2 adjusted	0.986 / 0.984		

Republican Age Effect on Support Fuel Efficiency Requirements

	Support Fuel Effciency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	-3.61	-5.41 – -1.80	**0.002**
Age	0.00	0.00 – 0.00	**<0.001**
Observations	9		
R^2 / R^2 adjusted	0.868 / 0.849		

Republican Age Effect on Support Renewable Energy Standards

	Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	8.97	7.55 – 10.40	**<0.001**
Age	-0.00	-0.00 – -0.00	**<0.001**
Observations	9		
R^2 / R^2 adjusted	0.955 / 0.949		

Republican Age Effect on Support Clean Air & Water Acts Enforcement

	Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	12.25	10.86 – 13.65	**<0.001**
Age	-0.01	-0.01 – -0.00	**<0.001**
Observations	9		
R^2 / R^2 adjusted	0.979 / 0.976		

Democrat Age Effect on Support CO2 Emissions Regulation

	Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	-0.93	-2.16 – 0.31	0.120
Age	0.00	0.00 – 0.00	**0.006**
Observations	9		
R^2 / R^2 adjusted	0.683 / 0.637		

Democrat Age Effect on Support Fuel Efficiency Requirements

	Support Fuel Effciency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	5.74	3.94 – 7.54	**<0.001**
Age	-0.00	-0.00 – -0.00	**0.001**
Observations	9		
R^2 / R^2 adjusted	0.797 / 0.768		

Democrat Age Effect on Support Renewable Energy Standards

	Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.60	-0.68 – 3.89	0.141
Age	-0.00	-0.00 – 0.00	0.683
Observations	9		
R^2 / R^2 adjusted	0.025 / -0.114		

Democrat Age Effect on Support Clean Air & Water Acts Enforcement

	Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	0.21	-1.84 – 2.26	0.818
Age	0.00	-0.00 – 0.00	0.309
Observations	9		
R^2 / R^2 adjusted	0.147 / 0.025		

4.3c Effects of Education on Support for Climate-Focused Policies

[H_3]: *Education plays a minimal or inconsistent role in support for climate-focused policy.*

The effect of education on support for the four chosen climate-focused policy questions among each generational subcategory was determined by linear regression. A table outlining results for Republicans and Democrats of each generation on all four policy questions is below (Tables 5-8), and graphical representations of the relationship between education and policy support is found in Appendix III.

The third hypothesis [H_3] was confirmed for Republicans. Regression results demonstrate an inconsistent or minimal education effect on policy support for every generation. There was no education effect on policy support for the majority of calculations with the following exceptions which indicate that, as education *increases*, policy support *decreases*: Generation X on policy 1 (P-Value 0.013), 3 (P-Value 0.015), and 4 (P-Value 0.005); Boomers on policy 1 (P-Value 0.023); and Silents on policy 1 (P-Value 0.002) and 2 (P-Value 0.004).

However, the third hypothesis [H_3] was not confirmed for Democrats. Regression results indicate that, as education *increases*, policy support *increases* for every generation except for Silents on policy 1 (P-Value 0.776) and 2 (P-Value 0.263).

Table 5. *Millennials* - *Effect of Education on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.39	1.27 – 1.50	**<0.001**
Education	0.02	-0.01 – 0.05	0.191
Observations	6		
R^2 / R^2 adjusted	0.382 / 0.228		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.65	1.60 – 1.70	**<0.001**
Education	-0.00	-0.02 – 0.01	0.352
Observations	6		
R^2 / R^2 adjusted	0.217 / 0.021		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.46	1.41 – 1.50	**<0.001**
Education	0.01	-0.00 – 0.02	0.089
Observations	6		
R^2 / R^2 adjusted	0.556 / 0.446		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.50	1.41 – 1.59	**<0.001**
Education	0.02	-0.01 – 0.04	0.098
Observations	6		
R^2 / R^2 adjusted	0.535 / 0.419		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.25	1.21 – 1.29	**<0.001**
Education	-0.03	-0.04 – -0.02	**0.001**
Observations	6		
R^2 / R^2 adjusted	0.953 / 0.941		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.41	1.30 – 1.51	**<0.001**
Education	0.07	0.05 – 0.10	**0.001**
Observations	6		
R^2 / R^2 adjusted	0.938 / 0.922		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.39	1.32 – 1.46	**<0.001**
Education	-0.05	-0.07 – -0.03	**0.002**
Observations	6		
R^2 / R^2 adjusted	0.935 / 0.919		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.33	1.27 – 1.40	**<0.001**
Education	-0.04	-0.06 – -0.03	**0.002**
Observations	6		
R^2 / R^2 adjusted	0.936 / 0.920		

Table 6. *Generation X - Effect of Education on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.45	1.37 – 1.53	**<0.001**
Education	0.03	0.01 – 0.05	**0.013**
Observations	6		
R^2 / R^2 adjusted	0.817 / 0.771		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.60	1.53 – 1.66	**<0.001**
Education	-0.00	-0.02 – 0.01	0.724
Observations	6		
R^2 / R^2 adjusted	0.035 / -0.207		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.49	1.41 – 1.56	**<0.001**
Education	0.03	0.01 – 0.05	**0.015**
Observations	6		
R^2 / R^2 adjusted	0.805 / 0.757		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.64	1.61 – 1.67	**<0.001**
Education	0.02	0.01 – 0.02	**0.005**
Observations	6		
R^2 / R^2 adjusted	0.886 / 0.858		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.21	1.15 – 1.28	**<0.001**
Education	-0.02	-0.04 – -0.00	**0.027**
Observations	6		
R^2 / R^2 adjusted	0.745 / 0.681		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.48	1.42 – 1.55	**<0.001**
Education	0.06	0.04 – 0.07	**0.001**
Observations	6		
R^2 / R^2 adjusted	0.960 / 0.950		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.40	1.32 – 1.48	**<0.001**
Education	-0.05	-0.07 – -0.03	**0.003**
Observations	6		
R^2 / R^2 adjusted	0.909 / 0.887		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.38	1.32 – 1.45	**<0.001**
Education	-0.05	-0.07 – -0.04	**0.001**
Observations	6		
R^2 / R^2 adjusted	0.951 / 0.939		

Table 7. *<u>Boomers</u> - Effect of Education on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.54	1.43 – 1.66	**<0.001**
Education	0.04	0.01 – 0.07	**0.023**
Observations	6		
R^2 / R^2 adjusted	0.764 / 0.704		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.53	1.43 – 1.62	**<0.001**
Education	0.00	-0.02 – 0.03	0.758
Observations	6		
R^2 / R^2 adjusted	0.026 / -0.217		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.64	1.51 – 1.77	**<0.001**
Education	0.01	-0.02 – 0.05	0.287
Observations	6		
R^2 / R^2 adjusted	0.273 / 0.092		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.75	1.67 – 1.83	**<0.001**
Education	0.01	-0.01 – 0.04	0.116
Observations	6		
R^2 / R^2 adjusted	0.500 / 0.375		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.18	1.15 – 1.21	**<0.001**
Education	-0.02	-0.03 – -0.01	**0.002**
Observations	6		
R^2 / R^2 adjusted	0.929 / 0.912		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.62	1.55 – 1.69	**<0.001**
Education	0.05	0.03 – 0.07	**0.002**
Observations	6		
R^2 / R^2 adjusted	0.932 / 0.915		

Democrat Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.31	1.26 – 1.35	**<0.001**
Education	-0.04	-0.05 – -0.03	**0.001**
Observations	6		
R^2 / R^2 adjusted	0.954 / 0.942		

Democrat Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.27	1.17 – 1.37	**<0.001**
Education	-0.04	-0.06 – -0.01	**0.018**
Observations	6		
R^2 / R^2 adjusted	0.789 / 0.737		

Table 8. *Silents - Effect of Education on Support for Climate-Focused Policies*

Republican Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.55	1.47 – 1.62	**<0.001**
Education	0.05	0.03 – 0.07	**0.002**
Observations	6		
R^2 / R^2 adjusted	0.929 / 0.912		

Republican Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.60	1.56 – 1.63	**<0.001**
Education	-0.02	-0.03 – -0.01	**0.004**
Observations	6		
R^2 / R^2 adjusted	0.901 / 0.876		

Republican Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.62	1.48 – 1.77	**<0.001**
Education	0.03	-0.01 – 0.06	0.133
Observations	6		
R^2 / R^2 adjusted	0.470 / 0.337		

Republican Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.78	1.70 – 1.86	**<0.001**
Education	0.02	-0.00 – 0.04	0.085
Observations	6		
R^2 / R^2 adjusted	0.564 / 0.455		

Democrat Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.08	0.99 – 1.17	**<0.001**
Education	-0.00	-0.03 – 0.02	0.776
Observations	6		
R^2 / R^2 adjusted	0.023 / -0.222		

Democrat Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.72	1.55 – 1.88	**<0.001**
Education	0.02	-0.02 – 0.06	0.263
Observations	6		
R^2 / R^2 adjusted	0.298 / 0.122		

Democrat Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.32	1.23 – 1.40	**<0.001**
Education	-0.04	-0.06 – -0.02	**0.006**
Observations	6		
R^2 / R^2 adjusted	0.878 / 0.848		

Democrat Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.26	1.19 – 1.34	**<0.001**
Education	-0.04	-0.06 – -0.02	**0.005**
Observations	6		
R^2 / R^2 adjusted	0.888 / 0.860		

4.3d Effect of Trump Approval on Support for Climate-Focused Policies

[H_4]: *Support for President Trump plays a significant role in support for climate-focused policy. Individuals who strongly support Trump are less likely to support climate-focused policy.*

The effect of support for Donald Trump on support for the four chosen climate-focused policy questions for each generational subcategory was determined by linear regression. A table outlining results for Republicans and Democrats of each generation on each policy question is below (Tables 9-12), and graphical representations of the relationship between support for Donald Trump and policy support is found in Appendix IV.

The fourth hypothesis [H_4] was confirmed for Republicans. Regression results indicate that, as support for Trump *increases*, support for policy *decreases* for all generations with the following exception: Generation X on policy 2 (P-Value 0.183).

The fourth hypothesis [H_4] was not confirmed for Democrats. Regression results show no correlation between Trump support and policy support for any generation with the following exceptions which indicate that, as support for Trump *increases*, support for policy *decreases*: Millennials on policy 2 (P-Value 0.029) and 4 (P-Value 0.014); Generation X on policy 1 (P-Value 0.002); Boomers on policy 1 (P-Value 0.018), 2 (P-Value 0.04), and 4 (P-Value 0.029); and Silents on policy 3 (P-Value 0.006).

Table 9. *Millennials* - *Effect of Trump Approval on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.66	1.56 – 1.77	**<0.001**
Trump Approval	-0.11	-0.15 – -0.07	**0.006**
Observations	4		
R^2 / R^2 adjusted	0.987 / 0.981		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.51	1.45 – 1.57	**<0.001**
Trump Approval	0.06	0.04 – 0.08	**0.006**
Observations	4		
R^2 / R^2 adjusted	0.987 / 0.981		

Republican Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.65	1.60 – 1.70	**<0.001**
Trump Approval	-0.09	-0.11 – -0.07	**0.003**
Observations	4		
R^2 / R^2 adjusted	0.995 / 0.992		

Republican Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.81	1.64 – 1.98	**<0.001**
Trump Approval	-0.13	-0.19 – -0.07	**0.012**
Observations	4		
R^2 / R^2 adjusted	0.977 / 0.966		

Democrat Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.28	1.06 – 1.49	**0.002**
Trump Approval	-0.04	-0.12 – 0.04	0.157
Observations	4		
R^2 / R^2 adjusted	0.711 / 0.566		

Democrat Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.34	1.15 – 1.54	**0.001**
Trump Approval	0.10	0.02 – 0.17	**0.029**
Observations	4		
R^2 / R^2 adjusted	0.943 / 0.915		

Democrat Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.33	1.08 – 1.58	**0.002**
Trump Approval	-0.04	-0.13 – 0.05	0.223
Observations	4		
R^2 / R^2 adjusted	0.604 / 0.406		

Democrat Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.46	1.35 – 1.58	**<0.001**
Trump Approval	-0.08	-0.12 – -0.04	**0.014**
Observations	4		
R^2 / R^2 adjusted	0.972 / 0.958		

Table 10. *Generation X - Effect of Trump Approval on Support for Climate-Focused Policies*

Republican Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.85	1.75 – 1.94	**<0.001**
Trump Approval	-0.17	-0.20 – -0.13	**0.002**
Observations	4		
R^2 / R^2 adjusted	0.995 / 0.993		

Republican Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.52	1.22 – 1.83	**0.002**
Trump Approval	0.05	-0.06 – 0.16	0.183
Observations	4		
R^2 / R^2 adjusted	0.668 / 0.502		

Republican Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.82	1.75 – 1.89	**<0.001**
Trump Approval	-0.14	-0.16 – -0.11	**0.002**
Observations	4		
R^2 / R^2 adjusted	0.997 / 0.995		

Republican Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	2.01	1.77 – 2.24	**0.001**
Trump Approval	-0.19	-0.27 – -0.10	**0.011**
Observations	4		
R^2 / R^2 adjusted	0.978 / 0.966		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.46	1.42 – 1.51	**<0.001**
Trump Approval	-0.09	-0.10 – -0.07	**0.002**
Observations	4		
R^2 / R^2 adjusted	0.996 / 0.995		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.44	1.11 – 1.77	**0.003**
Trump Approval	0.06	-0.06 – 0.18	0.150
Observations	4		
R^2 / R^2 adjusted	0.723 / 0.585		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.43	1.18 – 1.68	**0.002**
Trump Approval	-0.05	-0.14 – 0.04	0.127
Observations	4		
R^2 / R^2 adjusted	0.762 / 0.642		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.56	1.25 – 1.88	**0.002**
Trump Approval	-0.10	-0.21 – 0.02	0.071
Observations	4		
R^2 / R^2 adjusted	0.862 / 0.794		

Table 11. *<u>Boomers</u> - Effect of Trump Approval on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.91	1.75 – 2.08	**<0.001**
Trump Approval	-0.18	-0.24 – -0.12	**0.006**
Observations	4		
R^2 / R^2 adjusted	0.989 / 0.983		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.43	1.33 – 1.53	**<0.001**
Trump Approval	0.09	0.06 – 0.13	**0.009**
Observations	4		
R^2 / R^2 adjusted	0.983 / 0.974		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.86	1.74 – 1.98	**<0.001**
Trump Approval	-0.14	-0.19 – -0.10	**0.005**
Observations	4		
R^2 / R^2 adjusted	0.990 / 0.985		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.08	1.98 – 2.17	**<0.001**
Trump Approval	-0.20	-0.23 – -0.16	**0.002**
Observations	4		
R^2 / R^2 adjusted	0.997 / 0.995		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.56	1.36 – 1.76	**0.001**
Trump Approval	-0.12	-0.20 – -0.05	**0.018**
Observations	4		
R^2 / R^2 adjusted	0.964 / 0.946		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.44	1.37 – 1.51	**<0.001**
Trump Approval	0.09	0.07 – 0.12	**0.004**
Observations	4		
R^2 / R^2 adjusted	0.991 / 0.987		

Democrat Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.51	1.14 – 1.88	**0.003**
Trump Approval	-0.08	-0.21 – 0.06	0.132
Observations	4		
R^2 / R^2 adjusted	0.754 / 0.631		

Democrat Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.75	1.44 – 2.06	**0.002**
Trump Approval	-0.15	-0.26 – -0.04	**0.029**
Observations	4		
R^2 / R^2 adjusted	0.943 / 0.914		

Table 12. *<u>Silents</u> - Effect of Trump Approval on Support for Climate-Focused Policies*

Republican Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.99	1.90 – 2.08	**<0.001**
Trump Approval	-0.21	-0.24 – -0.18	**0.001**
Observations	4		
R^2 / R^2 adjusted	0.997 / 0.996		

Republican Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.43	1.23 – 1.63	**0.001**
Trump Approval	0.09	0.01 – 0.16	**0.036**
Observations	4		
R^2 / R^2 adjusted	0.928 / 0.893		

Republican Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.94	1.84 – 2.04	**<0.001**
Trump Approval	-0.17	-0.20 – -0.13	**0.002**
Observations	4		
R^2 / R^2 adjusted	0.995 / 0.993		

Republican Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	2.13	1.72 – 2.55	**0.002**
Trump Approval	-0.21	-0.36 – -0.05	**0.028**
Observations	4		
R^2 / R^2 adjusted	0.944 / 0.916		

Democrat Support CO2 Emissions Regulation			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.45	1.12 – 1.77	**0.003**
Trump Approval	-0.10	-0.22 – 0.02	0.067
Observations	4		
R^2 / R^2 adjusted	0.871 / 0.807		

Democrat Support Fuel Efficiency Requirements			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.61	1.02 – 2.19	**0.007**
Trump Approval	0.04	-0.18 – 0.25	0.536
Observations	4		
R^2 / R^2 adjusted	0.215 / -0.177		

Democrat Support Renewable Energy Standards			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.52	1.43 – 1.60	**<0.001**
Trump Approval	-0.09	-0.12 – -0.06	**0.006**
Observations	4		
R^2 / R^2 adjusted	0.988 / 0.982		

Democrat Support Clean Air & Water Acts Enforcement			
Predictors	*Estimates*	*CI*	*p*
Intercept	1.71	1.19 – 2.22	**0.005**
Trump Approval	-0.15	-0.33 – 0.04	0.079
Observations	4		
R^2 / R^2 adjusted	0.848 / 0.772		

4.3e Effect of District Competitiveness on Support for Climate-Focused Policies

[H_5]: *Living in a strong Democrat congressional district plays a significant role in support for climate-focused policy. Individuals living in Democrat populated districts are more likely to support climate-focused policy.*

The effect of district competitiveness on support for the four chosen climate-focused among each generational subcategory policy questions was determined by linear regression. A table outlining results for Republicans and Democrats of each generation on each policy question is below (Tables 13-16), and graphical representations of the relationship between district competitiveness and policy support is found in Appendix V.

The fifth hypothesis [H_5] was not confirmed. Regression results demonstrate an inconsistent effect between district competitiveness and policy support for all generations of both Democrats and Republicans. As district competitiveness moves from Democrat to Republican, policy support *decreases* for Generation X Republicans on policy 1 (P-Value <0.001), 3 (P-Value 0.005), and 4 (P-Value <0.001); Boomer Republicans on policy 3 (P-Value 0.009) and 4 (P-Value 0.015); Boomer Democrats on policy 3 (P-Value 0.005) and 4 (P-Value 0.028); and Silent Democrats on policy 4 (0.013). As district competitiveness moves from Democrat to Republican, policy support *increases* for Millennial Democrats on policy 2 (P-Value <0.001); Generation X Democrats on policy 1 (P-Value 0.05) and 2 (P-Value <0.001); and Boomer Democrats on policy 2 (0.004).

The regressions were controlled for other relevant factors including gender, race, voter registration, region, and number of children. The results revealed some factors may play a role in support for climate-focused policies, but none were specific to Millennial Republicans.

Table 13. *Millennials - Effect of District Competitiveness on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.78	1.66 – 1.90	**<0.001**
District	0.01	-0.01 – 0.02	0.269
Education	-0.10	-0.12 – -0.08	**<0.001**
Trump Approval	0.01	-0.01 – 0.02	0.278
Voter Registration	-0.07	-0.11 – -0.02	**0.006**
Gender	-0.10	-0.14 – -0.07	**<0.001**
Race	-0.01	-0.03 – 0.00	0.129
Region	0.03	0.01 – 0.05	**0.001**
Number of Children	-0.01	-0.03 – 0.00	0.127
Observations	2867		
R^2 / R^2 adjusted	0.055 / 0.052		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.51	1.39 – 1.63	**<0.001**
District	0.01	-0.00 – 0.02	0.210
Education	0.06	0.04 – 0.08	**<0.001**
Trump Approval	-0.00	-0.02 – 0.01	0.473
Voter Registration	-0.03	-0.08 – 0.01	0.145
Gender	0.05	0.02 – 0.09	**0.004**
Race	-0.01	-0.03 – 0.00	0.071
Region	-0.00	-0.02 – 0.02	0.860
Number of Children	-0.02	-0.04 – -0.01	**0.003**
Observations	2867		
R^2 / R^2 adjusted	0.020 / 0.018		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.74	1.62 – 1.86	**<0.001**
District	0.00	-0.01 – 0.02	0.582
Education	-0.08	-0.10 – -0.06	**<0.001**
Trump Approval	0.01	-0.00 – 0.02	0.208
Voter Registration	-0.06	-0.11 – -0.01	**0.017**
Gender	-0.07	-0.11 – -0.04	**<0.001**
Race	-0.01	-0.02 – 0.01	0.517
Region	0.03	0.01 – 0.05	**0.004**
Number of Children	-0.02	-0.03 – -0.00	**0.027**
Observations	2864		
R^2 / R^2 adjusted	0.037 / 0.034		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.80	1.68 – 1.92	**<0.001**
District	0.01	-0.00 – 0.02	0.069
Education	-0.12	-0.14 – -0.10	**<0.001**
Trump Approval	0.01	-0.00 – 0.03	0.052
Voter Registration	-0.03	-0.08 – 0.02	0.191
Gender	-0.04	-0.08 – -0.00	**0.032**
Race	-0.01	-0.03 – 0.00	0.075
Region	0.01	-0.00 – 0.03	0.122
Number of Children	-0.01	-0.03 – 0.00	0.116
Observations	2867		
R^2 / R^2 adjusted	0.053 / 0.051		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.28	1.21 – 1.35	**<0.001**
District	-0.00	-0.01 – 0.00	0.271
Education	-0.04	-0.06 – -0.03	**<0.001**
Trump Approval	-0.03	-0.03 – -0.02	**<0.001**
Voter Registration	0.03	0.01 – 0.05	**0.014**
Gender	0.01	-0.00 – 0.03	0.088
Race	0.01	0.01 – 0.02	**<0.001**
Region	0.01	0.00 – 0.02	**0.012**
Number of Children	0.01	0.01 – 0.02	**0.001**
Observations	6255		
R^2 / R^2 adjusted	0.037 / 0.036		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.35	1.25 – 1.45	**<0.001**
District	0.02	0.01 – 0.02	**<0.001**
Education	0.10	0.08 – 0.11	**<0.001**
Trump Approval	0.05	0.04 – 0.06	**<0.001**
Voter Registration	-0.07	-0.10 – -0.04	**<0.001**
Gender	-0.06	-0.09 – -0.04	**<0.001**
Race	-0.04	-0.05 – -0.03	**<0.001**
Region	0.01	0.00 – 0.02	**0.011**
Number of Children	-0.03	-0.04 – -0.02	**<0.001**
Observations	6259		
R^2 / R^2 adjusted	0.091 / 0.090		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.36	1.28 – 1.45	**<0.001**
District	-0.00	-0.01 – 0.01	0.915
Education	-0.04	-0.06 – -0.03	**<0.001**
Trump Approval	-0.04	-0.04 – -0.03	**<0.001**
Voter Registration	0.04	0.01 – 0.06	**0.004**
Gender	0.02	-0.00 – 0.04	0.133
Race	0.01	0.00 – 0.01	**0.018**
Region	0.01	-0.00 – 0.02	0.102
Number of Children	0.02	0.01 – 0.03	**<0.001**
Observations	6265		
R^2 / R^2 adjusted	0.040 / 0.038		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.45	1.37 – 1.53	**<0.001**
District	-0.00	-0.01 – 0.01	0.970
Education	-0.08	-0.09 – -0.06	**<0.001**
Trump Approval	-0.03	-0.04 – -0.03	**<0.001**
Voter Registration	0.04	0.01 – 0.06	**0.004**
Gender	0.02	-0.00 – 0.03	0.097
Race	0.01	0.01 – 0.02	**<0.001**
Region	0.00	-0.00 – 0.01	0.298
Number of Children	0.02	0.02 – 0.03	**<0.001**
Observations	6265		
R^2 / R^2 adjusted	0.057 / 0.056		

Table 14. *Generation X - Effect of District Competitiveness on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.98	1.87 – 2.09	**<0.001**
District	0.02	0.01 – 0.03	**<0.001**
Education	-0.17	-0.19 – -0.15	**<0.001**
Trump Approval	0.03	0.02 – 0.04	**<0.001**
Voter Registration	-0.13	-0.19 – -0.08	**<0.001**
Gender	-0.15	-0.18 – -0.12	**<0.001**
Race	-0.01	-0.02 – 0.01	0.425
Region	0.03	0.01 – 0.05	**<0.001**
Number of Children	0.01	-0.00 – 0.01	0.313
Observations	3420		
R^2 / R^2 adjusted	0.138 / 0.136		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.41	1.30 – 1.53	**<0.001**
District	-0.00	-0.01 – 0.01	0.807
Education	0.06	0.04 – 0.08	**<0.001**
Trump Approval	-0.00	-0.02 – 0.01	0.531
Voter Registration	-0.01	-0.07 – 0.05	0.855
Gender	0.08	0.04 – 0.11	**<0.001**
Race	-0.02	-0.03 – -0.00	**0.023**
Region	0.01	-0.01 – 0.02	0.521
Number of Children	0.00	-0.01 – 0.01	0.666
Observations	3425		
R^2 / R^2 adjusted	0.019 / 0.016		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.85	1.74 – 1.96	**<0.001**
District	0.02	0.00 – 0.03	**0.005**
Education	-0.13	-0.15 – -0.12	**<0.001**
Trump Approval	0.03	0.02 – 0.04	**<0.001**
Voter Registration	-0.11	-0.17 – -0.06	**<0.001**
Gender	-0.08	-0.11 – -0.05	**<0.001**
Race	-0.01	-0.03 – 0.00	0.099
Region	0.02	0.00 – 0.04	**0.015**
Number of Children	0.01	-0.00 – 0.02	0.126
Observations	3422		
R^2 / R^2 adjusted	0.082 / 0.079		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.91	1.80 – 2.01	**<0.001**
District	0.02	0.01 – 0.03	**<0.001**
Education	-0.17	-0.18 – -0.15	**<0.001**
Trump Approval	0.02	0.01 – 0.03	**<0.001**
Voter Registration	-0.07	-0.12 – -0.01	**0.014**
Gender	-0.05	-0.08 – -0.02	**0.001**
Race	-0.01	-0.03 – 0.00	0.086
Region	0.02	0.01 – 0.04	**0.001**
Number of Children	0.01	-0.00 – 0.02	0.084
Observations	3426		
R^2 / R^2 adjusted	0.115 / 0.113		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.46	1.38 – 1.55	**<0.001**
District	-0.01	-0.01 – -0.00	**0.050**
Education	-0.08	-0.09 – -0.06	**<0.001**
Trump Approval	-0.02	-0.03 – -0.02	**<0.001**
Voter Registration	0.02	-0.02 – 0.06	0.272
Gender	0.01	-0.01 – 0.03	0.236
Race	0.00	-0.01 – 0.01	0.551
Region	0.00	-0.01 – 0.01	0.668
Number of Children	0.01	0.00 – 0.02	**0.001**
Observations	4930		
R^2 / R^2 adjusted	0.039 / 0.038		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.46	1.35 – 1.58	**<0.001**
District	0.01	0.01 – 0.02	**<0.001**
Education	0.08	0.06 – 0.10	**<0.001**
Trump Approval	0.05	0.04 – 0.05	**<0.001**
Voter Registration	-0.04	-0.09 – 0.00	0.060
Gender	-0.09	-0.12 – -0.07	**<0.001**
Race	-0.04	-0.05 – -0.03	**<0.001**
Region	0.00	-0.01 – 0.02	0.505
Number of Children	-0.01	-0.02 – -0.00	**0.006**
Observations	4926		
R^2 / R^2 adjusted	0.072 / 0.071		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.39	1.29 – 1.50	**<0.001**
District	-0.00	-0.01 – 0.01	0.889
Education	-0.06	-0.08 – -0.04	**<0.001**
Trump Approval	-0.03	-0.04 – -0.02	**<0.001**
Voter Registration	0.02	-0.03 – 0.06	0.466
Gender	0.05	0.03 – 0.08	**<0.001**
Race	0.02	0.01 – 0.03	**<0.001**
Region	0.01	-0.00 – 0.02	0.255
Number of Children	0.01	0.01 – 0.02	**0.001**
Observations	4924		
R^2 / R^2 adjusted	0.041 / 0.039		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.59	1.49 – 1.68	**<0.001**
District	0.00	-0.01 – 0.01	0.736
Education	-0.11	-0.13 – -0.09	**<0.001**
Trump Approval	-0.04	-0.05 – -0.03	**<0.001**
Voter Registration	0.02	-0.02 – 0.05	0.422
Gender	0.07	0.05 – 0.09	**<0.001**
Race	0.01	-0.00 – 0.02	0.090
Region	-0.00	-0.01 – 0.01	0.921
Number of Children	0.01	0.01 – 0.02	**<0.001**
Observations	4929		
R^2 / R^2 adjusted	0.081 / 0.080		

Table 15. *Boomers* - *Effect of District Competitiveness on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.09	2.01 – 2.18	**<0.001**
District	0.01	-0.00 – 0.01	0.185
Education	-0.18	-0.20 – -0.17	**<0.001**
Trump Approval	0.04	0.03 – 0.05	**<0.001**
Voter Registration	-0.18	-0.23 – -0.13	**<0.001**
Gender	-0.12	-0.15 – -0.10	**<0.001**
Race	-0.00	-0.02 – 0.01	0.688
Region	0.02	0.01 – 0.03	**0.002**
Number of Children	0.01	0.00 – 0.02	**0.008**
Observations	5988		
R^2 / R^2 adjusted	0.140 / 0.139		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.20	1.11 – 1.29	**<0.001**
District	0.00	-0.00 – 0.01	0.297
Education	0.10	0.08 – 0.11	**<0.001**
Trump Approval	-0.00	-0.01 – 0.01	0.588
Voter Registration	0.08	0.03 – 0.13	**0.003**
Gender	0.11	0.09 – 0.14	**<0.001**
Race	-0.00	-0.02 – 0.01	0.727
Region	-0.01	-0.03 – -0.00	**0.039**
Number of Children	-0.01	-0.01 – 0.00	0.191
Observations	5987		
R^2 / R^2 adjusted	0.040 / 0.039		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.95	1.86 – 2.03	**<0.001**
District	0.01	0.00 – 0.02	**0.009**
Education	-0.15	-0.16 – -0.13	**<0.001**
Trump Approval	0.03	0.02 – 0.03	**<0.001**
Voter Registration	-0.11	-0.16 – -0.07	**<0.001**
Gender	-0.09	-0.12 – -0.07	**<0.001**
Race	-0.01	-0.02 – 0.00	0.151
Region	0.02	0.01 – 0.04	**<0.001**
Number of Children	0.01	-0.00 – 0.01	0.141
Observations	5995		
R^2 / R^2 adjusted	0.086 / 0.085		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.14	2.07 – 2.21	**<0.001**
District	0.01	0.00 – 0.01	**0.015**
Education	-0.18	-0.19 – -0.17	**<0.001**
Trump Approval	0.02	0.01 – 0.02	**<0.001**
Voter Registration	-0.12	-0.16 – -0.08	**<0.001**
Gender	-0.07	-0.09 – -0.05	**<0.001**
Race	-0.01	-0.03 – -0.00	**0.011**
Region	0.02	0.01 – 0.03	**0.001**
Number of Children	0.01	0.00 – 0.01	**0.034**
Observations	5998		
R^2 / R^2 adjusted	0.138 / 0.137		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.53	1.46 – 1.60	**<0.001**
District	0.00	-0.00 – 0.01	0.811
Education	-0.10	-0.12 – -0.09	**<0.001**
Trump Approval	-0.01	-0.02 – -0.01	**<0.001**
Voter Registration	-0.02	-0.05 – 0.01	0.165
Gender	0.01	-0.01 – 0.02	0.266
Race	0.00	-0.00 – 0.01	0.372
Region	0.00	-0.00 – 0.01	0.180
Number of Children	0.01	0.00 – 0.01	**0.011**
Observations	6522		
R^2 / R^2 adjusted	0.057 / 0.055		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.65	1.56 – 1.74	**<0.001**
District	0.01	0.00 – 0.01	**0.004**
Education	0.08	0.06 – 0.09	**<0.001**
Trump Approval	0.03	0.03 – 0.04	**<0.001**
Voter Registration	-0.11	-0.15 – -0.07	**<0.001**
Gender	-0.09	-0.11 – -0.07	**<0.001**
Race	-0.04	-0.05 – -0.03	**<0.001**
Region	0.02	0.01 – 0.03	**<0.001**
Number of Children	-0.01	-0.02 – -0.00	**0.004**
Observations	6530		
R^2 / R^2 adjusted	0.078 / 0.076		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.60	1.51 – 1.68	**<0.001**
District	-0.01	-0.01 – -0.00	**0.005**
Education	-0.09	-0.11 – -0.08	**<0.001**
Trump Approval	-0.03	-0.04 – -0.03	**<0.001**
Voter Registration	0.01	-0.03 – 0.05	0.576
Gender	0.02	0.01 – 0.04	**0.012**
Race	0.02	0.01 – 0.03	**<0.001**
Region	-0.01	-0.02 – -0.00	**0.024**
Number of Children	0.01	0.00 – 0.02	**0.001**
Observations	6528		
R^2 / R^2 adjusted	0.059 / 0.058		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.69	1.61 – 1.76	**<0.001**
District	-0.01	-0.01 – -0.00	**0.028**
Education	-0.16	-0.17 – -0.14	**<0.001**
Trump Approval	-0.03	-0.04 – -0.03	**<0.001**
Voter Registration	0.05	0.02 – 0.09	**0.004**
Gender	0.06	0.04 – 0.07	**<0.001**
Race	0.02	0.01 – 0.03	**<0.001**
Region	-0.00	-0.01 – 0.01	0.765
Number of Children	0.01	0.01 – 0.02	**<0.001**
Observations	6533		
R^2 / R^2 adjusted	0.129 / 0.128		

Table 16. *Silents - Effect of District Competitiveness on Support for Climate-Focused Policies*

	Republican Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.02	1.83 – 2.21	**<0.001**
District	0.00	-0.01 – 0.01	0.705
Education	-0.21	-0.24 – -0.18	**<0.001**
Trump Approval	0.04	0.03 – 0.05	**<0.001**
Voter Registration	-0.05	-0.20 – 0.10	0.484
Gender	-0.11	-0.15 – -0.07	**<0.001**
Race	-0.02	-0.04 – 0.01	0.156
Region	0.02	-0.00 – 0.04	0.068
Number of Children	0.00	-0.01 – 0.01	0.602
Observations	2237		
R^2 / R^2 adjusted	0.143 / 0.140		

	Republican Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.21	0.99 – 1.44	**<0.001**
District	-0.01	-0.02 – 0.01	0.334
Education	0.11	0.07 – 0.14	**<0.001**
Trump Approval	-0.01	-0.02 – 0.01	0.263
Voter Registration	0.06	-0.11 – 0.24	0.488
Gender	0.13	0.09 – 0.18	**<0.001**
Race	-0.01	-0.03 – 0.02	0.667
Region	-0.00	-0.03 – 0.02	0.715
Number of Children	-0.00	-0.02 – 0.01	0.661
Observations	2242		
R^2 / R^2 adjusted	0.041 / 0.038		

	Republican Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.01	1.81 – 2.20	**<0.001**
District	0.01	-0.01 – 0.02	0.250
Education	-0.17	-0.20 – -0.14	**<0.001**
Trump Approval	0.03	0.01 – 0.04	**<0.001**
Voter Registration	-0.14	-0.30 – 0.02	0.080
Gender	-0.07	-0.11 – -0.03	**0.001**
Race	0.00	-0.02 – 0.03	0.860
Region	0.02	0.00 – 0.04	**0.036**
Number of Children	-0.01	-0.02 – 0.01	0.314
Observations	2241		
R^2 / R^2 adjusted	0.083 / 0.080		

	Republican Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	2.04	1.89 – 2.20	**<0.001**
District	0.00	-0.01 – 0.01	0.614
Education	-0.18	-0.21 – -0.16	**<0.001**
Trump Approval	0.02	0.01 – 0.03	**0.002**
Voter Registration	0.02	-0.11 – 0.14	0.784
Gender	-0.05	-0.08 – -0.02	**0.002**
Race	-0.01	-0.03 – 0.00	0.132
Region	0.02	0.00 – 0.03	**0.013**
Number of Children	-0.00	-0.01 – 0.00	0.324
Observations	2235		
R^2 / R^2 adjusted	0.124 / 0.121		

	Democrat Support CO2 Emissions Regulation		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.44	1.30 – 1.57	**<0.001**
District	-0.00	-0.01 – 0.01	0.860
Education	-0.09	-0.11 – -0.07	**<0.001**
Trump Approval	-0.01	-0.02 – 0.00	0.070
Voter Registration	-0.02	-0.10 – 0.05	0.554
Gender	0.02	-0.01 – 0.04	0.239
Race	0.01	-0.01 – 0.02	0.261
Region	0.01	-0.01 – 0.02	0.293
Number of Children	-0.00	-0.01 – 0.01	0.741
Observations	1669		
R^2 / R^2 adjusted	0.048 / 0.044		

	Democrat Support Fuel Efficiency Requirements		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.75	1.55 – 1.96	**<0.001**
District	-0.00	-0.02 – 0.01	0.466
Education	0.06	0.02 – 0.09	**0.001**
Trump Approval	0.02	0.01 – 0.03	**0.004**
Voter Registration	-0.01	-0.12 – 0.11	0.925
Gender	-0.14	-0.18 – -0.10	**<0.001**
Race	-0.02	-0.04 – 0.00	0.090
Region	0.01	-0.01 – 0.03	0.218
Number of Children	-0.00	-0.02 – 0.01	0.544
Observations	1670		
R^2 / R^2 adjusted	0.060 / 0.056		

	Democrat Support Renewable Energy Standards		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.57	1.38 – 1.75	**<0.001**
District	-0.01	-0.02 – 0.00	0.206
Education	-0.08	-0.11 – -0.05	**<0.001**
Trump Approval	-0.03	-0.04 – -0.02	**<0.001**
Voter Registration	-0.02	-0.12 – 0.08	0.732
Gender	0.02	-0.01 – 0.06	0.181
Race	0.02	-0.00 – 0.04	0.095
Region	-0.02	-0.03 – 0.00	0.053
Number of Children	0.01	-0.00 – 0.02	0.207
Observations	1670		
R^2 / R^2 adjusted	0.055 / 0.050		

	Democrat Support Clean Air & Water Acts Enforcement		
Predictors	*Estimates*	*CI*	*p*
Intercept	1.78	1.63 – 1.94	**<0.001**
District	-0.01	-0.02 – -0.00	**0.013**
Education	-0.16	-0.18 – -0.13	**<0.001**
Trump Approval	-0.02	-0.03 – -0.02	**<0.001**
Voter Registration	-0.01	-0.09 – 0.07	0.800
Gender	0.03	0.01 – 0.06	**0.020**
Race	0.00	-0.01 – 0.02	0.632
Region	-0.00	-0.02 – 0.01	0.562
Number of Children	0.01	0.00 – 0.02	**0.024**
Observations	1670		
R^2 / R^2 adjusted	0.141 / 0.137		

5.1 Summary of Results

A chart summary of predicted and actual correlation between independent and dependent variables is presented below. Unexpected results are highlighted and discussed further in the next section.

Table 17. *Summary of Predicted & Actual Correlations*

	Predicted | Actual Effect on Support CO_2 Emissions	Predicted | Actual Effect on Support Fuel Efficiency	Predicted | Actual Effect on Support Renewable Energy	Predicted | Actual Effect on Support Clean Air/Water
Effect Party -- Millennial	+ | +	- | -	+ | +	+ | +
Effect Party -- Gen X	+ | +	- | -	+ | +	+ | +
Effect Party -- Boomer	+ | +	- | -	+ | +	+ | +
Effect Party -- Silent	+ | +	- | -	+ | +	+ | +

Effect Age	- | -	- | -	+ | +	+ | +	- | -	- **None**	- | -	- **None**
Effect Educ -- Millennial	**None** | **None**	**None** | -	**None** | **None**	**None** | +	**None** | **None**	**None** | -	**None** | **None**	**None** | -
Effect Educ -- Gen X	**None** | +	**None** | -	**None** | **None**	**None** | +	**None** | +	**None** | -	**None** | +	**None** | -
Effect Educ -- Boomer	**None** | +	**None** | -	**None** | **None**	**None** | +	**None** | **None**	**None** | -	**None** | **None**	**None** | -
Effect Educ -- Silent	**None** | +	**None** | **None**	**None** | -	**None** | **None**	**None** | **None**	**None** | -	**None** | **None**	**None** | -

	Predicted | Actual Effect on Support CO_2 Emissions		Predicted | Actual Effect on Support Fuel Efficiency		Predicted | Actual Effect on Support Renewable Energy		Predicted | Actual Effect on Support Clean Air/Water	
Effect Trump -- Millennial	- | -	- | None	+ | +	+ | +	- | -	- | None	- | -	- | -
Effect Trump -- Gen X	- | -	- | -	+ | None	+ | None	- | -	- | None	- | -	- | None
Effect Trump -- Boomer	- | -	- | -	+ | +	+ | +	- | -	- | None	- | -	- | -
Effect Trump -- Silent	- | -	- | None	+ | +	+ | None	- | -	- | -	- | -	- | None
Effect District -- Millennial	+ | None	+ | None	- | None	- | +	+ | None	+ | None	+ | None	+ | None
Effect District -- Gen X	+ | +	+ | -	- | None	- | +	+ | +	+ | None	+ | +	+ | None
Effect District -- Boomer	+ | None	+ | None	- | None	- | +	+ | +	+ | +	+ | +	+ | +
Effect District -- Silent	+ | None	+ | None	- | None	- | None	+ | None	+ | None	+ | None	+ | -

5.2 Limitations & Analysis

Before discussing the results of this research project, it is essential to be transparent about the limitations of drawing any conclusion from this data. There are several major limiting factors present in this research design, including the inherently problematic nature of assessing causation from public opinion surveys. Survey research provides an easy, cost-effective way of assessing theoretical factors that are not easily observed, such as norms and attitudes; however, it is critical to keep in mind that association between a presumed theoretical mediator and a behavioral effect cannot prove that a behavioral effect is caused by the theoretical mediator (Noar 2018). Survey data does not allow for assessment of the complex and dynamic interplay of variables, the reality that our behavior affects mediating factors, and the process of rationalization by which opinion is changed to fit behavior (Noar 2018). That being said, "association is one of the requirements for causation, and survey research is very good at demonstrating association" (Noar 2018), so it is useful to utilize survey data to eliminate causal factors and further refine this research question.

Another major limiting factor was the choice to focus exclusively on policy issues. Pew Research data demonstrates that the relationship between ideology and belief in climate change, belief in *anthropogenic* climate change, trust in climate scientists, and support of climate-focused policy is complex. It is possible that the results presented here would be different if the questions focused on something more generalized such as *concern* about climate change instead of support for climate-focused policy. However, policy support was prioritized here because 1) a concern about climate change without support for actual policy is not effective in addressing the problem motivating this research question, and 2) questions about climate change concern in CCES are grouped with other policy concerns that may act as confounding factors in opinion formation.

The other major limiting factor of this research design is the arbitrary manner in which generational and political party boundaries are defined. There is not a standardized generational definition or boundary used within social science, so the colloquially accepted definition utilized in Pew Research has been copied here for ease of comparison due to the reliance on that data in describing the current context of climate change opinion. It is possible that other definitions of generational bounds may produce different results than those presented here. Indeed, researchers using generational data have had "difficulty identifying marked differences and explaining how behaviours and attitudes vary from one generation to another" (Conger 2000; Costanza et al. 2012; Finegold et al. 2002; Saba 2009; Saba 2013; Wong et al. 2008).

Moreover, political affiliation can be fluid over time, and this survey data provides only a snapshot in time of respondents. In light of the evidence that young Republicans concerned about climate change might be leaving the party due to this specific concern (Pew Research 2017a), it is possible the targeted population is not actually captured within these results. Moreover, these types of studies entirely avoid considering Independents and their political opinions. This is concerning because far more Americans identify as Independents than as Democrats or Republicans (Jones 2019), and yet Independents were dramatically underrepresented among CCES respondents. This is a known problem in partisan psychology research (Leeper & Slothuus 2014), and it is concerning that climate change opinion research generally seems to be focused on the divide between Republicans and Democrats without much regard to Independents.

As noted earlier, there are also discrepancies in general between the sample and larger population demographic characteristics which makes validating these results beyond the sample problematic. The sample size is also unfortunately smaller than desired due to a limited number

of respondents that answered all questions utilized in the research design. Furthermore, 2018 is the only year CCES collected data since Donald Trump took office, which also greatly limits this project's ability to validate results. Future research might utilize long-term panel data produced by CCES, which has yet to be published for the years that are relevant to this investigation. It is generally important not to overly rely on a static concept of generation and to consider these results within a larger context of various dynamic factors. As stated at the outset, this project is merely a starting point for additional research on this important topic. Further exploration of this topic is necessary, and a few possible methods of additional inquiry are outlined in the next section. Limitations relating to the assumption that individuals in Democrat, lean Democrat, and competitive districts experience greater peer signaling on climate change are also challenged in the next section concerning future research design.

Despite these limitations, the results presented here provide an opportunity to speculate about general climate change opinion trends and potential policy implications. The first and second hypotheses -- respectively the effects of party and age on support for climate-focused policy -- were confirmed. Party preference -- specifically identifying with the Democrat party -- is correlated with greater support for climate-focused policy; age -- specifically being younger -- is also correlated with greater support for climate-focused policy. Given the numerous studies that have confirmed these two factors as being the two most significant factors in climate change opinion formation (Pew Research 2018c; Pew Research 2018d), these results are expected. The lack of association between age and support for policies 3 and 4 for Democrats is likely due to the fact that Democrats generally support climate-focused policy across all generations (Pew Research 2018d) and within-party differences may be insignificant for specific policy measures.

The graphical representations of these results show that Democrat support for these policies is generally stable across all generational sub-demographics.

The third hypothesis -- that education plays an inconsistent or minimal role in climate-focused policy support -- was also confirmed for Republicans but not Democrats. Higher levels of education were associated with higher levels of support for policy among Democrats; however education was not associated with greater support of climate-focused policy for any generation among Republicans. In fact, education was associated with *less* support for climate-focused policy in some categories. These results confirm previous surveys showing an inconsistent effect of education on climate-focused policy support (Pew Research 2016). There are considerable policy implications that stem from the reality that education seems to have little effect on support for climate-focused policy among Republicans. Education is understandably considered one of the most potent tools available to sway public opinion in general and on this issue. There has been considerable resources and attention paid to scaling climate change education on a national level (UNESCO 2015). These efforts should be routinely verified for effectiveness given the current apparent lack of association between education and climate change opinion formation. It may be necessary to continually refine these methods as new data becomes available on the link between education and climate change opinion formation. If association between education and climate change belief continues to be elusive for Republicans, it may be necessary to reevaluate whether these educational programs should remain a priority, or if there are alternative methods that are better able to accomplish the same goals.

The fourth hypothesis -- that support for Donald Trump is associated with less support for climate-focused policy -- was confirmed for Republicans but not for Democrats. This hypothesis

was expected to conform to trends among Republicans among all ages (Pew Research 2017b); however, it was reasonably expected to hold true for Democrats as well. With only one exception -- Generation X on policy 2 -- higher levels of support for Trump are associated with less support for climate-focused policy among Republicans. This association is less for Democrats with only about half of the generational subpopulations conforming to this trend. A closer examination of the graphical data for these results (Appendix IV) demonstrates that trends among generational subpopulations are similar among Democrats and Republicans; however, overall, Democrats seem to support climate-focused policy more than Republicans regardless of the level of support for Trump. This may be an indication that elite signaling still plays a significant role in climate change opinion among Republicans.

The fifth hypothesis -- living in Democrat, lean Democrat, and competitive districts is associated with greater support for climate-focused policy -- was not confirmed. Regression results were extremely inconsistent for both parties with living in Democrat-dominated districts associated with an increase in policy support in some cases and a decrease in others. An examination of the graphical data for these results (Appendix V) demonstrates the stability of support level across district competitiveness rating. There is a substantial difference in support among Democrats and Republicans in all generations; this gap decreases significantly among Millennials. Given the significant limitations of this research design arising from the assumption that living in these areas may result in a markedly higher level of peer influence on the climate change opinion formation process, these results are unsurprising.

Although none of the factors controlled for in testing the fifth hypothesis are significant specifically for young Republicans, a number were noted as significant. Gender was significant

for all generations of Republicans on each policy issue. Voter registration status and region were significant for Boomer Republicans on each policy issue. There were not any factors that were significant for all generations for Democrats on all policy issues, but voter registration status and number of children were significant for Millennial, Generation X, and Boomer Democrats on all policy issues. Region was also significant for Millennial Democrats on all policy issues. Previous studies indicate that ideology and age are the primary contributing factors in climate change opinion formation with all other factors, including those tested for this sample, having modest or no effect (Pew Research 2016). If these results are replicated in a larger sample, it may provide additional avenues for analysis. In particular, gender may be promising as a potential explanatory factor given that it was significant for all generations of Republicans.

Beyond the findings from the analysis of CCES data, the value of this project lies in its compilation and assessment of relevant research into this topic. Elite signaling is by far the most common explanation for climate change opinion formation, yet it is clearly not the only path by which opinions on climate change are formed. Although there have been attempts to link peer norm-setting to environmental behavior and opinion, there have been none directly challenging the application of the elite signaling theoretical model to this topic, nor have there been attempts to establish an alternative theoretical model involving peer norm-setting or any other paradigm. Moreover, there has been a distinct lack of scholarly inquiry into how young Republicans are engaging with climate change despite the challenge their diverging opinions present to the traditional theoretical model. Such a divergence also presents significant policy considerations worth exploring. This project is the first step in a much larger research agenda to identify and capitalize on the mechanism by which this process is occuring.

5.3 Suggested Next Steps

The fifth hypothesis -- individuals living in Democrat, lean Democrat, and competitive congressional districts express greater support for climate-focused policy -- is problematic on a number of levels. Even if an association between living in these districts and policy support was confirmed, it would not be possible to conclude any definitive link between peer influence and policy support. This is partly due to the inherent difficulty mentioned previously concerning proving causal links from survey data but, specifically in this case, because the link between living in the targeted districts and experiencing peer influence on climate change is entirely assumed. At best, a confirmed hypothesis here would provide the basis for a closer look at district competitiveness, if it were associated with greater policy support. Ideologically similar individuals tend to "cluster together" in geographic areas (Howe et al. 2015; Howe et. al 2019), including congressional districts. Neighborhood-level factors are in general known to influence behavior and attitudes to some degree, including specifically on some environmentally-focused practices such as energy saving (McDonald & Crandall 2015; Nolan et al. 2008). It is not unreasonable to consider that self-identified Republicans living in areas with high concentrations of Democrats might belong to shared social groups with their ideological counterparts.

However, along with the limitations discussed earlier, this tenuous link between district competitiveness and likelihood of experiencing peer influence makes any conclusions based on this data suspect. Therefore, as surely as it would be impossible to claim peer influence in these districts leads to greater support for climate-focused policy based on confirming this hypothesis, it is equally impossible to claim that there is no link between peer influence and support for climate-focused policy based on the failure to confirm the fifth hypothesis. This project was the

first step of a larger research agenda, and the limitations present are largely due to a lack of appropriate data available within the constraints of this particular project. Social norm-setting remains a viable avenue of exploration as research on this topic continues going forward. It has the potential to be an effective method of moving the needle on climate change opinion because 1) it has been provisionally effective in some circumstances (Cialdini et al. 1990; Cialdini 2003; Gerber & Rogers 2009; Goldstein et al. 2008; McDonald & Crandall 2015; Nolan et al. 2008; Renn 2011; Swim et al. 2009; van der Linden 2015), 2) it is a low cost method (Griskevicius et al. 2008), 3) it has the potential to connect values to action (Stern et al. 1999) including the values important to Republicans (Wolsko et al. 2016), and 4) its influence is usually undetected by its targets (McDonald & Crandall 2015), which may potentially be a workaround to barriers posed by the resistance to engaging with ideologically dissimilar ideas. Suggested strategies for further engagement on this topic are outlined below.

One potential strategy for further investigation is continued use of survey methods, but more directly focused on questioning peer influence. Ideally this would again use disaggregated data to closely assess this effect for different age groups; however, there are some advantages to abandoning traditional generational boundaries in favor of smaller age brackets. Given that these traditional boundaries are largely arbitrary, and there is almost certainly overlap in attitudes and behavior in individuals close in age but on either side of a generational boundary, a more tightly defined age bracket may reveal insights not possible in the current research design. An individual at age 18 certainly has a different worldview than one at age 38, and young adults in general are still forming their worldview, less susceptible to ideological influence, and more respondent to peer influence (Stevenson et al. 2016). Greater insight could also be gained by direct questioning

of peer norms perception instead of more distantly related climate-focused policy questions. A tailored set of questions could assess 1) the degree to which an individual feels as though they belong to various social identity groups that may influence them, 2) the individual's perception of peer behavior and habits relating to the environment, 3) the individual's own behavior and habits relating to the environment, and 4) the degree to which the individual perceives they have been influenced by the behavior of others. Actual peer behavior is not strictly necessary to determine as it is the mere perception of peer norms that is believed to influence individuals (McDonald & Crandall 2015). An analysis for these factors in neighborhoods of differing levels of ideological distribution could reveal unique insights prompting further study.

Another potential research strategy could focus less on a physical geographic distribution of peers and more on a virtual distribution of peers across digital social networks. It is significant that young people in general utilize social media far more than their older counterparts. About 88% of 18-29-year-olds, 78% of 30-49-year-olds, 64% of 50-64-year-olds, and 37% of those 65+ use social media (Smith & Anderson 2018). Given the increasing trend among younger adults to use this technology, these digital bonds may be more important in peer norm-setting for this age group than a physical neighborhood effect. Furthermore, there are also significant differences in social media use within the young adult population. These differences are pronounced even between young adults ages 18-24 and young adults ages 25-29 (Smith & Anderson 2018). These differences further substantiate the benefits of redefining age groups for the purpose of assessing peer norm-setting. This strategy could utilize a few different approaches; adjusted age brackets are recommended for each approach. One possible method is to use similar survey questions to those used in the current research design. In this scenario, however, instead of competitiveness of

congressional districts, the effect of ideological composition of online peers would be tested on support for climate-focused policy. This is not a direct test of peer influence, but it is reasonable to expect that diversity of online peer groups may have an effect on climate change opinion. The majority of young people that utilize social media claim it has increased their interactions with others from diverse backgrounds (Anderson & Jiang 2018). Given the disparity in social media use among different age groups, any indication that ideological diversity among online peers is associated with increased support for climate-focused policy is grounds for further exploration. Another approach is to directly test peer influence as outlined in the example above, but with a special focus on online peer norm-setting. Again, given disparity in social media use among age groups and potential disparity in ideological composition of online peers among age groups, the effects of peer norm-setting experienced through online platforms may differ for age groups.

It is also possible to use an experimental approach to better assess peer norm-setting in both an online and general context. Many of the experimental methods mentioned previously -- energy-saving (McDonald & Crandall 2015; Nolan et al. 2008); recycling (Cialdini 2003); risk assessment (Renn 2011; Swim et al. 2009; van der Linden 2015) -- can be further explored by focusing on ideology, age, online peer group diversity, and any number of factors that have not yet been tested. Further exploration can add robustness to these findings, but also may add to our understanding of how peer norm-setting effects interact with other variables that are relevant to climate change opinion. It is likely that there are differences in responsiveness to these peer cues given the substantial role that ideology and age play in climate change opinion formation. This has implications for any policy or public campaign that arise from these findings, and may prove useful in determining next steps for the investigation of why young Republicans are diverging

from their party on this particular issue. To more thoroughly assess the causal mechanism that is driving that shift, an experimental design is almost certainly necessary given the limitations in determining a causal explanation for it via survey methods. Given the goal of differentiating the effects of peer versus elite signaling, it may be helpful to design future research more explicitly around these factors. Climate change opinion, environmental behavior, and support for climate-focused policy could all be tested after receiving competing messaging from both peer and elite sources. Any difference in response among age groups would be significant. It is possible peer influence may supersede elite influence on this issue for all age groups which would necessitate further refinement of the research design to more clearly target variables exclusive to younger Republicans. More ambitious projects may monitor effects of elite and peer signaling over time to test this process as individuals age, as the consequences of climate change develop, as the initial influence effect fades (or does not), and possibly to determine if research subjects have any effect on their own peers or seek changes in their peer and ideological social groups.

This diversity of potential future research strategies is indicative of the complexity of the topic. Determining a causal relationship between an external influence and an internal process is difficult at best in general, and climate change opinion formation is unusually politically charged and technically complex. It is also potentially extremely beneficial to social science scholars, policy-makers, and the general public to understand this process better. A wide range of options to continue this exploration is both challenging and promising. Given the burgeoning pool of research centered on peer influence in general and specifically focused on environment opinion and/or behavior, there is a wealth of research strategies and resources that can be utilized to continue this research agenda going forward.

6 Conclusion

This research project sought to contribute to scholarly understanding of climate change opinion formation. In the U.S., climate change opinion is polarized along ideological lines. The predominant explanation for this phenomenon is that an individual utilizes heuristic shortcuts by relying on cues from political elites to form their opinion. Given that Republican elite signaling on climate change has been generally to deny the existence and/or seriousness of climate change and unsupportive of climate-focused policy over the past few decades, similar trends among Republicans in the general public have been attributed to the elite signaling theoretical model. However, in recent years, there has been a distinct trend of increasingly higher levels of climate change belief among young Republicans. This trend is a clear aberration in the traditional model and represents a unique opportunity to both challenge the traditional model and contribute to our understanding of an important topic with far-reaching implications for future public policy efforts. Given the difficulty of garnering public buy-in for climate-focused policy, particularly among Republicans, insight into the process of climate change opinion formation that might be utilized to obtain greater public support for such policy is potentially quite valuable.

Determining an alternative mechanism by which young Republicans form their opinions on climate change is difficult. Opinion formation is an internal process that individuals are often unaware of experiencing. Peer norm-setting is suggested as a potential alternative mechanism due to the growing body of literature linking it to opinion formation on a number of politically charged issues, including climate change and other environmental issues (Cialdini et al. 1990; Cialdini 2003; Glynn et al. 2009; Goldstein et al. 2008; Goode et al. 2014; McDonald & Crandall 2015; Moussaïd et al. 2013; Nickerson 2008; Nolan et al. 2008; Quintelier et al. 2011; Sinclair &

Kunda 1999; Renn 2011; Swim et al. 2009; van der Linden 2015). It is possibly especially applicable to young people in the face of climate change as they will likely be disproportionately affected by its consequences. In general, membership in a threatened social group is sufficient to override the effects of elite signaling on issues particularly relevant or threatening to that group (Klar 2013; Leeper & Slothuus 2014). As this is a critically understudied topic, assumptions are necessary to initiate a research agenda, but the theoretical framework for peer norm-setting does seem promising as a potential alternative explanation for young Republican climate change opinion formation.

The central challenge of this project was devising a method by which the hypotheses could be tested. Given the constraints inherent in a project such as this, several assumptions were necessary to utilize accessible datasets. This resulted in limitations of the research design and the conclusions drawn from resulting data. However, the general trends of political affiliation and age having a significant effect on support for climate-focused policy are present in the CCES dataset. Democrats are more likely than Republicans to support such policy, as are younger people. Furthermore, similar to known population trends, climate-focused policy support is not significantly affected by education level among Republicans. However, higher levels of education were associated with increased support for climate-focused policy among Democrats. Support for President Trump was associated with decreased support for climate-focused policy for Republicans, but played an inconsistent role in climate-focused policy support for Democrats. The main hypothesis of interest concerns the effect of congressional district competitiveness on support for climate-focused policy. There is no readily available data directly questioning peer influence regarding climate change opinion; district competitiveness was utilized as a proxy for

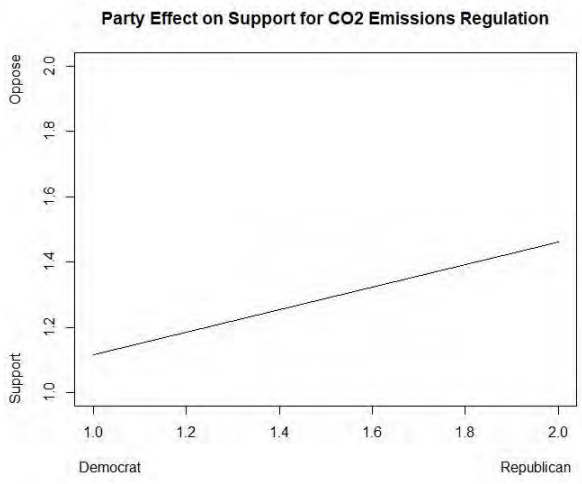
the possible level of peer signaling influence on climate change experienced by respondents. It was hypothesized that respondents living in areas that lean Democrat would demonstrate higher levels of support for climate-focused policies. Any difference in level of support for climate-focused policy among the generational subpopulations would have been useful in determining the next steps for this project; however, there were no significant differences in support for climate-focused policy for any generation living in districts of varying competitiveness.

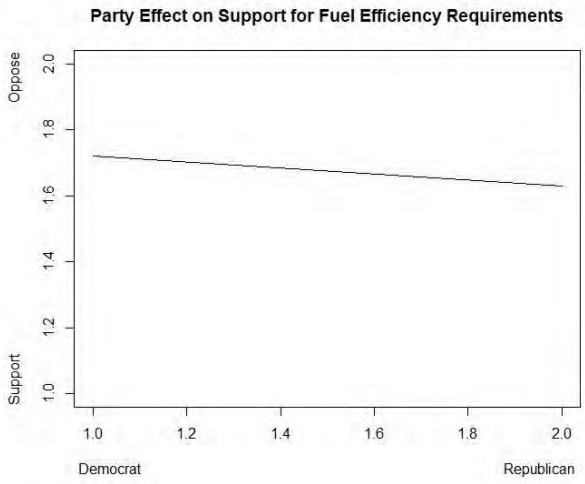
Given the limitations of the research design, it is unsurprising that no direct association was found between district competitiveness and support for climate-focused policy. A longer term project may capitalize on the groundwork laid out here by more directly testing peer norm-setting influence on climate change opinion. There is clearly more work to be done on this topic, and the suggested additional research strategies are included in this analysis as a means of furthering that work. There has been surprisingly little research thus far on either describing the mechanism by which climate change opinion is formed or, more importantly, how it can possibly be influenced. Not only does young Republican climate change opinion represent a gap in our knowledge of opinion formation, but it is also an opportunity to engage in valuable research on utilizing such data to create more effective policy approaches. If young Republicans have indeed bypassed the high levels of elite signaling from their party leaders on climate change, an intimate understanding of this process may reveal specific messaging strategies that are capable of prompting support for important climate change policies in the future. Ideally this process may even be replicated in other sub-populations that are at risk of climate change denial or exhibit particularly low levels of support for climate-focused policy. Any identified effective messaging strategies could be utilized to mobilize such populations in the future.

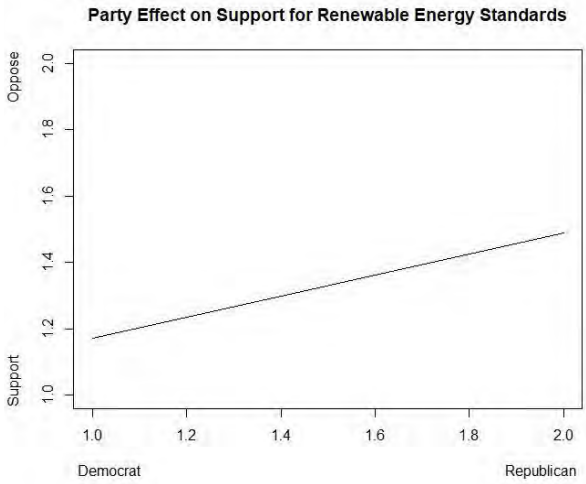
The potential applications of research findings are speculative and normatively motivated by a firm desire to sway public opinion toward support of climate-focused policy. However, this motivation is justified by the extreme risk posed by climate change and its consequences to the United States and to human society in general. As a world leader both in emissions and global norm-setting, it is imperative that the U.S. move quickly to enact effective climate change policy to avoid long-term, irreversible, and potentially catastrophic consequences. From a practical standpoint, understanding the opinion formation process and optimizing this process in a public policy context is also useful and potentially cost-saving. Significant time, money, and energy is spent on public campaigns to convince voters to support various policies on climate change and other issues. Policy-makers might find it useful and cost-effective to incorporate reliable opinion formation theoretical frameworks into policy analyses and implementation strategies. Social science researchers play a critical role in providing such data for policy-makers to use, and it is imperative to focus these efforts on issues such as climate change. Indeed, there may be no issue that is more deserving of attention, and the lack of comparatively widespread consideration it has received thus far is puzzling and troubling. It remains vitally important to continue and even prioritize the research agenda proposed here, as well as other inquiries into the social dimensions of climate change response, during the limited window in which we can adequately respond to this threat.

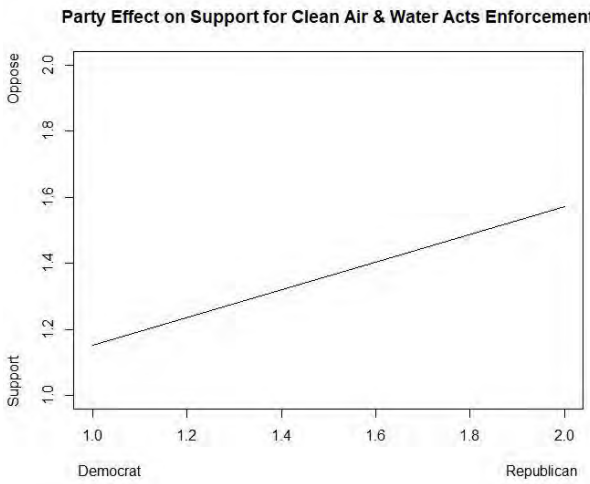
Appendix I. Effect of Party Preference on Support for Climate-Focused Policies

Millennials - Effect of Party Preference on Support for Climate-Focused Policies

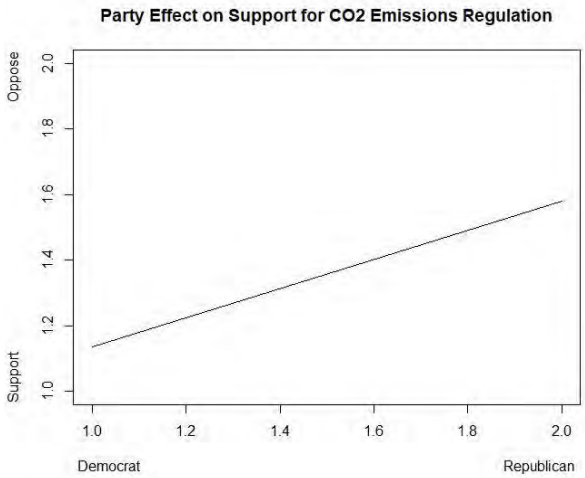


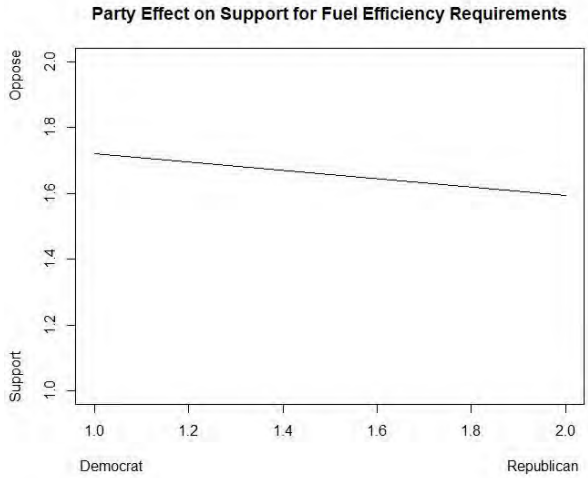


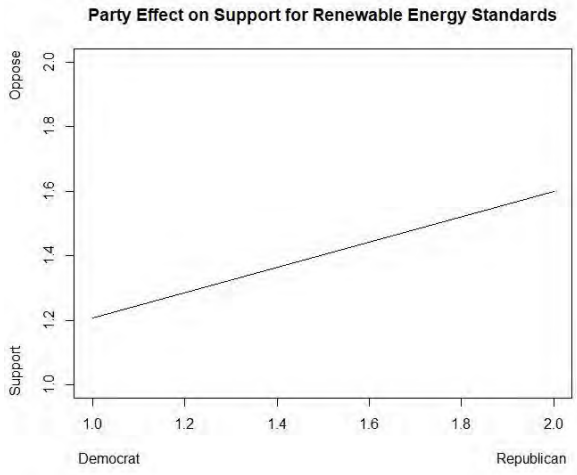


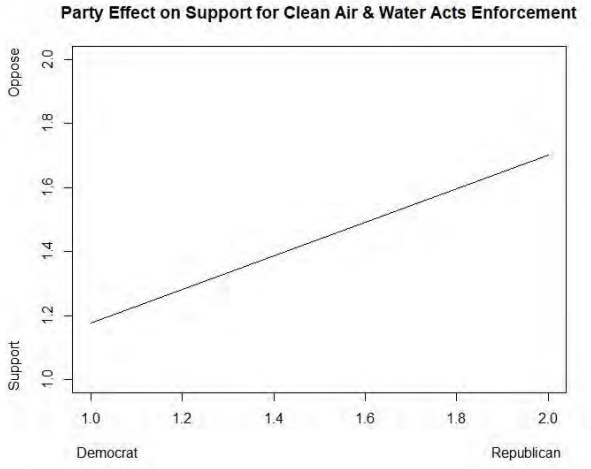


Generation X - Effect of Party Preference on Support for Climate-Focused Policies

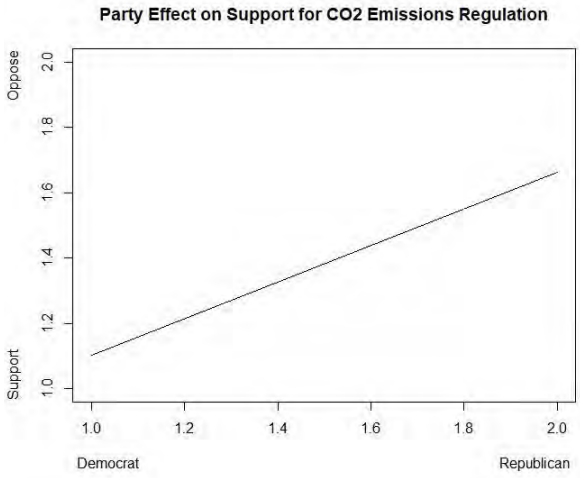


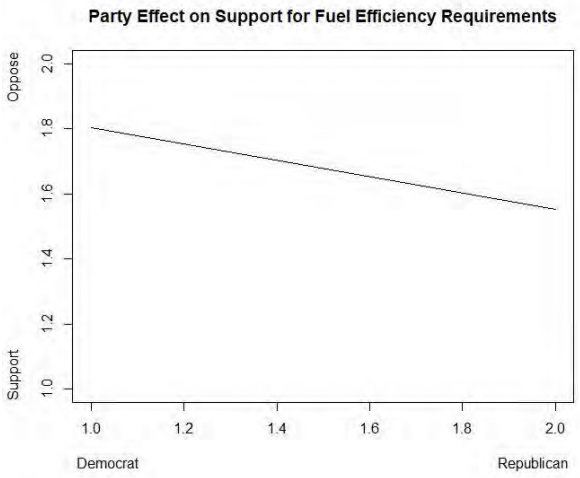


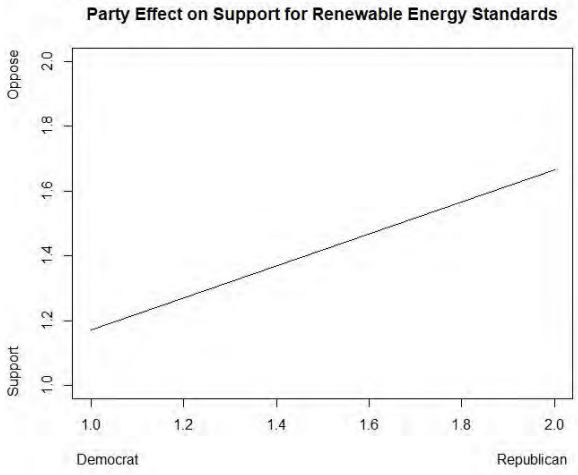


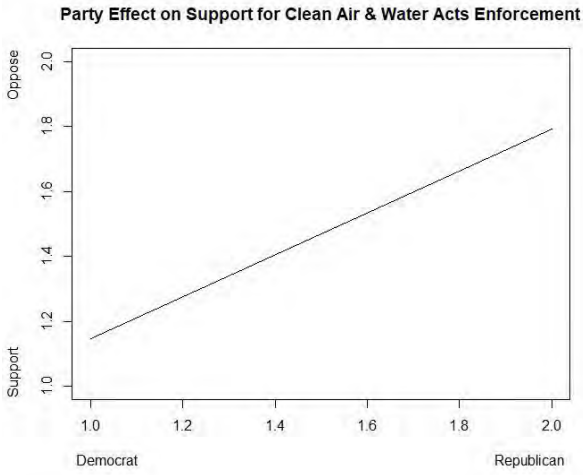


Boomers - Effect of Party Preference on Support for Climate-Focused Policies

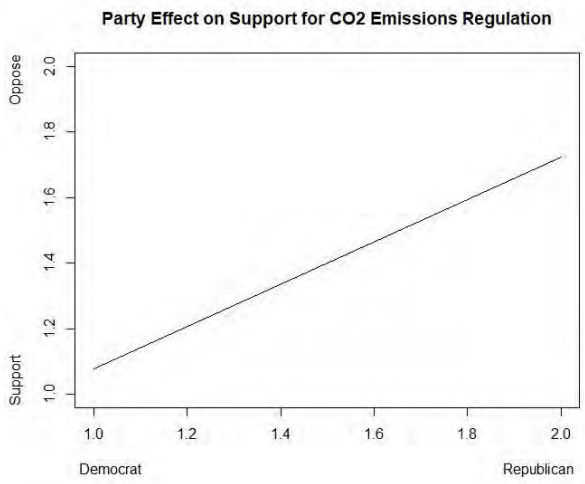


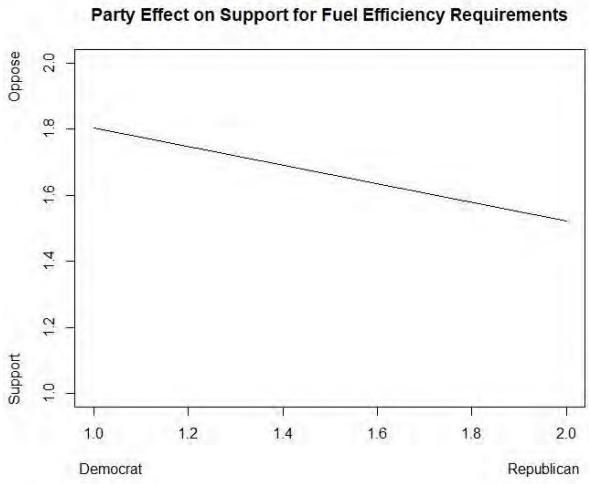


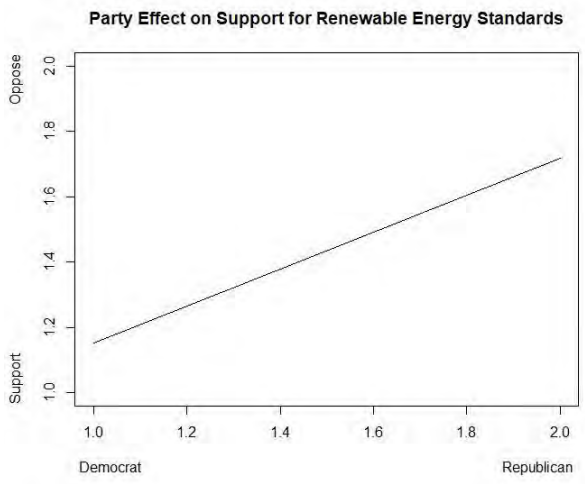


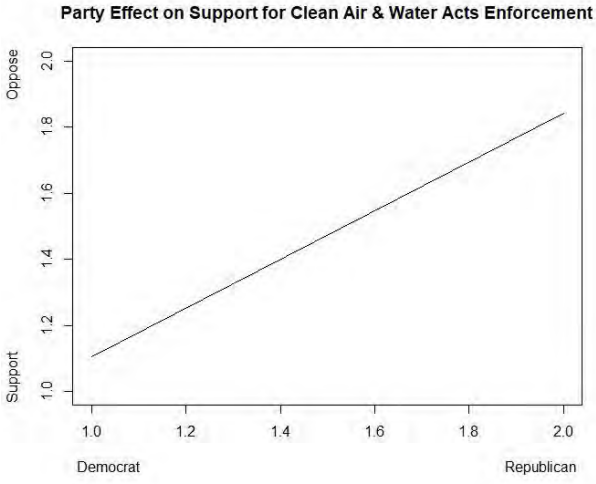


Silents - Effect of Party Preference on Support for Climate-Focused Policies

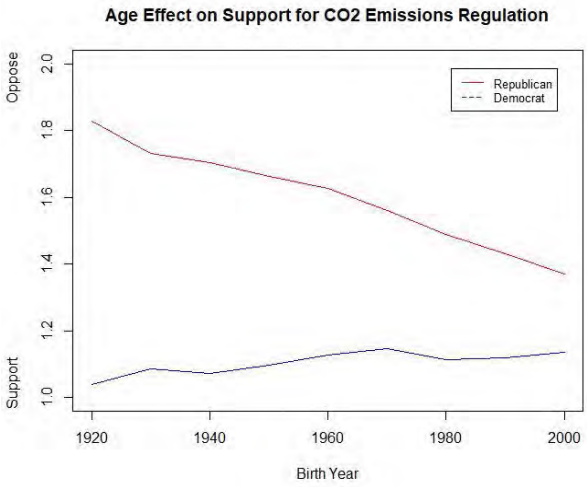


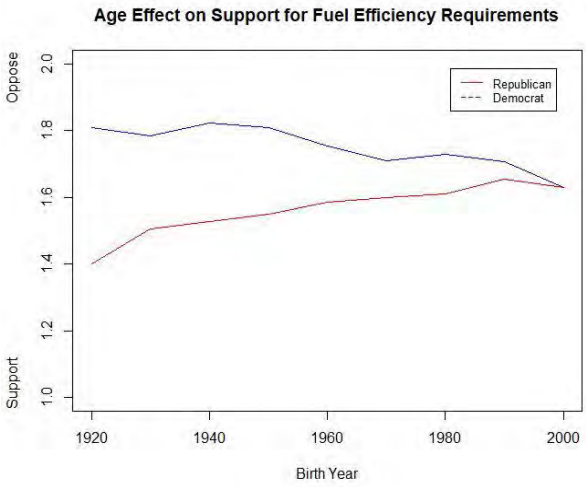


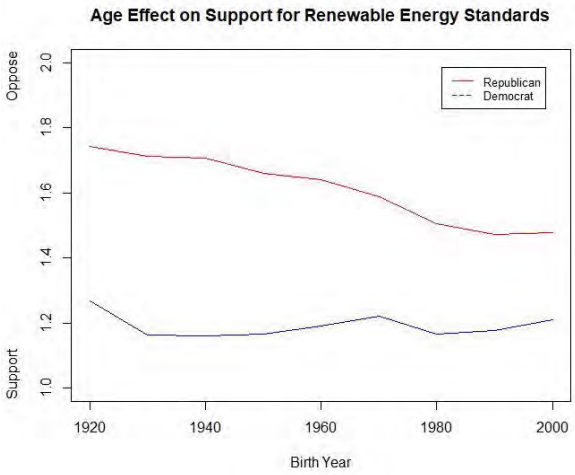


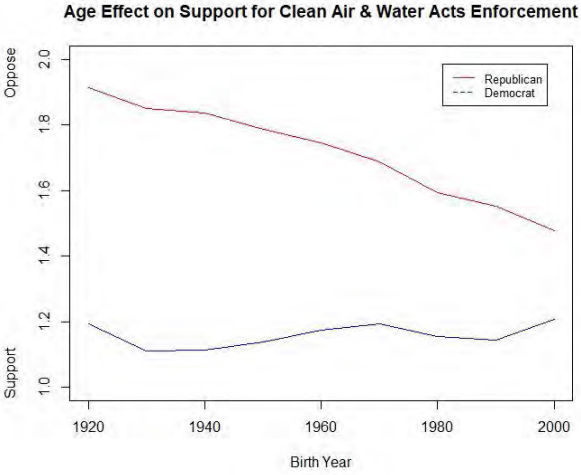


Appendix II. Effect of Age on Support for Climate-Focused Policies



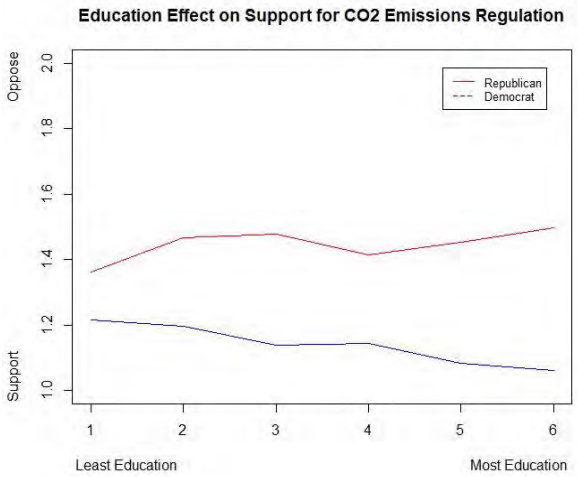


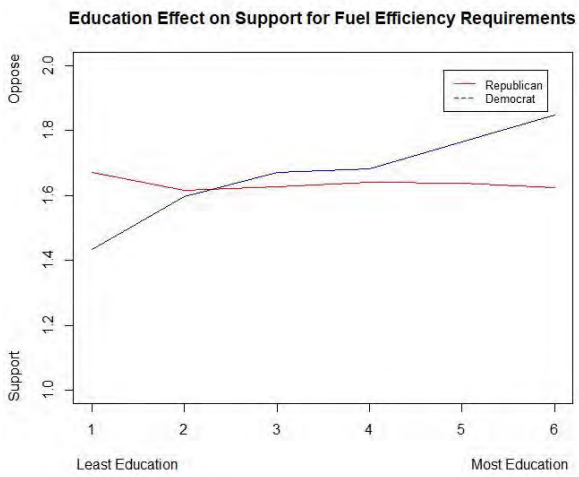


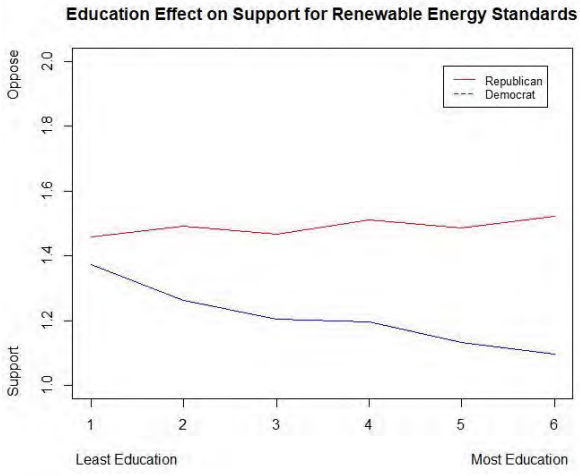


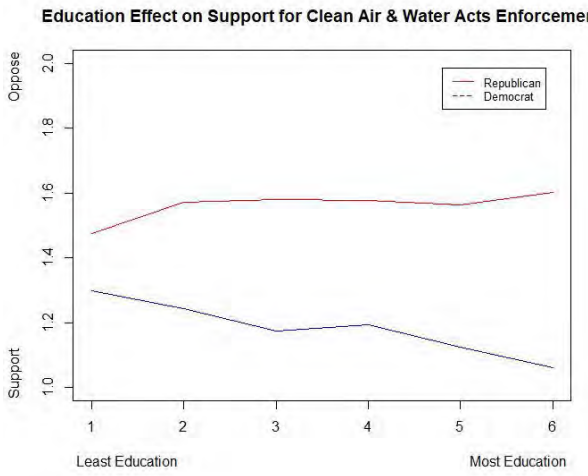
Appendix III. Effect of Education on Support for Climate-Focused Policies

Millennials - Effect of Education on Support for Climate-Focused Policies

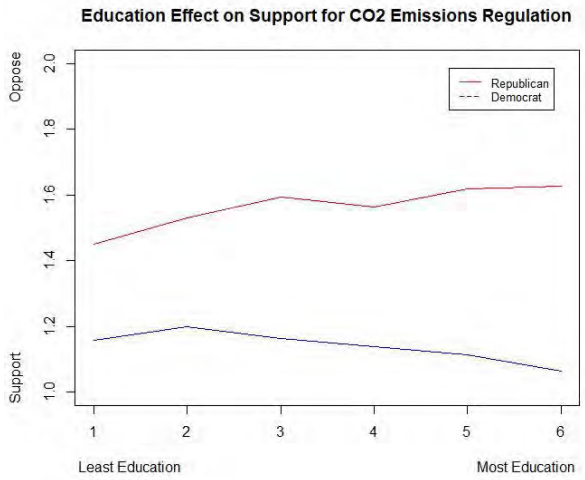


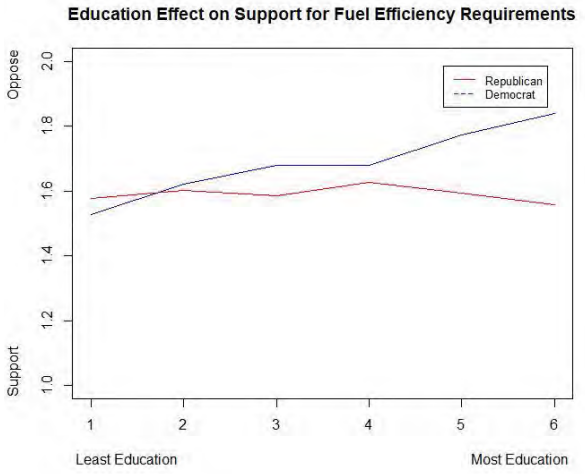


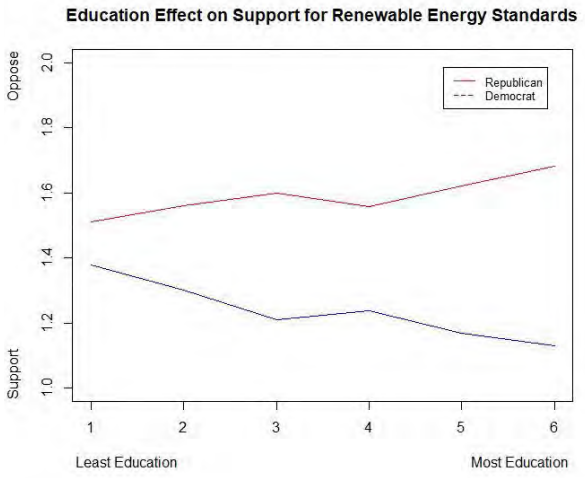


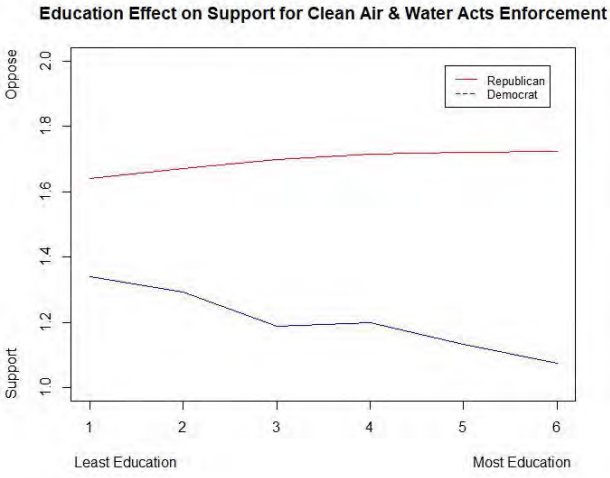


Generation X - Effect of Education on Support for Climate-Focused Policies

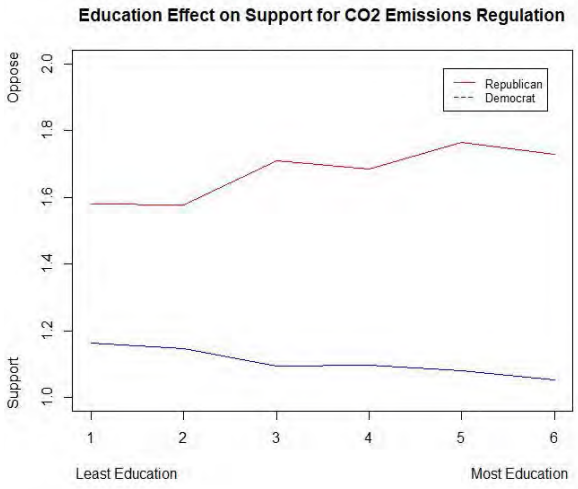


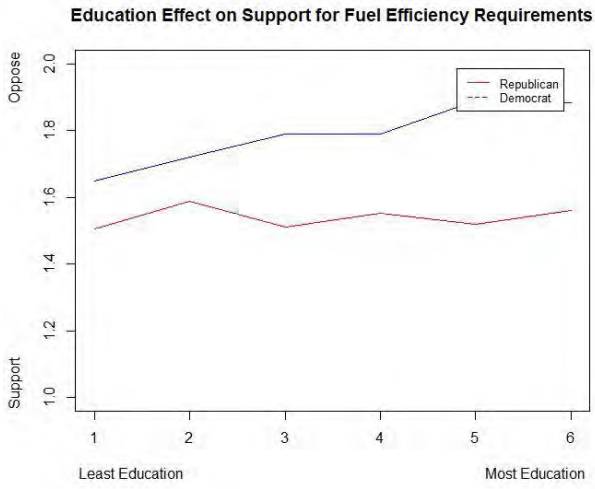


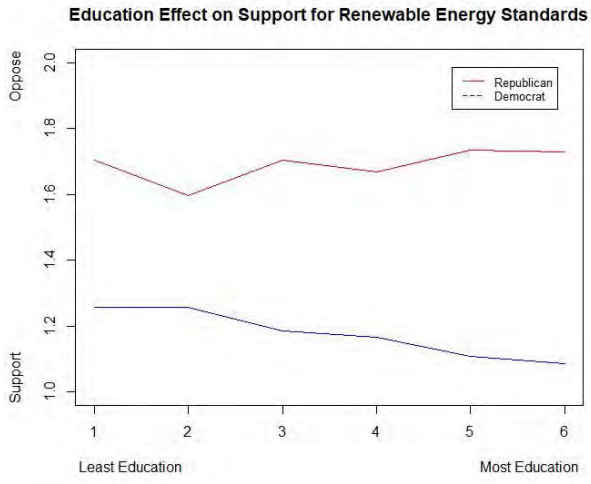


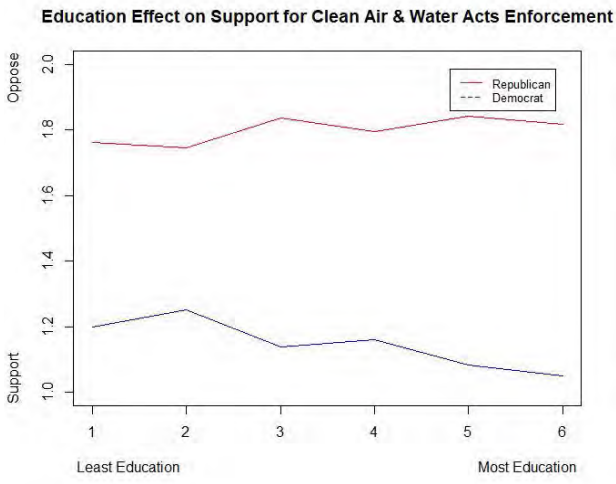


Boomers - Effect of Education on Support for Climate-Focused Policies

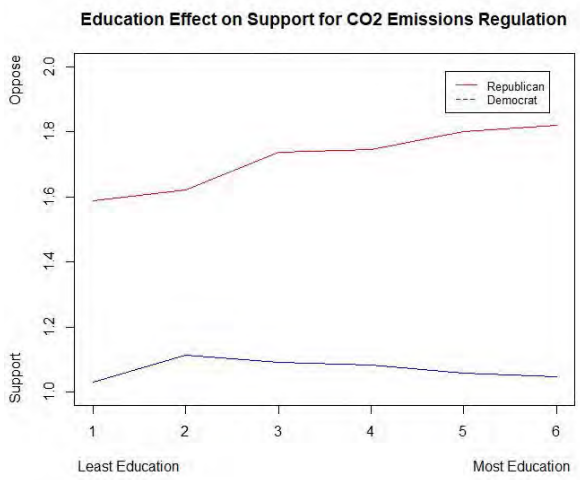


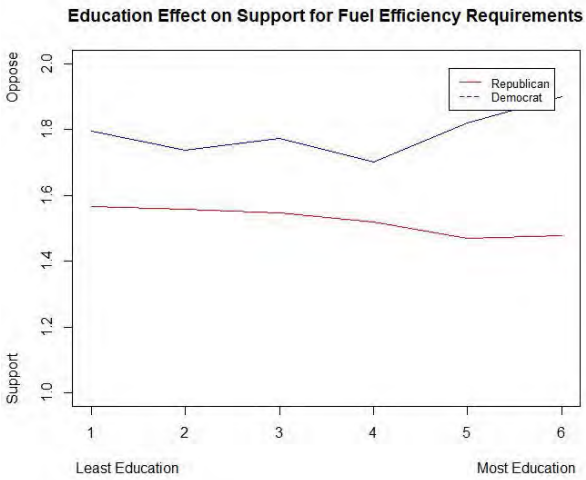


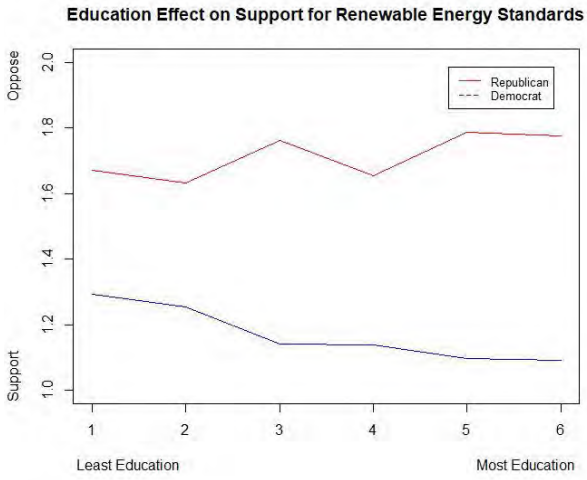


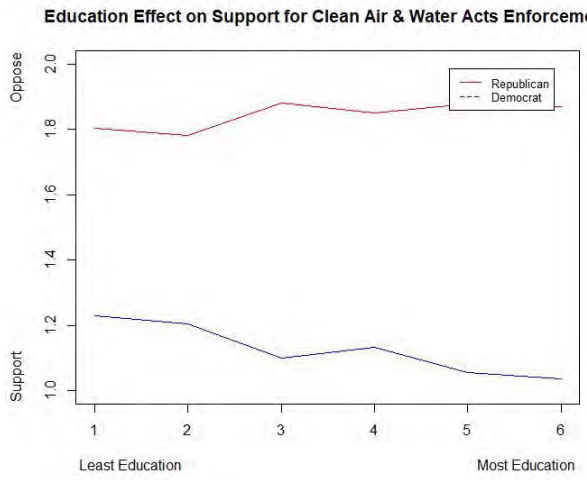


Silents - Effect of Education on Support for Climate-Focused Policies



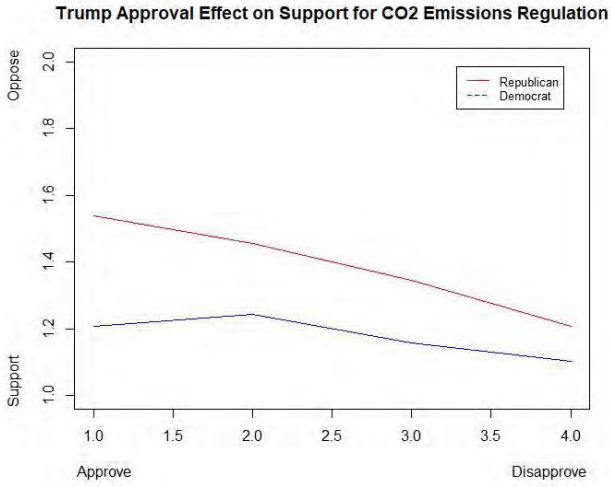


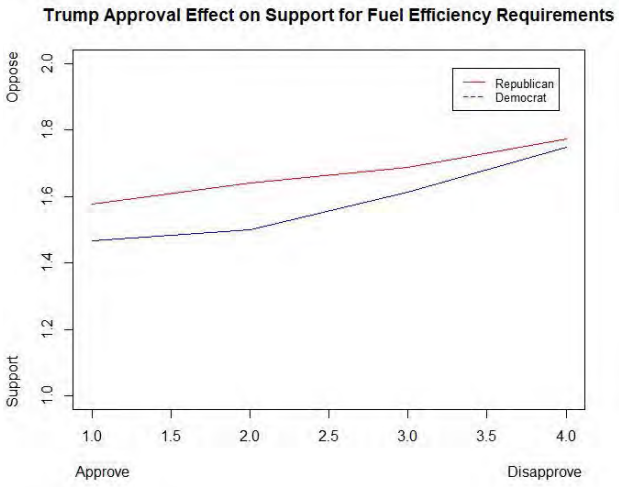


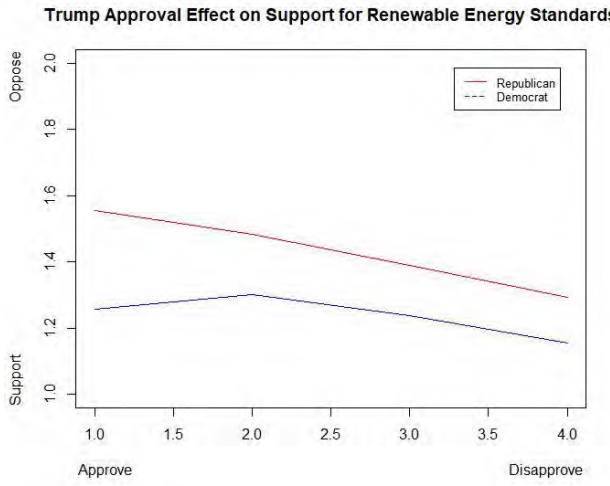


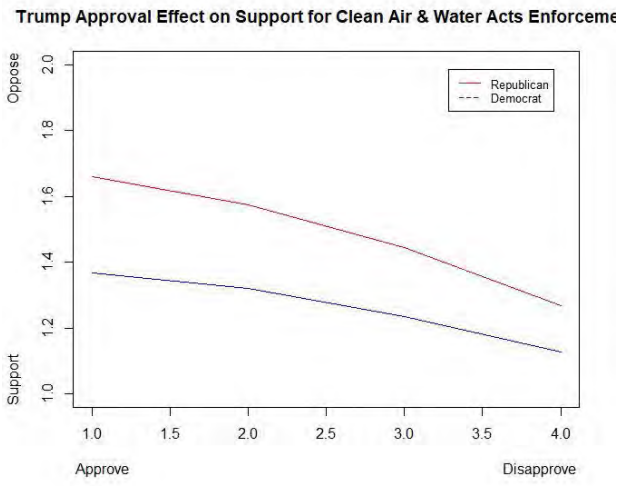
Appendix IV. Effect of Support for Donald Trump on Support for Climate-Focused Policies

Millennials - Effect of Support for Donald Trump on Support for Climate-Focused Policies

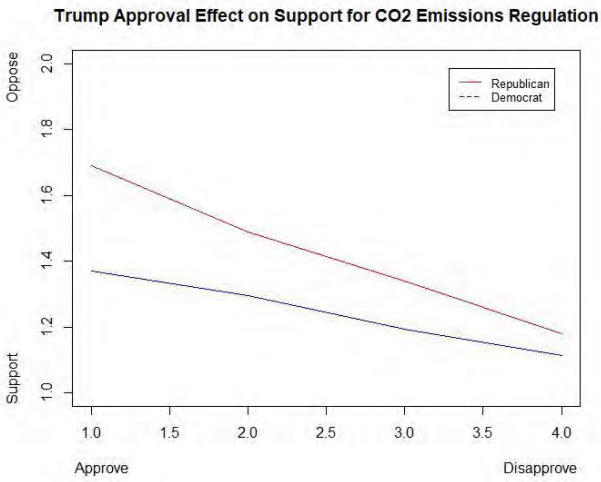


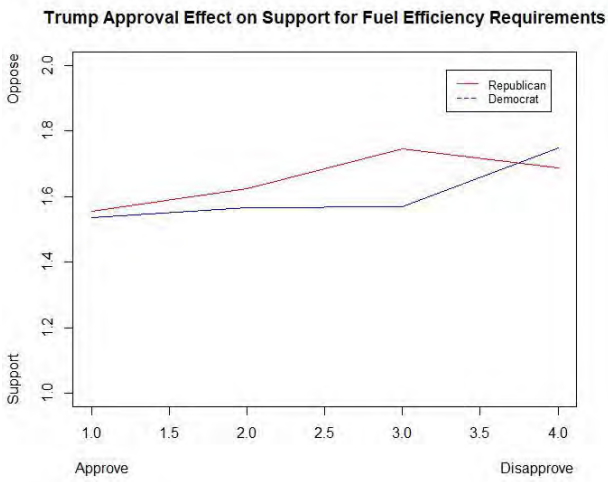


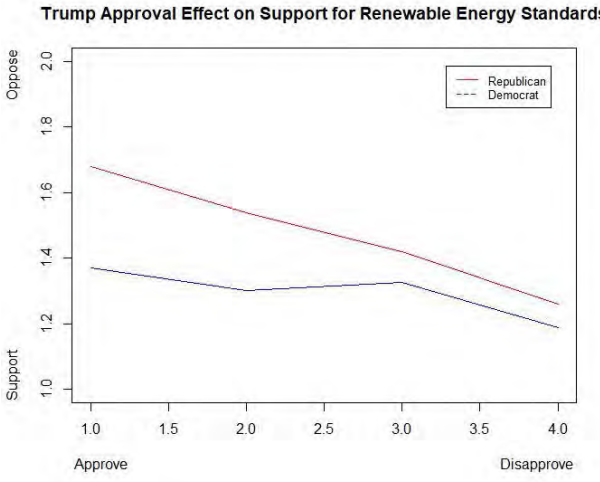


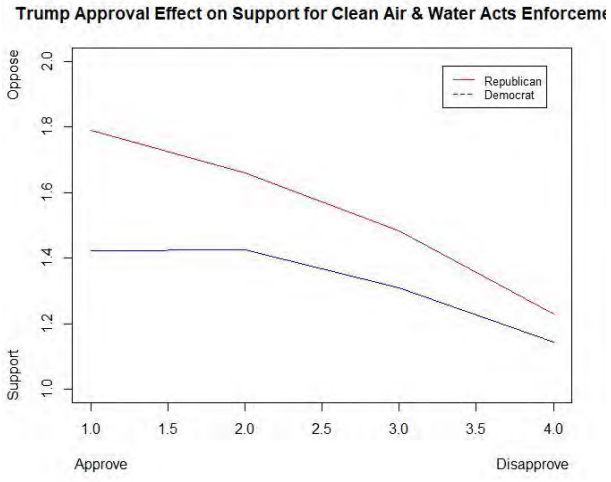


Generation X - Effect of Support for Donald Trump on Support for Climate-Focused Policies

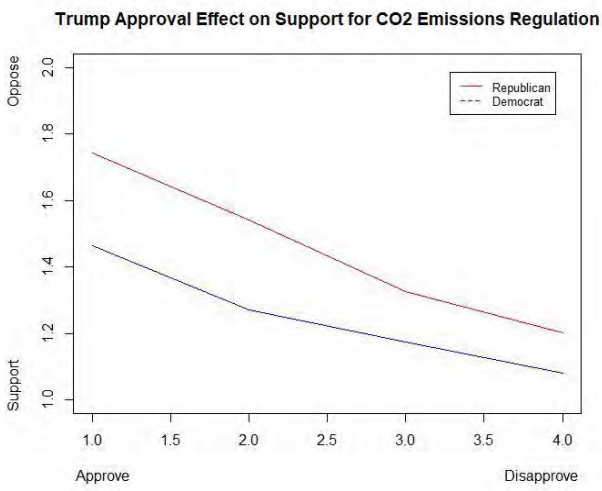


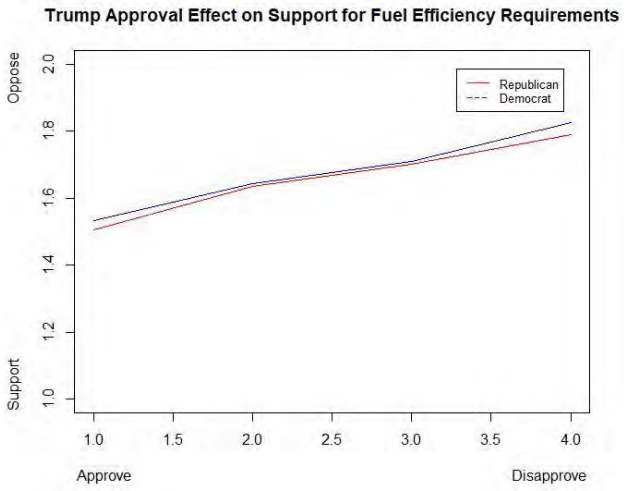


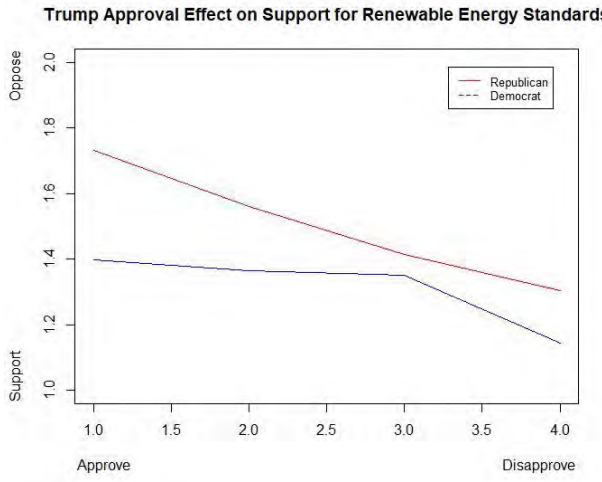


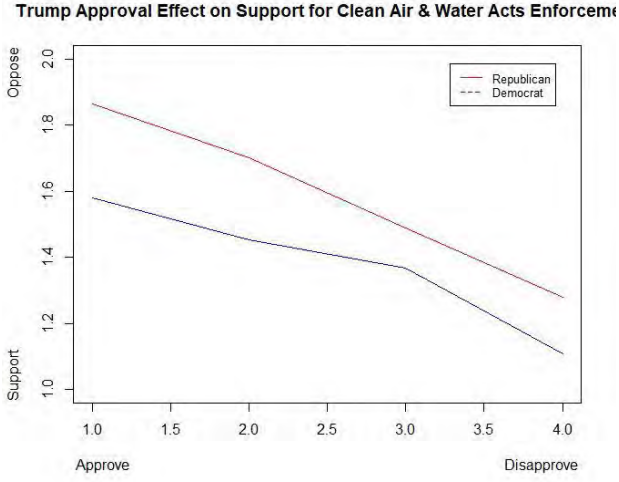


Boomers - Effect of Support for Donald Trump on Support for Climate-Focused Policies

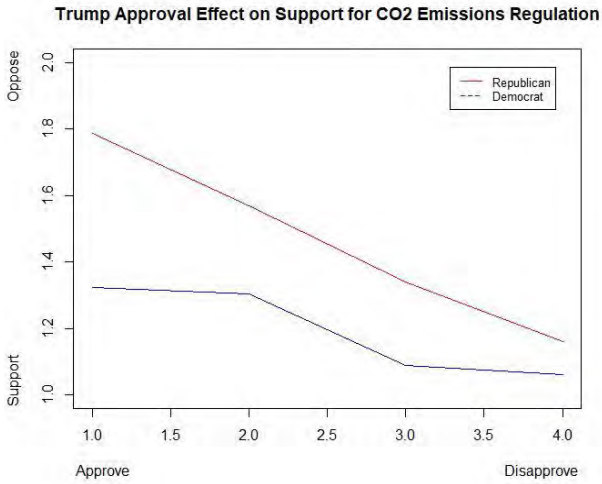


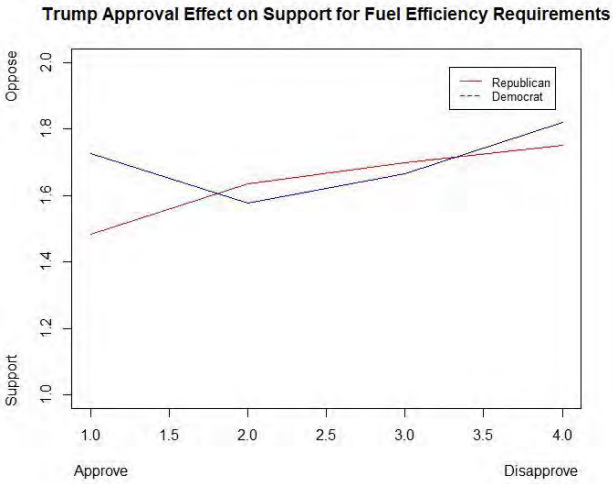


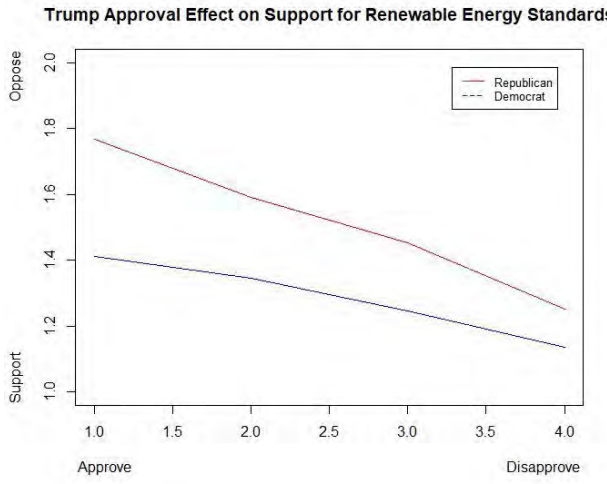


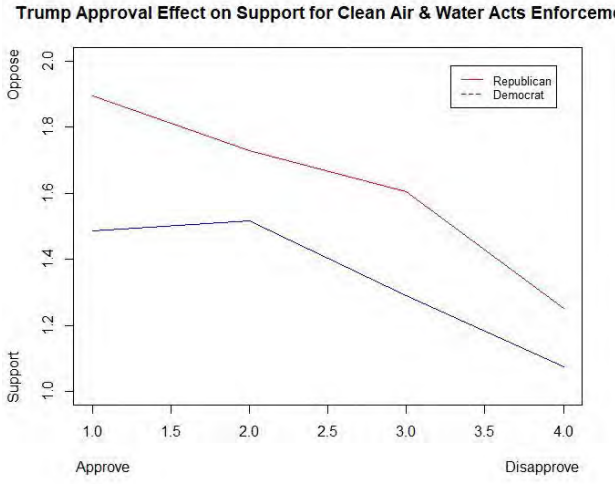


Silents - Effect of Support for Donald Trump on Support for Climate-Focused Policies



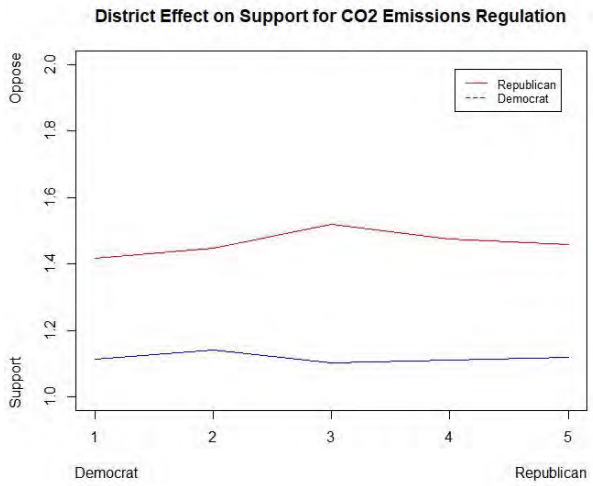


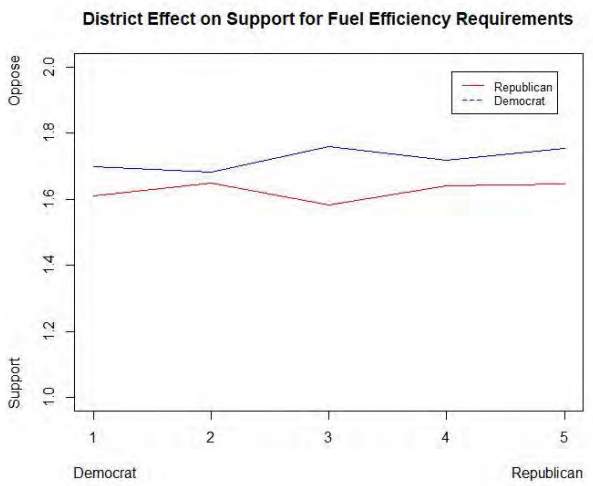


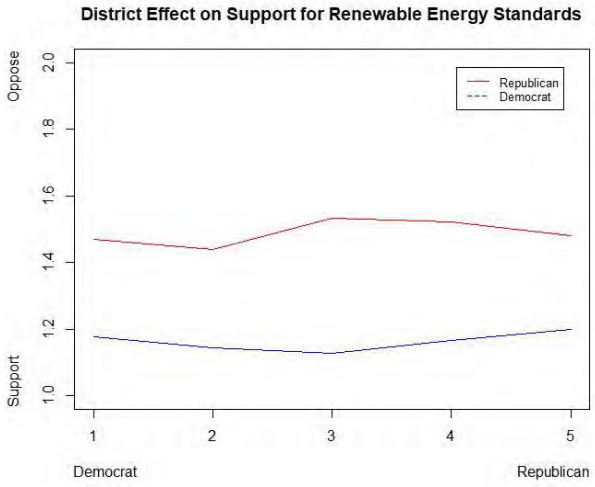


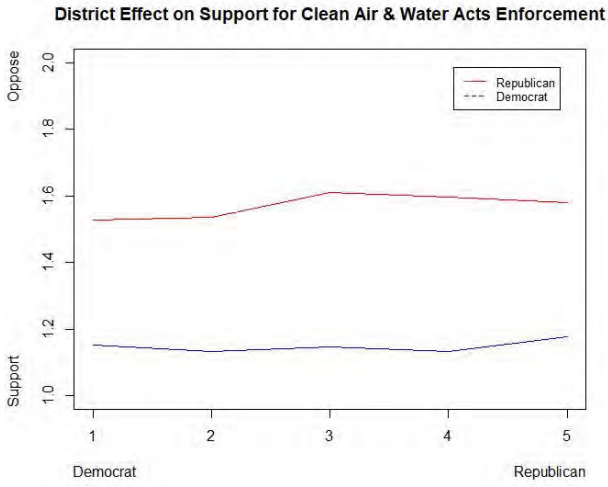
Appendix V. Effect of District Competitiveness on Support for Climate-Focused Policies

Millennials - *Effect of District Competitiveness on Support for Climate-Focused Policies*

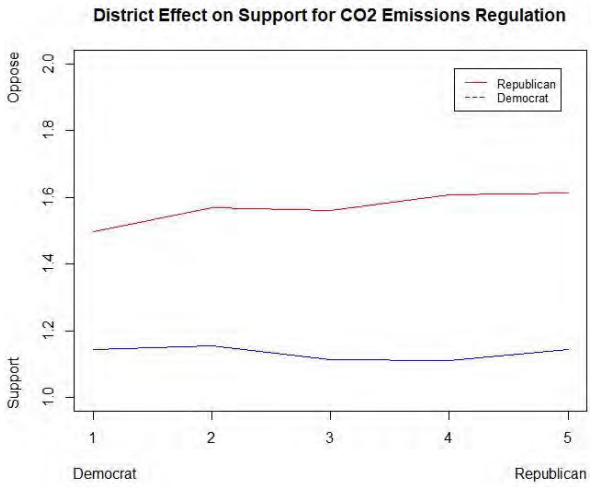


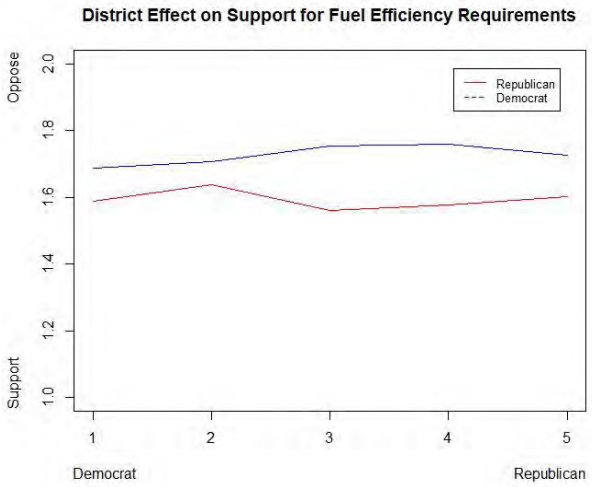


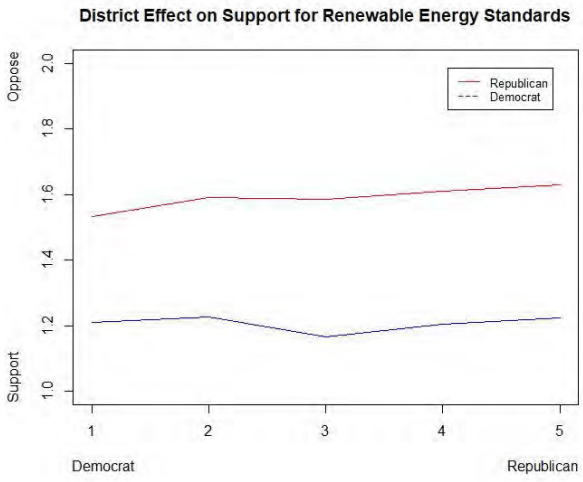


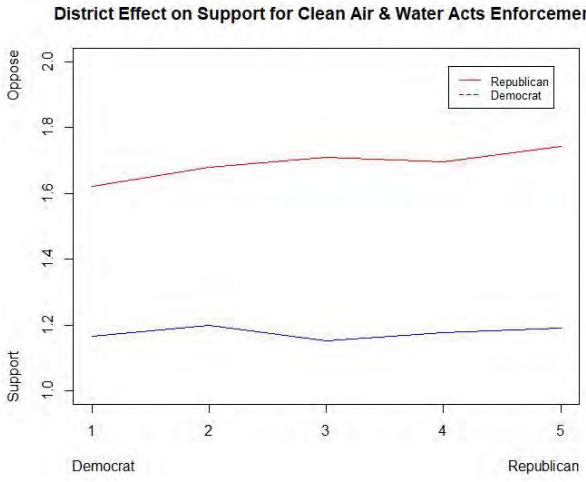


Generation X - Effect of District Competitiveness on Support for Climate-Focused Policies

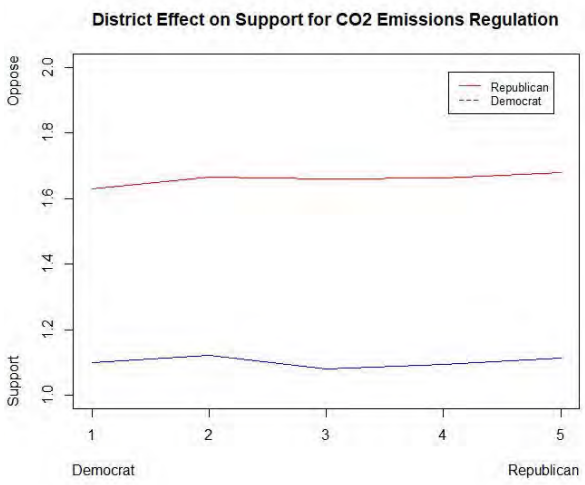


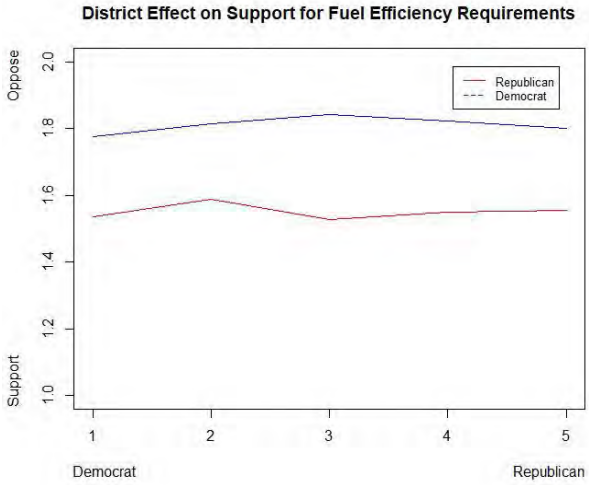


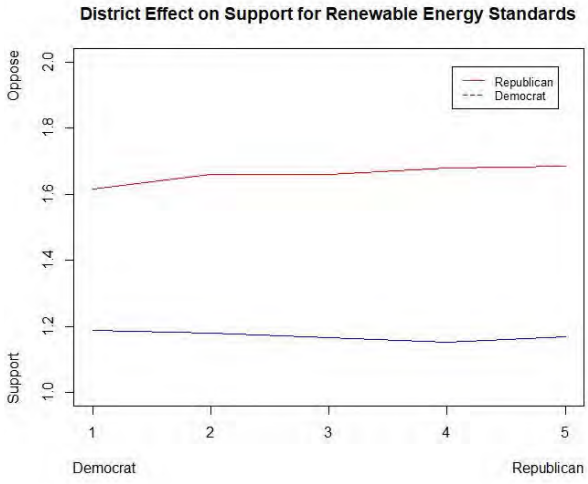


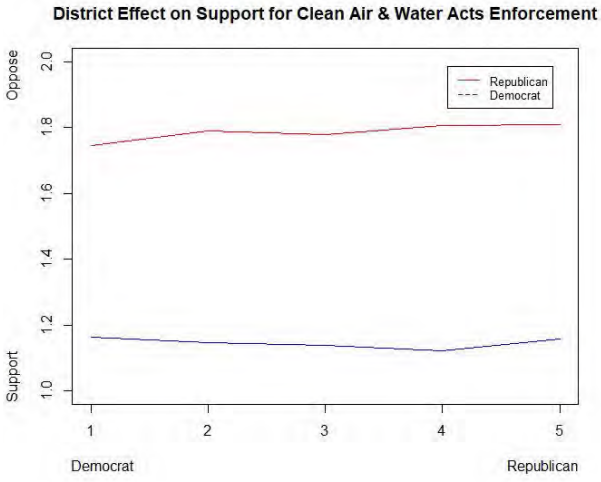


Boomers - Effect of District Competitiveness on Support for Climate-Focused Policies

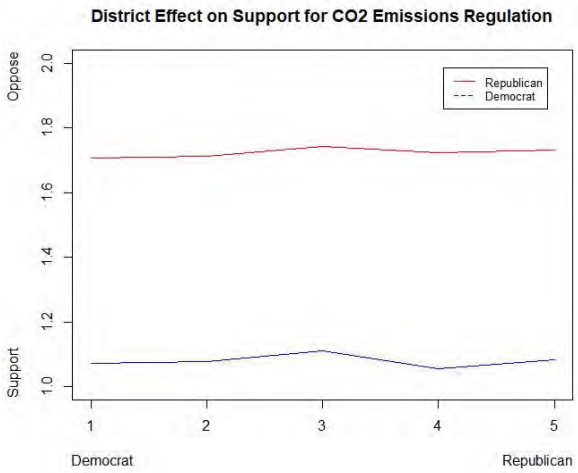


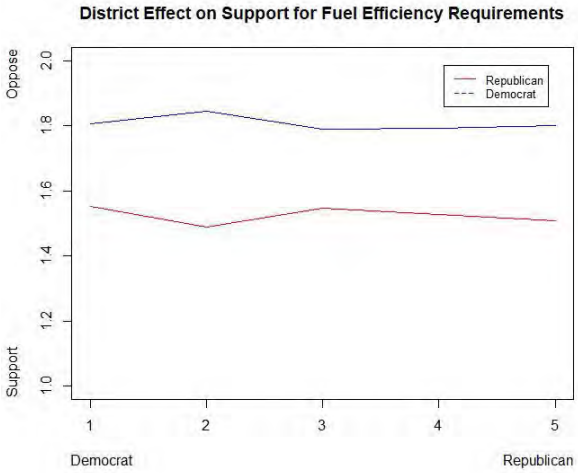


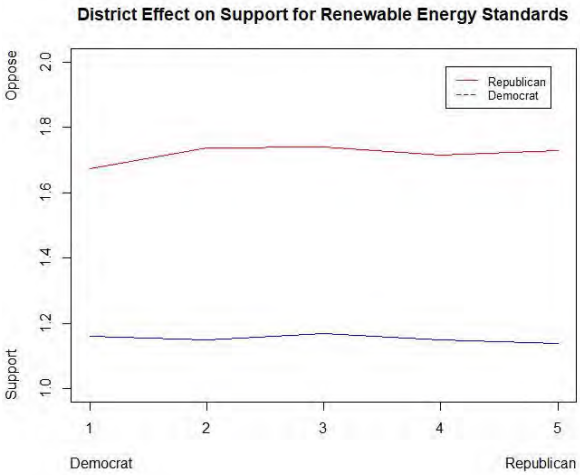


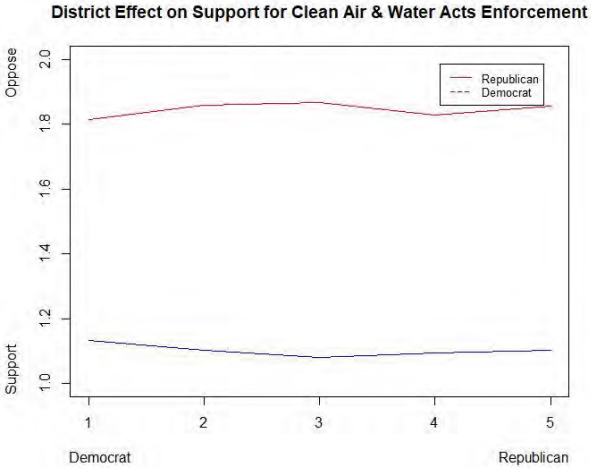


Silents - Effect of District Competitiveness on Support for Climate-Focused Policies









References

Althaus, S. L. (1998). Information Effects in Collective Preferences. *American Political Science Review*, *92*(3), 545–558.

Anderson, M., & Jiang, J. (2018, November 28). *Teens' Social Media Habits and Experiences.* Pew Research Center. https://www.pewresearch.org/internet/2018/11/28/teens-social-media-habits-and-experiences/.

Bartels, Larry M. (2002). Democracy with Attitudes. In M. MacKuen, & G. Rabinowitz (Eds.), *Electoral democracy* (48-82). Ann Arbor: University of Michigan Press.

Bassetti, F. (2019, May 22). *Environmental Migrants: Up to 1 billion by 2050*. Foresight. https://www.climateforesight.eu/migrations/environmental-migrants-up-to-1-billion-by-2050/.

Baumeister, R. F., & Leary, M. R. (1995). The Need to Belong: Desire for Interpersonal Attachments as A Fundamental Human Motivation. *Psychological Bulletin, 117*(3): 497–529.

Benegal, S. D., & Scruggs, L. A. (2018). Correcting misinformation about climate change: the impact of partisanship in an experimental setting. *Climatic Change*, *148*(1-2), 61–80.

Bolsen, T., Druckman, J. N., & Cook, F. L. (2013). The Influence of Partisan Motivated Reasoning on Public Opinion. *Political Behavior, 36*(2), 235–262.

Brenan, M., & Saad, L. (2019, September 4). *Global Warming Concern Steady Despite Some Partisan Shifts*. Gallup.

https://news.gallup.com/poll/231530/global-warming-concern-steady-despite-partisan-shifts.aspx.

Brulle, R. J., Carmichael, J., & Jenkins, J. C. (2012). Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002–2010. *Climatic Change*, *114*(2), 169–188.

Caplan, B. D. (2006). *The myth of the rational voter: why democracies choose bad policies*. Princeton University Press.

CCES. (2018). *Cooperative Congressional Election Study.* Harvard University. https://cces.gov.harvard.edu/.

Chaiken, S. (1980). Heuristic Versus Systematic Information Processing and The Use of Source Versus Message Cues in Persuasion. *Journal of Personality and Social Psychology, 39*(5): 752–66.

Chong, D., & Druckman, J. N. (2007). Framing Public Opinion in Competitive Democracies. *American Political Science Review, 101*(4): 637–55.

Cialdini, R. B. (2003). Crafting Normative Messages to Protect the Environment. *Current Directions in Psychological Science 12*(4): 105–109.

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A Focus Theory of Normative Conduct: Recycling the Concept of Norms to Reduce Littering in Public Places. *Journal of Personality and Social Psychology, 58*(6): 1015–1026.

Climate Central. (2019, October 29). *Flooded Future: Global vulnerability to sea level rise worse than previously understood.* Climate Central. https://www.climatecentral.org/pdfs/2019CoastalDEMReport.pdf.

Collomb, J.-D. (2014). The Ideology of Climate Change Denial in the United States. *European Journal of American Studies, 9*(1).

Conger, J. A. (2000). How 'Gen X' Managers Manage. In J. S. Osland, D. A. Kolb, & I. W. Rubin (Eds.), *The Organizational Behavior Reader* (9-19). New Jersey: Prentice Hall.

Cook, J., Oreskes, N., Doran, P. T., Anderegg, W. R. L., Verheggen, B., Maibach, E. W., … Rice, K. (2016). Consensus on consensus: a synthesis of consensus estimates on human-caused global warming. *Environmental Research Letters, 11*(4), 048002.

Corner, A., Roberts, O., Chiari, S., Völler, S., Mayrhuber, E. S., Mandl, S., & Monson, K. (2015). How do young people engage with climate change? The role of knowledge, values, message framing, and trusted communicators. *Wiley Interdisciplinary Reviews: Climate Change, 6*(5), 523–534.

Costanza, D. P., Badger J. M., Fraser R. L, Severt J. B., & Gade P. A. (2012). Generational differences in work-related attitudes: A meta-analysis. *Journal of Business and Psychology, 27*(4), 375-394.

Czopp, A. M. (2013). The Passive Activist: Negative Consequences of Failing to Confront Antienvironmental Statements. *Ecopsychology*, *5*(1), 17–23.

Del Valle, G. (2018, October 12). *Can consumer choices ward off the worst effects of climate change?* An expert explains. Vox. https://www.vox.com/the-goods/2018/10/12/17967738/climate-change-consumer-choices-green-renewable-energy.

Doran, P. T., & Zimmerman, M. K. (2009). Examining the Scientific Consensus on Climate Change. *Eos, Transactions, American Geophysical Union, 90*(3), 22-23.

Downs, A. (1957). An Economic Theory of Political Action in a Democracy. *Journal of Political Economy, 65*(2), 135–150.

Dunlap, R. E. (2008. May 29). *Climate-Change Views: Republican-Democratic Gaps Expand.* Gallup. https://news.gallup.com/poll/107569/climatechange-views-republicandemocratic-gaps-expand.aspx.

The Economist. (2019, February 9). ExxonMobil gambles on growth. *The Economist.* https://www.economist.com/briefing/2019/02/09/exxonmobil-gambles-on-growth.

Edsall, T. B. (2019, June 19). Trump is changing the shape of the Democratic party, too. *The New York Times*. https://www.nytimes.com/2019/06/19/opinion/trump-racial-resentment.html.

Finegold, D., Mohrman, S., & Spreitzer, G. M. (2002). Age effects on the Predictors of Technical workers' Commitment and Willingness to Turnover. *Journal of Organizational Behavior, 23*(5), 655-674.

Fiske, S.T. (2010). *Social beings: Core motives in social psychology.* New York: Wiley.

Gerber, A. S., & Rogers, T. (2009). Descriptive social norms and motivation to vote: Everybody's voting and so should you. *The Journal of Politics, 71*(1), 178–191.

Gibbens, S. (2019, February 6). The polar vortex, explained. *National Geographic.* https://www.nationalgeographic.com/environment/weather/reference/polar-vortex/.

Gilens, M., & Murakawa, N. (2002). Elite cues and political decision-making. *Political Decision Making, Deliberation and Participation 6*, 15-49.

Gillis, J., & Popovich, N. (2017, June 1). The U.S. Is the Biggest Carbon Polluter in History. It Just Walked Away From the Paris Climate Deal. *The New York Times*. https://www.nytimes.com/interactive/2017/06/01/climate/us-biggest-carbon-polluter-in-history-will-it-walk-away-from-the-paris-climate-deal.html.

Glynn, C. J., Huge, M. E., & Lunney, C. A. (2009). The Influence of Perceived Social Norms on College Students Intention to Vote. *Political Communication*, *26*(1), 48–64.

Goldstein, N., Cialdini, R. B, & Griskevicius, V. (2008). A Room with a Viewpoint: Using Norm-Based Appeals to Motivate Conservation Behaviors in a Hotel Setting. *Journal of Consumer Research, 35*(3), 472-482.

Goode, C., Balzarini, R. H., & Smith, H. J. (2014). Positive peer pressure: Priming member prototypicality can decrease undergraduate drinking. *Journal of Applied Social Psychology*, *44*(8), 567–578.

Gramling, C., & Hamers, L. (2018, November 8). *Here's how much climate change could cost the U.S.* ScienceNews. https://www.sciencenews.org/article/climate-change-economic-cost-united-states.

Gray, A. (2016, September 22). *Young Conservatives' Views on Energy & The Environment.* YC4ER. http://yc4er.org/ycer-poll-young-conservatives-views-on-energy-the-environment/.

Green, D. P., & Shapiro, I. (1994). *Pathologies of Rational Choice Theory: A Critique of Applications in Political Science.* New Haven: Yale University Press.

Griffin, P. (2017). *CDP Carbon Majors Report 2017.* Carbon Disclosure Project. https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.co

m/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1499691240.

Griskevicius, V., Cialdini, R. B., & Goldstein, N. J. (2008). Social Norms: an underestimated and underemployed lever for managing climate change. *International Journal of Sustainability Communication, 3,* 5-13.

Groenendyk, E. W. (2013). *Competing Motives in the Partisan Mind.* Oxford, UK: Oxford University Press.

Hample, D. (1985). Refinements on the cognitive model of argument: Concreteness, involvement and group scores. *Western Journal of Speech Communication*, *49*(4), 267–285.

Hegselmann, R., & Krause, U. (2002). Opinion Dynamics and Bounded Confidence Models, Analysis and Simulation. *Journal of Artificial Societies and Social Simulation, 5*(3).

Herrnstein, R. J. (1990). Rational choice theory: Necessary but not sufficient. *American Psychologist*, *45*(3), 356–367.

Hovi, J., Sprinz, D. F., & Bang, G. (2010). Why the United States did not become a party to the Kyoto Protocol: German, Norwegian, and US perspectives. *European Journal of International Relations*, *18*(1), 129–150.

Howe, P. D., Mildenberger, M., Marlon, J. R., & Leiserowitz, A. (2015). Geographic variation in opinions on climate change at state and local scales in the USA. *Nature Climate Change*, *5*(6), 596–603.

Howe, P. D., Marlon, J. R., Mildenberger, M., & Shield, B. S. (2019). How will climate change shape climate opinion? *Environmental Research Letters*, *14*(11), 113001.

Insurance Information Institute. (2019). *Facts + Statistics: Wildfires.* Insurance Information Institute, Inc. https://www.iii.org/fact-statistic/facts-statisticswildfires#Wildfires%20by%20year.

Jasny, L., Waggle, J., & Fisher, D. R. (2015). An empirical examination of echo chambers in US climate policy networks. *Nature Climate Change*, *5*(8), 782–786.

Jones, J. M. (2019, September 4). *Americans Continue to Embrace Political Independence.* Gallup. https://news.gallup.com/poll/245801/americans-continue-embrace-political-independence.aspx.

Kabaservice, G. (2019, August 8). *When will Republicans face demographic reality?* Niskanen Center. https://www.niskanencenter.org/when-will-republicans-face-demographic-reality/.

Kahan, D. M. (2013). Ideology, Motivated Reasoning, and Cognitive Reflection: An Experimental Study. *Judgment and Decision Making*, *8*(4), 407–424.

Kahn, M., Mohaddes, K., Ng, R., Pesaran, M., Raissi, M., & Yang, J.-C. (2019). Long-Term Macroeconomic Effects of Climate Change. *IMF Working Papers*, *19*(19).

Kam, C. D. (2007). When Duty Calls, Do Citizens Answer? *The Journal of Politics, 69*(1): 17–29.

Katzenbach, J. R., & Khan, Z. (2010, April 06). Positive Peer Pressure: A Powerful Ally to Change. *Harvard Business Review.* https://hbr.org/2010/04/positive-peer-pressure-a-power.

Klar, S. (2013). Identity and Engagement among Political Independents in America. *Political Psychology*, *35*(4), 577–591.

Kosoff, M. (2018, November 16). *'It Gives Me Hope': Millennial Women Flex Their Political Power, with Mixed Results.* Vanity Fair. https://www.vanityfair.com/news/2018/11/millennial-women-political-power-midterms-survey.

Kuklinski, J. H., Quirk, P. J., Jerit, J., Schwieder, D., & Rich, R. F. (2000). Misinformation and the Currency of Democratic Citizenship. *The Journal of Politics*, *62*(3), 790–816.

Leeper, T. J., & Slothuus, R. (2014). Political Parties, Motivated Reasoning, and Public Opinion Formation. *Political Psychology*, *35*, 129–156.

Limon, M. (2009). Human Rights and Climate Change: Constructing a Case for Political Action. *Harvard Environmental Law Review, 33,* 439-476.

Lorenz, J. (2007). Continuous Opinion Dynamics Under Bounded Confidence: A Survey. *International Journal of Modern Physics C*, *18*(12), 1819–1838.

McDonald, R. I., Chai, H. Y., & Newell, B. R. (2015). Personal experience and the 'psychological distance' of climate change: An integrative review. *Journal of Environmental Psychology*, *44*, 109–118.

McDonald, R. I., & Crandall, C. (2015). Social norms and social influence. *Current Opinion in Behavioral Sciences, 3*, 147-151.

Melillo, J. M., Richmond, T. C., & Yohe, G. W. (2014). *Climate Change Impacts in the United States: The Third National Climate Assessment.* U.S. Global Change Research Program.

https://www.globalchange.gov/browse/reports/climate-change-impacts-united-states-third-national-climate-assessment-0.

Mooney, C. (2018, June 1). Trump withdrew from the Paris climate deal a year ago. Here's what has changed. *Washington Post*. https://www.washingtonpost.com/news/energy-environment/wp/2018/06/01/trump-withdrew-from-the-paris-climate-plan-a-year-ago-heres-what-has-changed/.

Morley, D. D. (1987). Subjective message constructs: A theory of persuasion. *Communication Monographs*, *54*(2), 183–203.

Moser, S. C. (2009). Communicating climate change: history, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change*, *1*(1), 31–53.

Moussaïd, M., Kämmer J. E., Analytis P. P., & Neth, H. (2013). Social Influence and the Collective Dynamics of Opinion Formation. *PLoS ONE 8*(11): e78433.

Mullinix, K. J. (2017). Civic Duty and Political Preference Formation. *Political Research Quarterly*, *71*(1), 199–214.

Nickerson, D. W. (2008). Is Voting Contagious? Evidence from Two Field Experiments. *American Political Science Review*, *102*(1), 49–57.

Nisbet, M. C. (2009). Communicating Climate Change: Why Frames Matter for Public Engagement. *Environment: Science and Policy for Sustainable Development*, *51*(2), 12–23.

Noar, S. M. (2018). *What Do Survey Data Really Mean? Considering Issues of Casualty and Temporality in Survey.* National Institute of Dental and Craniofacial Research. https://www.nidcr.nih.gov/grants-funding/grant-programs/behavioral-social-sciences-rese

arch-program/what-do-survey-data-really-mean-considering-issues-of-casualty-and-temporality-in-survey.

Nolan, J. M., Schultz, P. W., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2008). Normative Social Influence is Underdetected. *Personality and Social Psychology Bulletin, 34*(7), 913–923.

Ojala, M. (2012). Hope and climate change: the importance of hope for environmental engagement among young people. *Environmental Education Research*, *18*(5), 625–642.

O'Neill, S., & Nicholson-Cole, S. (2009). 'Fear Won't Do It' Promoting Positive Engagement With Climate Change Through Visual and Iconic Representations. *Science Communication*, *30*(3), 355–379.

Orlove, B. (2010). Time Horizons and Climate Change. *Weather, Climate, and Society*, *2*(1), 5–7.

Page, B. I., & Shapiro, R. Y. (1992). *The rational public: fifty years of trends in Americans policy preferences*. The University of Chicago Press.

Petty, R. E., & Cacioppo, J. T. (1986). *Attitudes and Persuasion: Classic and Contemporary Approaches.* Boulder: Westview Press.

Pew Research 2015. (2015, May 11). *Party affiliation by region - Religion in America: U.S. Religious Data, Demographics and Statistics.* Pew Research Center. https://www.pewforum.org/religious-landscape-study/compare/party-affiliation/by/region/.

Pew Research 2016. (2016, October 4). *The Politics of Climate Change.* Pew Research Center. https://www.pewresearch.org/science/2016/10/04/the-politics-of-climate/.

Pew Research 2017a. (2017, May 17). *Partisan Identification Is 'Sticky,' but About 10% Switched Parties Over the Past Year.* Pew Research Center. https://www.people-press.org/2017/05/17/partisan-identification-is-sticky-but-about-10-switched-parties-over-the-past-year/.

Pew Research 2017b. (2017, October 5). *The Partisan Divide on Political Values Grows Even Wider.* Pew Research Center. https://www.people-press.org/2017/10/05/the-partisan-divide-on-political-values-grows-even-wider/.

Pew Research 2018a. (2018, March 1). *The Generation Gap in American Politics.* Pew Research Center. https://www.people-press.org/2018/03/01/the-generation-gap-in-american-politics/.

Pew Research 2018b. (2018, March 28). *Wide Gender Gap, Growing Educational Divide in Voters' Party Identification.* Pew Research Center. https://www.people-press.org/2018/03/20/wide-gender-gap-growing-educational-divide-in-voters-party-identification/.

Pew Research 2018c. (2018, May 14). *Majorities See Government Efforts to Protect the Environment as Insufficient.* Pew Research Center. https://www.pewresearch.org/science/2018/05/14/majorities-see-government-efforts-to-protect-the-environment-as-insufficient/.

Pew Research 2018d. (2018, May 14). *Many Republican Millennials differ with older party members on climate change and energy issues.* Pew Research Center.

https://www.pewresearch.org/fact-tank/2018/05/14/many-republican-millennials-differ-with-older-party-members-on-climate-change-and-energy-issues/.

Plummer, B., & Popovich, N. (2018, December &). The World Still Isn't Meeting Its Climate Goals. *The New York Times*. https://www.nytimes.com/interactive/2018/12/07/climate/world-emissions-paris-goals-not-on-track.html.

Quintelier, E., Stolle, D., & Harell, A. (2011). Politics in Peer Groups: Exploring the Causal Relationship between Network Diversity and Political Participation. *Political Research Quarterly*, *65*(4), 868–881.

Ramanathan, V., Allison, J., Auffhammer, M., Auston, D., Barnosky, A. D., Chiang, L., … Christensen, J. (2016). Chapter 1. Bending the Curve: Ten Scalable Solutions for Carbon Neutrality and Climate Stability. *Collabra*, *2*(1).

Renn, O. (2011). The social amplification/attenuation of risk framework: application to climate change. *Wiley Interdisciplinary Reviews: Climate Change*, *2*(2), 154–169.

Robinson E., & Robbins, R. C. (1968). *Sources, Abundance, and Fate of Gaseous Atmosphere Pollutants.* Stanford Research Institute.

Rupar, A. (2018, November 27). *Trump dismisses the economic impact of climate change — except at his golf course.* Vox. https://www.vox.com/2018/11/27/18114338/trump-climate-change-assessment-golf-course-ireland.

Saba, T. (2009). Les différences intergénérationnelles au travail: faire la part des choses. *Gestion, 34*(3), 25-37.

Saba, T. (2013). *Understanding Generational Differences In the Workplace: Findings and Conclusions*. Queen's University, IRC.

Shah, J. Y. (2005). The Automatic Pursuit and Management of Goals. *Current Directions in Psychological Science, 14*(1), 10–13.

Sinclair, L., & Kunda, Z. (1999). Reactions to a Black professional: Motivated inhibition and activation of conflicting stereotypes. *Journal of Personality and Social Psychology*, *77*(5), 885–904.

Smith, A. B. (2020, January 8). *2010-2019: A landmark decade of U.S. billion-dollar weather and climate disasters.* CLIMATE.gov. https://www.climate.gov/news-features/blogs/beyond-data/2010-2019-landmark-decade-us-billion-dollar-weather-and-climate.

Smith, A., & Anderson, M. (2018, March 1). *Social Media Use in 2018.* Pew Research Center. https://www.pewresearch.org/internet/2018/03/01/social-media-use-in-2018/.

Smith, L. K. C., & Fowler, S. A. (1984). Positive peer pressure: the effects of peer monitoring on children's disruptive behavior. *Journal of Applied Behavior Analysis*, *17*(2), 213–227.

Sniderman, P. M., Brody, R. A., & Tetlock, P. E. (1991). *Reasoning and choice: explorations in political psychology*. Cambridge University Press.

Solomon, S., Plattner, G.-K., Knutti, R., & Friedlingstein, P. (2009). Irreversible climate change due to carbon dioxide emissions. *Proceedings of the National Academy of Sciences*, *106*(6), 1704–1709.

Steentjes, K., Kurz, T., Barreto, M., & Morton, T. A. (2017). The norms associated with climate change: Understanding social norms through acts of interpersonal activism. *Global Environmental Change, 43*, 116–125.

Stern, P. S., Dietz, T., Abel, T., Guagnano, G. A, & Kalof, L. (1999). Values, Beliefs, Norms and Environmentalism. *Human Ecology Review, 6*(2), 81-97.

Stevenson, K. T., Peterson, M. N., & Bondell, H. D. (2016). The influence of personal beliefs, friends, and family in building climate change concern among adolescents. *Environmental Education Research*, *25*(6), 832–845.

Stok, M. (2014). *Eating by the norm: The influence of social norms on young people's eating behavior.* [Dissertation]. Utrecht University Repository. https://dspace.library.uu.nl/handle/1874/288827.

Stokes, B., Wike, R., & Carle, J. (2015, November 5). *Global Concern about Climate Change, Broad Support for Limiting Emissions.* Pew Research Center. https://www.pewresearch.org/global/2015/11/05/global-concern-about-climate-change-broad-support-for-limiting-emissions/.

Swim, J. K., & Bloodhart, B. (2013). Admonishment and Praise: Interpersonal Mechanisms for Promoting Pro-environmental Behavior. *Ecopsychology*, *5*(1), 24–35.

Swim, J., Clayton, S., Doherty, T., Gifford, R., Howard, G., Reser, J., Stern, P., & Weber, E. (2009). Psychology and global climate change: Addressing a multi-faceted phenomenon and set of challenges. A report by the American Psychological Association's task force on the interface between psychology and global climate change. *American Psychologist, 66,* 241-250.

Tetlock, P. E. (1983). Accountability and Complexity of Thought. *Journal of Personality and Social Psychology, 45*(1): 74–83.

Toke, D. (2000). *Green politics and neo-liberalism*. Basingstoke: Macmillan.

UN Environment Programme. (2015). *Climate Change and Human Rights.* United Nations. https://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate_change_and_human_rights.pdf.

UN Paris. (2015). Framework Convention on Climate Change. United Nations. https://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf.

UNESCO. (2015). *Not just hot air: putting climate change education into practice.* United Nations Educational, Scientific and Cultural Organization. https://unesdoc.unesco.org/ark:/48223/pf0000233083.

van der Linden, S. (2015). The social-psychological determinants of climate change risk perceptions: Towards a comprehensive model. *Journal of Environmental Psychology, 41*, 112–124.

Wolsko, C., Ariceaga, H., & Seiden, J. (2016). Red, white, and blue enough to be green: Effects of moral framing on climate change attitudes and conservation behaviors. *Journal of Experimental Social Psychology, 65*, 7–19.

Wong, M., Gardiner, E., Lang, W., & Coulon, L. (2008). Generational differences in personality and motivation: Do they exist and what are the implications for the workplace? *Journal of Managerial Psychology, 23*(8), 878–890.

Worland, J. (2018, February 28). College Republicans Reject Donald Trump on Climate Change. *Time.* https://time.com/5176700/climate-change-college-republicans-donald-trump/.

Wuebbles, D. J., & Jain, A. K. (2001). Concerns about climate change and the role of fossil fuel use. *Fuel Processing Technology*, *71*(1-3), 99–119.

Yi, S. S. (2020). Taking Action to Improve Asian American Health. *American Journal of Public Health*, *110*(4), 435–437.

Zaller, J. R. (1992). *The nature and origins of mass opinion*. Cambridge University Press.

Zia, A., & Todd, A. M. (2010). Evaluating the effects of ideology on public understanding of climate change science: How to improve communication across ideological divides? *Public Understanding of Science*, *19*(6), 743–761.