

On the Gap between awareness and voting behavior: Are US citizens who believe in climate change voting for Green parties?

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AFFIDAVIT

I hereby affirm that this Master's Thesis represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

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ABSTRACT

Climate change has emerged as a major concern, capturing worldwide attention and sparking significant discussion. Given its tremendous effect and worldwide importance, it's reasonable to wonder how public awareness of this phenomena impacts political behaviors like voting. The objective of this research is to conduct a comprehensive examination of the intricate correlation between the level of public consciousness regarding climate change and its impact on electoral choices, specifically in relation to environmentally conscious voting. The research gathered both quantitative and qualitative data from a sample of 112 American participants through the administration of a questionnaire. The collected data were subsequently subjected to statistical analysis. The findings indicate that despite the participants' heightened awareness and significant concern about climate change, their voting behavior was influenced by a multitude of different variables, including economic stability, civil rights, healthcare, and education, rather than solely by environmental awareness. Despite the majority of participants recognizing the severity of climate change, the conclusion of the study indicates that there is a divide between public awareness and voting behavior. This divide was linked to a variety of issues, including the lack of power of green parties, the rivalry between Democrats and Republicans, economic recovery, discontent with the lack of change, and the conviction that technology and a strong economy would solve the problem. The research emphasizes the need for politicians and proponents of climate change to develop policies that account for the diverse concerns of the electorate. In addition, the research investigates the intricate interplay of factors that influence an individual's perception of climate change and voting behavior, such as demographics, political views, personal experiences, and climate change perspectives. The research also looks at the impact of the COVID-19 pandemic on public worries about climate change, which has grown for a significant number of individuals. The results have significant implications for policymakers, climate change campaigners, and government officials, emphasizing the need for a diversified strategy for dealing with climate change and successfully involving the public.

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1 INTRODUCTION

1.1 Context and previous research

This study examines the correlation between individuals' environmental attitudes and their propensity to support green political parties, exploring the interplay between human conduct and political orientations. The study delves into the complexities of human conduct and political inclinations. Voting is a mechanism by which an individual can convey their assent or dissent towards a policy resolution, a political party's agenda, or a candidate who is competing to serve the interests of the populace (Barnea & Schwartz, 1998; Visser, 1994). Elderveld claims that the phrase "voting behavior" is not new (Wantchekon, 2003). It goes beyond just looking at vote statistics and records and calculating electoral swings. Analyzing individual psychological processes like attitude, perception, and motivation and how they relate to political action, in addition to institutional structures like the communication system and how they affect elections are also a part of this procedure.

Voting for green parties is particularly crucial for environmental conservation since greener votes provide the foundation for local, regional, national, and ultimately global actions aimed at minimizing the impacts of environmental deterioration (Wantchekon, 2003). It is becoming more apparent that if environmental restrictions and concerns are not included in our daily actions, we overlook crucial feedbacks that may have severe negative effects not just on others but also on ourselves (Wantchekon, 2003). In addition to beginning to acknowledge the physical restrictions on economic development on a limited planet, we realized that our choices influence how we want to construct the future in which we and the next generation will live (Schumacher, 2014). Following, decisions that are reflective of those choices and preferences are made on two stages; the individual stage and the public stage, and studies have presented that private choices and actions can, for different reasons, diverge significantly from public choices and acts (Faber et al., 2002). Though, it is not always evident how values and preferences translate into voting behavior (Schumacher, 2014). It is important to understand how voter choices affect the political decision-making procedure because all environmental legislation, laws, and municipal or national strategies must first go through this phase (Schumacher, 2014). So, this study attempts to comprehend how broad voting patterns in the US are influenced by different factors, including environmental awareness and impact of climate change on the voting behavior.

Following are some explanations of factors that are studied in this study as well as other works that have looked into voting behavior and support for green parties. Studies have consistently demonstrated a favorable correlation between education and pro-environment attitudes, and

more educated persons are more likely to view voting as a civic obligation (Salka, 2001). In contrast, lower educational attainment is linked with lower levels of voting for the green party, emphasizing that education plays a role in the provision of knowledge or an elevated level of critical thinking (Schumacher, 2014).

According to number of academics, age has a key influence in predicting environmental preferences, with younger persons more inclined to favor the environment due to their upbringing in an environmentally conscious society (Hansen & Tyner, 2021). Residents of rural areas are less likely to vote green (Schumacher, 2014). Perhaps the structural origins of this behavioral impairment are outside the rational control of the individual. Living in a rural area frequently precludes the use of public transport services as an alternative to driving, while living in a region with severe winters severely restricts one's ability to reduce home heating-related energy use (Schumacher, 2014). So, for the large majority of individuals who are not considerably constrained by structural barriers, implementing more environmentally friendly actions and choices is doable (Gifford, 2011). Even if some are easier to adopt than others, some individuals may not vote for the green party owing to tokenism (Gifford, 2011). Due to their ease of execution, however, these activities are frequently chosen over more costly but effective alternatives (Gifford, 2011). The environmental impact may vary from the environmental intent (Stern, 2000). A number of studies indicate that the public has little confidence in green parties. Trust is required for the development of healthy partnerships. When it is absent, as it frequently is between the people and their government, numerous forms of resistance result (Gifford, 2011). For instance, a lack of political voice for some groups of individuals will certainly cause them to become more excluded over time and cause governance issues, and in this case, will erode faith in environmental institutions (Coan & Holman, 2008). In order to improve one's conduct, one must therefore think that others will not take advantage of them, that the change will be useful and equitable, and that the other person is sincere and driven by public duty (Gifford, 2011).

In conclusion, the likelihood of adopting effective behaviors to address climate change decreases when trust is compromised. In addition, possibly environmental problems might not impact candidate assessments because very few voters see distinctions between major party candidates on this topic or because these issues do not affect them directly with sufficient intensity to urge action (Guber, 2001). Another argument is that not many voters place a high priority on striking a balance between environmental and economic concerns (Guber, 2001). Also, the problem arises when party allegiance and policy choices clash. In other words, people who identify with the same party but hold opposing extremes of view should exhibit diverse voting patterns if the subject is politically significant (Smith & Meier, 1994).

Moreover, strong preferences for one candidate over the other might serve as motivation to vote. However, inspiration may also come from the conviction that casting a ballot is a necessary part of being a good citizen, from peer or familial pressure, or from both (Harder & Krosnick, 2008). It is also likely that a person's social environment and psychological traits might influence

their voting behavior by influencing their motivation, capacity, or difficulties (Harder & Krosnick, 2008). Furthermore, human nature is constrained in ways that contribute to psychological hurdles to climate action (Schmitt et al., 2020). Voter motivation may come from a strong liking for one candidate over another. Nevertheless, incentives can also be obtained from other sources, such as the notion that voting is a requirement of being a responsible citizen, from peer or family pressure (Barnea & Schwartz, 1998; Visser, 1994). Voting motivations might stem from a strong liking for one party over another (Guber, 2001). However, the drive may also come from the notion that voting is a necessary part of being a good citizen, the peer or familial influence to vote, or from other causes such as partisan and loyalty (Schmitt et al., 2020).

It goes without saying that supporters are more likely to have money available to spend on environmental issues if their net income is greater (Schumacher, 2014). Voters are less likely to support the green party as the percentage of green space in their county increases, which is related to the other environmental variable (Schumacher, 2014). This results from any economic model where a stronger desire to pay for the environment is induced by a poorer environmental quality (Schumacher, 2014). People who have green-minded friends and relatives are more inclined to support green parties (Visser, 1994, 1998). The voter's verbal community, i.e., those social people proximate enough, such as family, friends, classmates, neighbors, etc., encourage or penalize voting behavior without considerable delay. People may not vote green because of their inclination to remain loyal to their former candidate (Guber, 2001). Perhaps environmental concerns have little effect on voting choices because they tend to transcend conventional cleavages, such as political identity (Guber, 2001). Voters who identify with the same party but have opinions that are at opposite ends of the spectrum are likely to vote in quite different ways if there is political significance to the issue (Guber, 2001).

Environmental attitudes should be taken into consideration in order to completely comprehend environmental behavior, along with the costs and advantages of pro-environmentalist activity (Kahn & Matsusaka, 1997; Svart, 1976). There are not many studies demonstrating a significant link between environmental views and different kinds of environmental behavior across nations (Chawla & Cushing, 2007; Huang, 2016; Kahn & Matsusaka, 1997; Krettenauer, 2017; Lange & Dewitte, 2019). Moreover, as demonstrated in the literature (Papp, 2022; Wantchekon, 2003), exposure affects not only beliefs but also how those opinions are expressed through voting. More inclined to support green parties are people who have personally witnessed climate change and severe weather (Schumacher, 2014). Studies demonstrate that individuals are more likely to take some action if they perceive environmental issues to threaten their well-being (Corbett, 2005; Gifford & Nilsson, 2014; Swami et al., 2011). Severe weather exposure, particularly that resulting from heat waves and periods of drought, arouses environmental concerns and increases the green vote (Hoffmann et al., 2021). The increased prominence of climate change in public discourse has stimulated action. This marks an encouraging shift towards active

environmental stewardship. Knowledge dissemination seems to foster such participation, illustrating the critical role of education in sustainability management. Europe's diverse climate zones appear to have diverse effects on citizen's concern and voting patterns (Hoffmann et al., 2021).

However, it is difficult for green parties to convert voter concern about the environment into electoral support. The escalating apprehensions around climate change suggest favorable conditions for Green Party candidates. Paradoxically, US election outcomes tell a different story. Here, the Green Party grapples with stiff competition from other factions seeking the backing of eco-conscious constituents. These unexpected dynamic intimates a nuanced landscape of environmental politics. The purpose of this study is to determine the reasons behind this phenomenon, whether they be psychological barriers or other aspects. Some have argued that environmental concerns should be central in all elections, not just those at the state and local levels (Guber, 2001), but it is evident that voters in the United States are not going to decide between presidential candidates based on their "environmental records." Several academics and political commentators even seemed inclined to write off environmental concerns as a parliamentary "paper tiger," all talk and no action (Andersen et al., 2002; Zaller, 1992).

Historically, the American perception of climate change as an imminent threat was not prevalent. This has been significantly altered in the last twenty years, pointing towards a deepened comprehension of its catastrophic implications. This shift underscores the continuous evolution of public environmental awareness. People (in this case, Americans) have experienced the hottest seasons, the most wildfires, and the worst floods over the past several years (Monnet et al., 2022). These events demonstrate the critical importance of limiting global warming, the implementation of which will rely heavily on public support for policy decisions meant to minimize climate change. It is vital to examine the relationship between environmental awareness and voter propensity, as the results will aid in the development of campaigns to inform the general public about climate change, the importance of voting green, and how to acquire the public's trust in green parties.

The conclusions of this study will also shed light on how challenging it is for green parties to convert environmental concerns into voting. The fundamental purpose of this study is to investigate why, despite the fact that some people consider climate change and sustainability to be significant issues and live in as responsible a way as possible (they avoid litter, recycle, walk, etc.), they do not vote green. Probably a variety of psychological hurdles, attitudes, and ideas are responsible (Gifford, 2011). In some instances, the structural causes of this behavioral impairment are beyond the individual's control. Oklahoma has been the state in the United States most frequently hit by weather extremes. In his book, "Do not Even Think About It," George Marshall writes that in 2008, Oklahoma citizens were given a clear option in their election for the Senate between "Andrew Rice," a Democratic presidential candidate with a "moderate but balanced acceptance of climate change," and "Incumbent James Inhofe," "the most active and

aggressive climate denier” (Monnet et al., 2022). Inhofe nonetheless won by a wide majority during a period when climate change worry was at a record-breaking high, dominating the five Oklahoma counties that averaged experienced more than one officially declared climate crisis per year (Monnet et al., 2022). At the same time, Bernauer and McGrath discovered that the public does not support climate policy more when the subject of climate change is simply re-framed (Monnet et al., 2022). The reason for this, according to their argument, is that voters are exposed to various competing frames regarding climate change and are therefore "pre-treated" to the "framing exercise." Others are not very engaged in environmental preservation, while others hold strong environmental attitudes and behaviors. Howe et al. indicated that people's responses to environmental challenges reflect their preexisting ideas and values (Monnet et al., 2022).

1.2 Research aims and objectives

Thus, this study assesses how exposures to extreme weather and climate change alter people's environmental perspectives and how much they may explain the current rise in environmental consciousness and support for green political parties. These are the hypotheses of this investigation, based on relevant literature reviews:

1. Most people who are eligible to vote in the United States are aware of the issue of global warming.
2. Environmental concerns are sparked by personal climate change experiences.
3. COVID-19 pandemic has made people more aware about climate change.
4. Most individuals who are aware of climate change care about it and make an effort to live as responsibly as they can.
5. Most individuals who are aware of climate change care about it and vote for green parties
6. While individuals engage in eco-friendly behaviors such as reducing trash, and utilizing eco-friendly products, they are unwilling to vote for green parties.

Based on the hypotheses provided, here are study's research questions:

- How has the COVID-19 pandemic affected eligible voters' awareness of climate change and their engagement in eco-friendly behaviors?
- To what extent do personal experiences with climate change influence environmental concerns and voting patterns among eligible voters in the United States?

- Are there discrepancies between individuals' climate change awareness, their eco-friendly behaviors, and their willingness to vote for green parties?.

1.3 Structure of thesis

The first portion, the literature review, offers a thorough examination of the subject's current body of knowledge, emphasizing the key concepts, hypotheses, and discoveries that underpin the study. The methodology section follows, explaining the study design, data gathering procedures, and analytical approaches used to examine the research problem. Following that, the chapter on results and discussion provides a full overview of the findings, establishing links to the literature study and emphasizing the implications of these findings. The thesis finishes with a review of the key findings, suggestions for further study, and policy implications. Lastly, the reference list and appendices are supplied to give comprehensive documentation of the sources studied as well as any supplemental materials utilized throughout the research process.

2 LITERATURE REVIEW

2.1 The Nature of Voting and Decision

Only a few actions that a person does during his or her life may have as many repercussions as voting for a party in an election. Voting establishes a path of action for parliaments and administrations, therefore, for the socio-political and structure of nations whether directly or indirectly. Leaders that profoundly altered the trajectory of international affairs and initiated policies that affected the everyday lives of millions have come to power via elections. This section discusses main theoretical views on voting behavior and recent literature works.

2.1.1 Stimulus to response

The phenomena of behavior as a whole is constant and ubiquitous. Humans always act in some manner, and it is conceivable to make the case that it is impossible for (alive) people to act indifferently (Visser, 1998). Not all conceivable behaviors are equally intriguing to social scientists who want to research behavior. Various social sciences will choose one component of behavior for in-depth research and leave all other activities to the other disciplines of social inquiry, depending on their area of behavioral interest. Consequently, whereas anthropologists focus on behavior in particular social-cultural contexts, economists will be mainly concerned with behavior connected to creating, distributing, and consuming scarce products. The political element of conduct will play a major role in this dissertation, particularly one category of political behavior, namely voting behavior (Traugott & Katosh, 1979).

Political and social scientists who study behavior have as their main goal the explanation (and forecasting) of conduct: why do people act in certain ways? Asking “why” a specific action has been taken entails identifying the reasons for that action, which is necessary for the explanation of behavior, which needs connecting actions to antecedent causes. This problem of explanation is often approached by a psychological theory of behavior using the following fundamental model (Bigne et al., 2020):

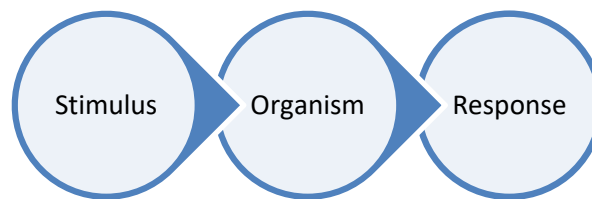


FIGURE 2-1- THE STIMULUS—ORGANISM—RESPONSE PARADIGM

An organism with certain traits and abilities reacts in this stimulus-organism-response (S-O-R) chain when particular environmental stimuli are presented, and this reaction is influenced by both the kind of stimulus and the condition of the organism. The reaction may impact both the external stimulation circumstances and the organism's status (Visser, 1994).

This model suggests that there are two main causes of behavior. The environment of the acting human organism is one source; its behavior must be interpreted as a reaction to specific stimuli coming from its environment. For instance, when we see a flood and people fleeing from it, we can easily explain that they were reacting to the danger of drowning and the potential destruction threat in the area.

Nevertheless, there is no clear-cut, mechanical relationship between behavior and environmental events. First, there is the reality that human conduct varies across individuals. For instance, in the preceding scenario, one person fled the burning home while the other turned back and entered it again to look for friends or lost property. Indeed, responses to identical situations have evolved, highlighting the dynamic nature of human adaptability. This change reflects an interplay of increased awareness, altered perceptions, and shifting societal norms. This is known as intrapersonal variability of behavior. The courageous individual who bravely went back inside the burning home suffers severe injuries and learns that it is wiser to flee as soon as they can, the next time they find themselves in a similar circumstance. As a result, in addition to the acting organism's environment, the other source of behavioral causality must be found inside the organism itself (B. Berelson et al., 1966; Glasford, 2008).

Undoubtedly, the epistemological complexity surfaces when human actions become the driving force behind phenomena. The implications for this are profound, presenting challenges in understanding, predicting, and managing such occurrences within the framework of sustainability. Humans' internal states cannot be examined, despite external factors, qualities, and biological parameters of the organism being visible (Visser, 1994, 1998). Thereby, in the electoral situation, the voting analyst may, on the one hand, watch the events leading up to the election (such as campaigns, speeches, discussions, conventions, etc.) or the actions of voters in relation to the elections. On the other hand, one may examine the official election outcomes, which represent

the culmination of the many physical actions that happened when voting, such as crossing a ballot or pushing a switch.

Nevertheless, it is evident from the factual data of interpersonal and intrapersonal variation in behavior in similar circumstances that the electoral environment has different meanings for different people and that it is, therefore, impossible to explain the election outcomes solely from the preceding environmental conditions (Buchanan & Yoon, 2006). The elements and processes that function as a bridge between the stimulus condition on the one hand and the bodily reaction on the other must be understood on the basis of the individual voter. The solution to the epistemological conundrum can then be found by speculating on the existence of specific mental processes that could aid in the elaboration of voting behavior or, to put it another way, by conceptualizing the factors that stand between environmental factors and consummatory action (Blumenstiel, 2014).

This will direct our attention to the sociological model, the psychological model, and the rational choice theory—three major scientific studies of voting behavior.

2.2 Sociological model

Social group theory is a way of extending socio-economic, religious, and other identities by connecting voters' intents to their social features as the factors influencing party preferences. The partisan predisposition that is compatible with the political traditions of affiliation or reference groups is learned based on this view (Antunes, 2010).

Three key publications establish the theoretical assumptions of the sociological model of voter turnout: *The People's Choice* (B. Berelson et al., 1966), *Voting* (L. Berelson & Lazarsfeld, 1990), and *Individual Influence* (Menzel & Katz, 1955). Lazarsfeld et al. used a questionnaire as a tool of inquiry for the first time in the investigation of a U.S. presidential election — one that featured Franklin Roosevelt against Wendell Willkie in 1940 - breaking away from the conventional approach that had hitherto defined the examination of voting behavior (Lazarsfeld & Berelson, 1944). In this study, Paul Lazarsfeld had two primary objectives to investigate the consequences of exposure to the mainstream press, that is, to understand how the voting public arrives at their choices and the media's role in this procedure, and to investigate a new method of analysis of consecutive interviews with a panel of participants. Lazarsfeld's prior aspirations had been centered on the research of the psychological processes implicated in the procedures of preference and in the impacts of publicity, marketing, and mass media on customer behavior (R. B. Smith, 2001).

The People's Choice, a research whose findings were printed, begins by describing the followers of the two main political groups in the United States utilizing a panel of 600 participants who were questioned 7 times over the 7 months of the initiative (Lazarsfeld & Berelson, 1944). To then recognize the voters who altered their position throughout the election season, three

groups were compared: those who made up their minds about their vote before the campaign began, those who shifted their opinions during the campaign, and those who made their decision near to the election day. Lazarsfeld's key argument was that voting is an intentional action that is largely influenced by the voter's character and media coverage. The findings, however, go counter to the primary hypothesis, indicating that the media had less of an impact on voters' choices and that their affiliation with certain social groupings had a greater impact.

However, the sociological model has shortcomings when it comes to describing the changes in voting caused by economic reasons unique to each election (Antunes, 2010). Indeed, social factors elucidate enduring voting trends yet fall short in explaining inter-election volatility. Moreover, they do not necessarily explicate variances in voting tendencies among diverse social factions. This suggests an intricate interplay of elements impacting electoral behavior, requiring a holistic analytical approach. While there are efforts to address these issues within the sociological framework, for instance, studies that say that the analysis of voting behavior ought not to be done from the voter's viewpoint but instead value contextual elements such as political party platforms, the media's involvement, the nation's economic structures, and the setting in which the link between voters and parties develops stronger views (Mahsud & Amin, 2020; Van der Eijk et al., 1996). These constraints have given rise to the Michigan psychosocial framework, which makes an effort to overcome them by tying the effect of long-term sociological and historical elements described in the sociological framework and the short-term social and political aspects that define each election together.

2.3 Psychosocial model

Partisanship, which is defined as a psychological attachment, stable, and long-lasting connection with a political party but does not always translate into a cementitious link, such as registration, coherent voting, and systematized militancy with this group, is the key concept of this framework of voting behavior (Mahsud & Amin, 2020; Visser, 1994). The sociological methods conceptualized as predictors of voting behavior are generally the aspects that the model considers. As per Campbell et al., changes in party identification take quite infrequently and are usually a result of extremely significant events (A. Campbell, 1960). The study's findings indicate that party identification shifts correspond to alterations in individuals' social status - higher education enrolment, matrimonial events, geographical transitions, occupational changes, and so forth. Furthermore, societal and political reorganizations, exemplified by the dissolution of the Soviet Union, also influence this political identity. These conclusions highlight the interplay between personal circumstances and broader societal changes in shaping political affiliation. As can be seen, these variations are relatively infrequent in both cases. However, when they happen in the political and/or social system, such as the effects of the fall of the Soviet Union on the electoral affirmation of the communist groups in southern Europe, the impact on transformation in partisanship occurs more quickly and has a greater electoral impact.

The voters' degree of political engagement is correlated with the politicians' actions of kindness perceived by the voter, while the voters, on the other end, feel a certain amount of satisfaction and a duty to reward the government for its "good deeds." In this scenario, a person's psychological health formed through cognitive functions (Young et al., 1987) determines whether they are happy or unhappy, and voting behavior is tied to political favoritism. According to a range of researchers, this is a key factor in traditional political involvement (Barnea & Schwartz, 1998; Deary et al., 2008; Huddy & Khatib, 2007; Jamal et al., 2019), and it also reveals how individuals vote in national and municipal elections. The unwavering commitment to political parties, whether as a result of political favouritism or the party's ideological stance, is also associated with psychological well-being. This scenario shows an ideological affinity between the voter and the party, which reflects the innate desire to support that specific institution.

Attempting to reinterpret and incorporate the findings of earlier investigations in terms of cognitive economy, where participants are believed to rely on social and group signals, party signals, or ideological and economic performance signals, the cognitive voting investigation has turned out to be somewhat imperialist theoretically (Dalton et al., 1993; Goodin & Klingemann, 1996; Lodge et al., 1989; Oliveira et al., 2010). Nonetheless, the amount to which cognitive psychology has been successful in its endeavour at thorough reformulation is still up for discussion.

2.4 Theory of rational choice

Anthony Downs' "An Economic Theory of Democracy" from 1957 provides the theoretical framework for an economic analysis of voting behavior (Downs, 1957). Rational choice theory is the name given to this idea. This is an effort to explain election behavior using Kenneth Arrow's studies in the political economy as a starting point, which links economic factors, resources, and products with a political result or choice (K. J. Arrow, 1966; Frohlich & Oppenheimer, 1999). The idea is straightforward: if the rational choice assumptions can account for the functioning of the market, they can also account for that of politics. It creates a clear parallel between customers and voters, as well as between businesses and political organizations. We may thus postulate that voters aim to maximize the value of their vote as the party acts to maximize electoral victories acquired from their political propositions if businesses work to maximize profits and users strive to maximize utility.

The model operates on the following three key assumptions (Edlin et al., 2007; Rogers et al., 2013; Weakliem & Heath, 1994) : (i) Voters' and political parties' actions are all rational, that is, driven by self-interest and implemented in line with the maximizing of action's utility. (ii) The democratic system of government implies a degree of consistency that endorses predictions about the results of choices being made by voters, and political groups are accountable and reliable, making predictions about the outcomes of various decisions possible. (iii) Notwithstanding the uniformity mentioned in the preceding argument, the democratic system implies a degree of uncertainty that is significant enough to permit alternative solutions.

The rational choice model states that people are more likely to cast ballots if they believe their vote is critically important and if the anticipated benefits outweigh the expected expenses. Voters must weigh the differences in each candidate's positions on issues important to them in order to decide whether candidates A, B or C will win (or lose) the election. The possible advantage of voting is zero, and the likelihood of not voting is greater if this study does not anticipate any substantial changes related to any candidate's win or loss. Indeed, a perceived inconsequentiality of one's electoral choice may elevate the propensity towards non-participation. This suggests the presence of a psychological component underpinning voting behavior, interwoven with rational calculation of personal influence on electoral outcomes. The rational choice model, however, has a relatively poor explanatory power for voting behavior, according to research by Blais (Blais & Young, 1999). In reality, their study's findings indicate that nearly half of the voters cast ballots solely out of a sense of civic obligation rather than considering the costs and advantages. The factors relating to the advantages and disadvantages of voting do not have the impact that the rational choice framework predicts, even among people whose feeling of obligation is not as strong. According to Blais, even the cost does not appear to impact voters' choices substantially (Blais, 2015).

However, it would be very beneficial to quickly go through the prosperity and post-materialism theories in terms of rational choice theory. According to the post-materialist theory, a change in values among residents of wealthier nations makes them more inclined to engage in pro-environmental action (Inglehart & Baker, 2000). Inglehart develops his theory about "objective difficulties and subjective values" by looking into the World Value Survey (WVS) data set, which examines people's beliefs and values, their consistency or change over time, and their effect on social and political progress of the societies in various countries around the world (Inglehart et al., 2014). It claims that in societies where economic well-being has been developed, people seek non-materialistic goals like freedom of speech and high quality of life. On the other hand, in less developed nations, individuals prefer to address local, objective environmental problems without considering values. Inglehart, therefore, proposes a new phase of national development, consistent with Rostow's model (Olanrewaju, 2021; Welzel et al., 2001), where cultures see environmental concerns and life satisfaction as vital due to a change in their values.

According to the prosperity hypothesis, individuals trade-off between products and environmental quality instead of experiencing a change in values. The desire for the environment is a "luxury good" that rises with income (Edlin et al., 2007; Franzen & Meyer, 2010). On the one side, this hypothesis makes the case that individuals must contend with a positive revenue elasticity of environmental requirements under the rational choice theory. Contrarily, this viewpoint believes that more affluent people are more ready and able to decrease their quality of life to commit greater resources to global environmental conservation (Franzen, 2003). This hypothesis states that it is necessary to differentiate between an individual's marginal and generally willing to invest in environmental preservation (Franzen & Meyer, 2010). Overall willingness to

pay for the environment will rise as nations get wealthy. Individuals' relative willingness to contribute to environmental quality does, however, initially rise with wealth before falling at a later stage when environmental quality improves.

2.5 Factors affecting voters' decision

2.5.1 Social choice

The study of collective decision-making processes and mechanisms is known as social choice theory. The conversion of individual inputs - votes, preferences, judgments, welfare - into collective outputs is intricate. It transcends the scope of a singular theoretical framework, instead being encapsulated by a multitude of models and empirical findings. This indicates the multifaceted nature of collective decision-making processes and societal well-being determinants (Sen, 1986). Social choice researchers have discovered deeper challenges with preference aggregation. Kenneth Arrow is credited with providing one of the most crucial ideas. Arrow proved that no ranked system of voting, wherein voters rank representatives by preference, can satisfy metrics of fairness if voters have three or more distinct alternatives (K. Arrow et al., 2011; List, 2013). The characteristics necessary to establish fair voting include unconstrained domain (all voter choices are taken into account), non-dictatorship (voting cannot reflect a single voter's preferences without taking other people into account), Pareto efficiency (no one can benefit without harming someone else), and the independence of irrelevant choices (aggregate preferences for A and B rely solely on individual desires between A and B, and are independent of irrelevant choices). In practical terms, when a new nominee, like a third-party candidate, enters a campaign, the independence of irrelevant options arises.

In generalizing Arrow's ranked model to incorporate cardinal preferences, Allan Gibbard discovered that voters might not only evaluate their preferences but also quantify the disparities between them by giving candidates marks (A. Gibbard, 1982). Gibbard additionally incorporates chance-introducing nondeterministic preference aggregating functions into the analysis of social choice (A. F. Gibbard, 2014). Gibbard's theorem states that under such circumstances, any collective decision-making procedure either becomes dictatorial, restricts options to two, or inspires agents to act tactically, that is, submit priorities that do not accurately reflect their opinions but are based on assumptions about how others could be voting. People may cast their votes not because they support their candidate but rather because they oppose them and want to see them defeated (Brams & Sanver, 2009). That is unquestionably the case in elections involving several candidates, like primaries, or in contests with two highly unpopular contenders, like the 2016 U.S. presidential election.

2.5.2 The internal process of casting a vote

2.5.2.1 Memory-Based framework

The underlying assumption in many social science theories is that preferences develop via a memory-based mechanism (Mullainathan, 2002). A memory-based paradigm assumes that individuals base their assessments on facts they recall from memory. People may search their memory for details about an object's characteristics when asked to assess it, for instance, and then utilize what they discover to establish preferences.

A person remembers all pertinent information and incorporates it into an overall assessment in extensive memory-based models. A person stores knowledge about a contender in her long-term memory, such as the candidate's stance on certain issues. Then, she pulls the candidate's stances on a variety of problems from her long-term memory, assigns weights based on significance or relevance, and eventually incorporates the information into a final rating (Druckman & Lupia, 2000).

Such models presuppose that individuals do a significant amount of calculation. Contrary to popular belief, people—voters in particular—do not have the drive or capacity to review their memories or carefully consider the facts thoroughly. Several academics have made an effort to resolve this seeming conflict by providing memory-based models with fewer computational assumptions (Eiser & van der Pligt, 1984; Forgas, 1992). For instance, Kelley and Mirer contend that a voter chooses whom to support by considering voters' likes and dislikes of the prominent candidates and major parties engaged in an election (Kelley & Mirer, 1974). Voters cast their vote for the candidate, if any, for whom they have the largest net number of pleasant sentiments, considering each like and hate equally. With the use of this model, Kelley and Mirer were able to forecast the voting intentions of almost 88% of the people they polled throughout the presidential elections of 1952 through 1964.

Actors that are even less computationally complicated are shown in more recent work. For instance, accessibility models suggest that individuals base their choices on limited sets of factors. The possibility that a particular aspect (or construct) will be recalled from memory when establishing a preference is referred to as accessibility (Druckman & Lupia, 2000). A substantial body of research demonstrates that individuals often make their decisions on the factors that are easiest for them to recall (Edwards et al., 1988; Johnson & Fowler, 2013; Monti et al., 2009). Certainly, the type of information accessible to a voter shapes their candidate selection. Given economic data, electoral decisions lean towards economic considerations; if presented with foreign policy data, the decisions hinge on such intel. This suggests that the information context significantly influences the voter decision-making process.

Such a model is well-known in political science (Lavine & Steenbergen, 2005). Zaller defines consideration as any cause that may lead an individual to resolve a political problem one way or the

other (Zaller, 1992). Zaller contends that individuals make judgments by averaging through the presently relevant or available considerations. According to his concept, individuals base their choices on whatever factors first spring to mind.

The likelihood that citizens will have genuine sentiments is significant (Domke et al., 2000; Kuklinski & Quirk, 2000; Oussous et al., 2022). According to Zaller's theory, people's preferences are influenced by whatever is necessary at the moment they express them. If someone overhears a debate about economic concerns, for instance, economic factors may immediately spring to mind; as a consequence, her reported choice will be heavily influenced by these considerations (Zaller, 1992).

Accessibility models are frequently used and effective in political science (Chong & Druckman, 2007; Jacobs & Shapiro, 1994; S.-H. Kim et al., 2002; Ottati et al., 1989). Mainly well-known works could be related to Kinder and Iyengar (Ansolabehere et al., 1991). For instance, they contend that people are more likely to think about the defense problem when a defense is emphasized in television news. As a consequence, the defensive problem is what spectators evaluate.

2.5.2.2 On-line framework

The on-line model of assessment, like the accessibility model, acknowledges that memory constraints prohibit individuals from doing a thorough information search each time they develop a preference. The on-line simulation, however, presents individuals as overcoming this restriction in a fundamentally different manner (Bassili & Fletcher, 1991; Bassili & Roy, 1998).

The on-line approach recommends that individuals create and keep a running "evaluation counter" of specific things rather than basing an assessment on whatever reasons happen to cross their minds. As a person learns new knowledge about these things, she updates an affect-charged "evaluation counter" (also known as a running tally) in working memory before re-storing it to long-term memory. This model's key feature is that the person may dismiss the information that changed her assessment after updating it. People do not look for the data based on their assessment when asked to share their opinion; instead, they get the evaluation counter (Druckman & Lupia, 2000).

An on-line methodology of candidate assessment has been pioneered by Lodge and his colleagues (Lodge et al., 1989, 1995). Their research demonstrates that while doing on-line processing, respondents rely less on information already stored in memory when the assessment is produced and more on information that reaches their evaluation counter over time. For instance, a voter who favors abortion rights and stringent federal criminal laws can learn through campaign material that a candidate supports both of these issues. So, the voter accesses and modifies her on-line assessment of the candidate in a positive manner, forgets her motivations for doing so, and then retrieves the on-line rating in long-term memory. Even if the voter does not recall the candidate's positions, she may provide a favorable candidate rating later when

she has to assess the candidate (for example, to cast a ballot). As a result, there may not be a connection between what a voter recalls and their preference, or the connection could be the result of post-hoc justifications.

According to Druckman and Lupia, researchers shall not anticipate individuals to recall and disclose the rationale for their choices if they construct their judgments on-line. This has many ramifications (Druckman & Lupia, 2000; Lodge et al., 1989, 1995). Secondly, if the on-line model is reliable, we should exercise caution when utilizing memory measures to understand the reasons behind people's choices, including open-ended like-dislike inquiries and issue-position queries. These recall information metrics might represent justifications for preferences or have no link to actual preferences. Rahn et al. assert that the preferences cited by Kelley & Mirer (Kelley & Mirer, 1974) as an explanation of candidate preference are post hoc justifications for ongoing on-line assessments (Rahn et al., 1994).

A voter may utilize campaign materials to update her assessment and then discard the information; therefore, if voters create evaluations on-line, we cannot determine the influence of a campaign by measuring how much campaign material they recall (Druckman & Lupia, 2000; Lodge et al., 1995). Both of these arguments run counter to memory-based theories, which suggest that what a person occurs to recall influences her preferences. The on-line model also implies that, contrary to what accessibility models would predict, individual preferences are less sensitive to abrupt changes (Y. M. Kim & Garrett, 2012; Lavine, 2002). The on-line model primarily upholds the conventional notion of preferences as more regular occurrences, in stark contrast to accessibility models.

2.5.2.3 Implications in the political science

It is a widely held belief in the social sciences, especially in microeconomic models, that a preference's comparative assessments have at least two distinct characteristics (Druckman & Lupia, 2000; Ordeshook, 1990; Riker & Ordeshook, 1973). The first characteristic is that a person cannot definitely favor Plan A to Plan B and strictly favor Plan B to Plan A at the same time. A person must favor Plan A to Plan C if she favors Plan A to Plan B and Plan B to Plan C, which is the second preference condition: transferable. A third often-held belief about preferences is that they are invariant, which means that alternative representations of a similar decision issue should give the same preference (Budescu & Weiss, 1987).

There is much debate about whether and when preferences possess these qualities. This argument is fueled by the occurrence of experimental participants whose preferences defy the assumptions of transitivity or invariance (Druckman & Lupia, 2000). Tversky & Kahneman's studies demonstrate that when faced with dangerous possibilities, individuals choose risk-seeking options when the implications of their decisions are presented as benefits and risk-averse options when the consequences are framed as losses (Kahneman & Tversky, 1987). This study is con-

sistent with a broad body of research demonstrating that question wording, structure, or location changes how individuals express their choices in surveys. Examples of this kind are often cited as proof that preferences are neither fixed nor unchanging (Griffin & Newman, 2013).

Such preference reversal findings have significantly changed how social scientists look at preferences. Unfortunately, it is common practice to overinterpret the significance of these findings, notably those of Tversky and Kahneman, for the formal study of choices (Druckman & Lupia, 2000; Kahneman & Tversky, 1987). The findings of Tversky and Kahneman provide convincing evidence that people's preferences rely on the data that they are presented with. They explain abstract things (such as laws affecting a far-off, hypothetical population) in terms of the fatalities they have caused and how people rate them. People may rate similar items differently if they compare them based on the number of lives they have saved. However, these protests do not prove that individuals cannot or do not often possess transitive and invariant values in a variety of political circumstances (Sniderman, 2000). The findings of preference reversal show a flaw in a more fundamental—and sometimes unstated—assumption in several rational decision models. Preferences are thought to be permanent and exogenous. According to different findings, many examples of genuine interest do not support this premise (Khrennikova & Haven, 2016; Shafir et al., 2002). As Lichtenstein et al. explain, Simon's efforts to make formalized modeling more cognitive are strengthened by this insightful observation (Lichtenstein & Slovic, 2006). These findings, however, do not demonstrate that individuals are unable to have transitive and invariant inclinations generally or in a significant number of the substantive settings that political scientists are interested in.

In fact, the majority of individuals tend to have a wide range of preferences, including favorites for a political party, religion, and sexual preference. Utilizing the conventional modeling assumptions does not compromise external validity for the many substantive areas where information modifications do not lead to choosing changes. In conclusion, some of the most significant recent results in the social sciences have come from experimental research on the interaction between desires and information. These results, at the very least, have prompted academics to pose more pointed and insightful queries regarding the function of preferences in social science frameworks.

2.5.2.3.1 Persuasion and strategic communication

Those that score moderately in awareness and knowledge are the most likely to alter their opinions, according to a conclusion that is becoming more and more typical in this sort of research. Since they are more prone to hear new knowledge than less aware individuals and more prone to be convinced by new data than more informed people, it is believed that these people's opinions are more susceptible to change. The link between awareness and attitude adjustment could be nonmonotonic; those at medium degrees of awareness could be the most inclined to change (Zaller, 1992). Both the best and poorest informed members of the population have consistent

opinions and judgments regarding a wide variety of political issues. They also have consistent preferences as a consequence. The best-informed individuals exhibit preference stability because they already possess a high level of knowledge, which enables them to produce internal counterarguments and reduces the degree to which new information shocks them. The lack of input regarding their existing ideas and, thus, insufficient stimulation for choice change is the cause of the worst-informed people's preference stability. The preferences of other citizens are more malleable (Druckman & Lupia, 2000).

It might be challenging to sort out the consequences of strategic conduct for preference development. Nonetheless, some new political science research has offered some helpful insights. This work is largely the result of the development of strategic communication frameworks (Pitchik & Schotter, 1987). Academics use these models to explain how a speaker's personality affects how compelling her words are. The models' worth comes from their capacity to provide specific and broad insights regarding preference creation.

One of the early indications of the effect of strategic communication models may be seen in Calvert, for instance. In order to create a decision-theoretic model of information handling, he incorporates Bayes' rule, which is crucial in many models of strategic communication (Calvert, 1985). Calvert uses the concept to determine the circumstances in which a logical person would participate in "selective exposure"—a practice in which listeners pay more attention to speakers who have a history of prejudice. Calvert's research is significant because limited rationality models, which are often offered as alternatives to rational actor models, include assumptions about ideas like preferential exposure (A. Gerber & Green, 1998). Calvert, in contrast, uses a rational actor model to generate selective exposure. His work is significant in preference-forming studies because it explains the incentives political information seekers must contend with and demonstrates how belief change can be derived from fundamental assumptions about actor objectives. These incentives will influence the type of information they obtain and the preferences they ultimately develop.

As Allcott and Gentzkow and Guess, Nyhan et al. have shown for the 2016 U.S. presidential election, the dissemination of false news has become a serious societal problem (Allcott & Gentzkow, 2017; Guess et al., 2018). The subject of determining the degree to which it is feasible to influence an election has received substantial attention within the context of election administration and has been studied from several viewpoints, such as management by bribery (Erdélyi et al., 2020) or by introducing and removing competitors and voters (Wilder & Vorobeychik, 2019). Different researchers (Castiglioni et al., 2020; Castiglioni & Gatti, 2021) have investigated social influence as a way of election control.

2.6 Green Voting

The premise that the environment is ultimately good underpins the literature linking economics and environmental preferences. Individuals place varied amounts of importance on the environment, which translates to different levels of interest in environmental conservation. Some scholars hypothesize that there should be a positive association between economic success and environmental concern since an increase in money often leads to a greater desire to pay for public utilities (Davis et al., 2008). Nevertheless, the wealthiest segment of the community may already have purchased private goods to substitute essential environmental services (private gardens, golf clubs) and hence may perceive environmental preservation as a redistributive approach (Salka, 2001). This paradox has prompted scholars to propose a nonlinear link between money and environmental choice (Kahn & Matsusaka, 1997). Others have suggested that the structure and effect of the economics supporting environmental voting might influence environmental preferences. Kotchen and Powers analyze statistics on voting for open-space preservation to determine that increased funding rates tend to reduce voter support (Kotchen & Powers, 2006).

The link between the extractive sector, urban and rural locations, and environmental protection is closely tied to studies on the relationship between revenue and pro-environmental behavior. Presumably, people who favor resource-intensive or extractive businesses are far less prone to support environmental preservation. Some academics have confirmed the hypothesized negative association between industry and environmental preferences (E. R. Gerber & Phillips, 2003; Kaplan, 1977; Salka, 2001; Svart, 1976), while others have failed to identify a relationship. Also, previous studies have revealed a link between the influence of the extractive sector and rural communities (Coan & Holman, 2008). Bornschieer et al. argue that the urban-rural divide is the result of development machine politics (Bornschieer et al., 2021; Gimpel & Karnes, 2006). Howell-Moroney contradicts Romero and Lisereo's research and proposes that the urban-rural divide is a product of varying land-use patterns (Howell-Moroney, 2004).

However, structural hurdles such as a climate-averse system are part of the solution, and psychological barriers also inhibit behavioral choices that might aid in reduction, adaptability, and environmental sustainability. While many individuals are involved in some ameliorative activity, the majority might do more if not for seven kinds of psychological obstacles or dragons of inaction: limited knowledge of the issue, an ideological viewpoint that tends to exclude pro-environmental sentiments, and conduct, comparisons with crucial other persons, sunk costs and behavioral inertia, discrepancy toward professionals and authorities, perceived dangers of change, and optimistic but insufficient motivation. Structural impediments must be eliminated whenever feasible, although this is doubtful to be adequate. Psychologists must collaborate with other scientists, technological specialists, and legislators to assist people in overcoming these psychological obstacles (Gifford, 2011; Lacroix et al., 2019).

2.6.1 Individualistic values

Many researchers have explored the influence of social and political variables on environmental interests and the impact of economic considerations on environmental choices. Press analyses environmental preference in California and concludes that affiliation is the most accurate predictor of environmental choice (Press, 2003). Coffey and Joseph noticed that partisanship was a strong predictor of environmental desire (Bomberg & Schlosberg, 2008; Coffey & Joseph, 2013), and Uyeki and Holland demonstrate that ideologies and partisanship had more association among “lower socio-economic groups, minorities, and women” (Uyeki & Holland, 2000). Despite the fact that this research has revealed partisanship to be a significant predictor of environmental choice, this variable has typically limited substantive impacts (Cruz, 2017).

In combination with partisanship, other demographic characteristics have been found to influence environmental choices. Education greatly predicts the desire to preserve the environment (Blaikie, 1993; O’riordan, 1981). Studies typically show the predicted positive association between literacy and pro-environmental attitudes (Kahn & Matsusaka, 1997), and other researchers indicate that age is a significant predictor of environmental choices, with younger individuals more inclined to support the environment since they were reared in an environmentally conscious society (Buttel, 1979; Mohai & Twight, 1987; O’riordan, 1981).

2.6.2 Environmental concerns and personal encounter

A growing number of research have examined the influence of climate change experiences on the establishment of attitudes and concerns toward climate-related and environmental problems. Individuals who have encountered severe weather and extreme conditions are more likely to believe in global warming and its human activity provokes (Dai et al., 2015), to be concerned about climate change, to be willing to participate in countermeasures (Hoffmann et al., 2022), and to support climate policies (Basher, 2008; Sloggy et al., 2021), according to existing evidence.

Although the majority of research indicates that experience is significant, the study settings and kinds of experiences examined vary considerably with regard to the influence’s significance and degree (Howe et al., 2019). A variety of human qualities and environmental circumstances affect how and if perceived changes become important. They include ideas about the local climate and its variations and economic considerations that may conflict with environmental considerations. Individuals may choose to favor economic and financial requirements during uncertain economic times, like in the advent of economic collapse (Sloggy et al., 2021). Additional relevant elements include individual ideological inclinations, political belief systems, and value frameworks (Coan & Holman, 2008; McAlexander & Urpelainen, 2020), in addition to demographic characteristics such as age, gender, and education (Jorgenson et al., 2019; Semenza et al., 2011; Solecki et al., 2015).

For continuous exposure, the construal model predicts a rise in environmental worries when the psychological separation between a person and the effects of climate change decreases (Schuldt et al., 2018). Experiences may lessen the psychological gap by rendering climate change, and associated threats seem more definite (hypothetical range) and temporally proximate (temporal range) than a hypothetical threat in the far future. Nevertheless, experiences might help individuals realize that climate change impacts them and their communities (spatial proximity), not a detached social group with whom they have no ties (social distance). Extensive data from cognitive and psychological sciences demonstrates that recent or frequent disasters, such as wildfires, storms, and floods, which are more cognitively ‘accessible,’ have a disproportionate effect on perceived risks, attitudes, and anxieties (availability heuristics) (Hoffmann et al., 2022; Zanoocco et al., 2018).

2.6.3 History of green voting in the U.S.

Statistics on public opinion show that environmental preservation concerns increased in the 1980s and throughout the 1990s (Hoffmann et al., 2022). This appears to be the outcome of noticeable public outcry against Reagan government environmental initiatives and the ongoing emergence of different environmental issues such as ozone depletion and global warming and an unending spectrum of specific incidents like the Exxon Valdez spill, contamination of ocean seashores, and poisoning of water supplies (Dunlap & Scarce, 1991). The presidential campaigns showed awareness of this issue. Damore learned that, at minimum, one presidential contender mentioned the environment in their campaign commercials during each of the four elections he investigated (from 1984 through 1996) (Damore et al., 2012). A short analysis of each of the five elections is necessary to examine the distinctive impact of the environmental problem in the presidential races from 1984 to 2000 (Berg, 2016; Guber, 2001). Evidence largely supports the existence of the environmental problem in all five.

According to previous research, at least a few of these races may have seen opinion patterns that encouraged issue voting. The environmental campaign has been highly effective in gaining and sustaining - for 20 years - the public’s attention to and backing of its cause said Dunlap in a 1991 article (Dunlap & Scarce, 1991). Guber observed that pattern of behavioral troughs and peaks over the previous 30 years, which implies that concern for the environment is subjective, increasing and declining in reaction to economic situations, policy expenses, media attention, or even sheer public weariness,” twelve years later. Ranking the severity or significance of the environment in relation to other concerns and voters’ unprompted designation of the environment as one of the most critical challenges” confronting the country are two potential indicators of voters’ devotion to the environment (Guber, 2013).

The first strategy yields a variety of outcomes. Guber notes that in a 1996 study, “preserving the environment” was placed sixth out of six with respect to what the problem is for the nation to handle, and in a 2000 Gallup survey, asking about how significant of a problem each of 7 pre-

selected subjects was, the environment was ranked fifth (Guber, 2003). Guber, however, points out that when people were asked in a subsequent Gallup survey conducted in 2000 about their “most significant” worries for the next 25 years, they rated the environment first out of a list of 8 political concerns. Out of 14 “second tier” policy issues in 1996, the environment came in at number 8 (Davis et al., 2008). In conclusion, voters are not particularly committed to the environmental problem, but their concern seems to be sufficient to support the assumption of quantifiable issue voting.

The 2020 election followed a similar pattern, although the outcome was not determined by climatic or environmental concerns; instead, voters’ opinions were mostly shaped by new problems like the pandemic as well as more established ones like the economy and party allegiance. Indeed, environmental issues have emerged as a predominant concern among voters, particularly among younger demographics where it features among their top three priorities. This points to a growing emphasis on sustainability and environmental responsibility within the electorate, marking a shift in societal values and political focus. Of course, attitudes on the environment and climate ranged drastically across the parties, as they did on many other current American problems; Democrats were roughly four times as likely to regard the environment and climate as critical concerns, while the most conservative Republicans maintained to reject the fundamental connection among the environment and human activity (Bomberg, 2021).

2.7 Conclusion

It is determined by intrinsic and extrinsic factors, as well as conventions and norms, which impact behavioral responses to external stimuli, whether concerns are turned into behavioral objectives, and, eventually, acts. Few studies have specifically examined the effects of climate change on voting and election results, despite the extensive literature linking concerns, intentions, and actions. Current research demonstrates that climatic elements might affect voting behavior, including voter turnout, votes for the ruling party, or voting in favor of the environment on ballots pertaining to climate change (Hoffmann et al., 2022). Rousseau and Deschacht also discovered that while public knowledge of environmental problems has not changed despite the crisis, public consciousness of nature-related subjects has improved in twenty European nations in the post-Covid-19 period (Rousseau & Deschacht, 2020)(Rousseau & Deschacht, 2020). The dragons of inaction are the name Gifford gave to this occurrence (Gifford, 2011). He emphasizes that although many psychological obstacles persist for those who do not encounter severe structural barriers, several important structural barriers prevent behavioral adjustments that might help minimize climate change. Indeed, numerous individuals actively address climate-related issues. However, a larger group faces impediments hindering their participation. This underscores the presence of barriers to environmental action, necessitating strategies to facilitate broader engagement in sustainability endeavours. Legislation and urban redevelopment should be used to eliminate structural impediments, but this is unlikely to be enough. If

there is to be any success in overcoming the many psychological obstacles, psychologists and other social scientists have a crucial role in serving (Gifford, 2011; Uzzell & Rätzl, 2009).

3 METHODOLOGY

3.1 Introduction

The goal of this part is to detail the study methodology as well as the data gathering and analysis methods. Indeed, this thesis focuses on exploring the correlation between climate change awareness and electoral tendencies in the U.S., particularly voter propensity towards the Green Party. This examination uncovers intriguing intersections between environmental cognizance and political participation. The study topic tries to determine if there are major disparities between individuals who recognise the truth of climate change and those who vote in favour of environmentally concerned political parties. The research intends to find possible links between higher environmental consciousness and increased inclination to vote for green parties via the analysis, offering insight on the dynamics that may impact the observed gap between awareness and voting behavior.

3.2 Selection of methodology

United States citizens of voting age are this study's primary population or element, and a questionnaire (Appendix 1) was distributed online across the country. The data collection duration was about 5 month (08/2022 to 01/2023). Due to the study's exploratory character and the population's homogeneity, the sampling methodology used non-probability sampling methods. Consequently, the probability of any member of the population being chosen is uncertain. In the next phase of the snowball sampling approach, an initial set of participants was chosen at random (Goodman, 1961).

3.3 Research instrument

This research utilizes a mixed-methods approach, intertwining quantitative and qualitative data collection techniques. A comprehensive methodology enhances the study's robustness, offering nuanced insights into the research problem. While the primary data collected is quantitative, in the form of a questionnaire, the study also includes qualitative data collected through open-ended questions in the questionnaire and online polls. These qualitative data provide a more in-depth understanding of respondents' beliefs, motivations, and incentives (Boynton & Greenhalgh, 2004; Frey, 1994). Mixed-method research is a popular research design in social science research that involves using both qualitative and quantitative research methods to gather data on a research question or topic (Creswell & Creswell, 2017; Teddlie & Tashakkori, 2010). The aim of mixed-method research is to provide a more comprehensive and holistic understanding of the research topic by using multiple sources of data to triangulate findings (Creswell & Creswell, 2017; Greene et al., 1989).

Quantitative data collection involves using structured instruments, such as questionnaires or surveys, to gather numerical data that can be analyzed using statistical techniques (Bryman, 2016; Rubin & Babbie, 2016). Quantitative data collection methods are useful for exploring the prevalence and distribution of variables and identifying patterns in data (Bryman, 2016).

Qualitative methods provide rich, non-quantitative insights into attitudes, beliefs, and experiences. This approach allows for a deeper understanding of the contextual factors influencing voting behavior and attitudes towards climate change (Bryman, 2016; Rubin & Babbie, 2016). Qualitative data collection methods can include open-ended questions in questionnaires, interviews, focus groups, and observations (Bryman, 2016). Qualitative data collection methods provide a rich and detailed understanding of the research topic and allow for the exploration of complex phenomena that cannot be captured by quantitative data alone (Rubin & Babbie, 2016).

Mixed-method research designs that use both quantitative and qualitative data collection methods can provide a more complete understanding of a research topic than using either method alone (Creswell & Creswell, 2018; Tashakkori & Teddlie, 2010). Qualitative information, secured via open-ended questionnaire queries and online surveys, can illuminate respondents' convictions, motivations, and incentives. Such insights, when dovetailed with quantitative findings, enrich the study's analytical depth (Greene et al., 1989). In this study a questionnaire has been used to gather information on people's views, attitudes, and actions since this research method provides an objective way of doing so (Boynton & Greenhalgh, 2004).

Moreover, employing this technique for extensive public data collection proves efficient and cost-conscious. This efficiency underscores the practicality of mixed-method research in expansive population studies (Jack & Clarke, 1998). In addition, a questionnaire is a principal method for obtaining primary quantitative data. A questionnaire permits the collection of quantitative data in a systematic manner, resulting in data that are internally coherent and consistent for assessment (Krosnick, 2018). A questionnaire can be used when there are scarce resources because it is relatively inexpensive to structure and administer, and time is a valuable resource that a questionnaire uses to the greatest extent possible. It is also used to verify other findings because questionnaires can be helpful verification tools when combined with other research because attendees will only answer honestly if their identities are kept secret, and personal privacy is upheld (Roopa & Rani, 2012). The goal of this survey was to determine which demographic groups of individuals (based on age, education level, gender, individual experience, COVID-19, and other factors) are more worried about the environment and whether or not they support political parties that are environmentally conscious. The questionnaire has also investigated the respondents' mentalities and the factors that led them to reach their conclusion.

3.4 Sampling procedures

Voting behavior, voting intention, and environmental concern are dependent variables. It is crucial to situate psychological well-being within a conceptual framework while discussing it. As a function of their voting behavior, age, status in society, schooling, region, social class, racial group, marital status or the number of children, employment, income level, gender, desire to vote, and other socioeconomic and cultural variables that are independent variables, this speaks to the psychosocial state of the individual. Political attitude factors such as Confidence in green parties should also be considered. While a link between psychological welfare and income is noted, exploration of ancillary factors such as the varying importance of income is warranted. Correlations exist between income and factors like higher education, well-compensated employment, and living standards. Political ideology, belief structures, party alignment, political preferences, and party attitudes may influence how personality impacts party attitudes and voting behavior. All these variables will be assessed using appropriate questions.

The following examples of closed-ended questions have been included in the questionnaire:

1. Binary questions, to which the responder responds with a yes or no.
2. The responder had several alternatives from which to pick in a multiple-choice question.
3. Scaled inquiries and answers were rated on a scale (Important, very important, and so on).

There were also sentence completion questions and questions that were left open-ended, so the responder was able to react on their own terms without being limited by a predetermined list of acceptable answers, in order to ask respondents about their beliefs, motivations, and incentives more directly and without bias (Roopa & Rani, 2012).

Finally, there were online polls with the help of a service for conducting online surveys. This survey was shared on various social media platforms. They were among the LinkedIn contacts, Facebook pals, or common friends in social media or elsewhere. These respondents were asked to name additional members of the target group, and future participants were chosen based on the recommendations and connections.

One of the benefits of snowball sampling is that it is faster to collect samples. Referrals simplify and expedite topic research since they originate from reliable resources (Johnson, 2014). This method is also cost-efficient. Referrals are received from a main data source, which makes this strategy cost-effective. It is convenient and less costly than other approaches (Johnson, 2014). A further benefit of this strategy is its ability to sample reluctant individuals, i.e., those who are unwilling to volunteer for research investigations or reluctant to have their identities revealed. In this circumstance, snowball sampling is useful since references are sought from individuals who know one another (Parker et al., 2019).

On the other side, the snowball approach has a few disadvantages, such as "sampling bias and error margin." This sampling strategy has the potential for sample bias and inaccuracy due to the fact that individuals recommend persons they know and who possess similar characteristics (Handcock & Gile, 2011). Lack of collaboration is another disadvantage of this strategy. Even after referrals, there is a possibility that individuals may be uncooperative and refuse to engage in research investigations. This implies that the research may only be able to reach a limited number of individuals, preventing it from producing solid conclusions (Biernacki & Waldorf, 1981). Based on a literature study of voting behavior in the United States, the sample variance level is 0.24. According to the Standard Error Formula (Goodman, 1961; Johnson, 2014), the sample size is roughly 89.

$$n = \left(\frac{Z \cdot \sigma}{D}\right)^2 Z = \text{Standard error associated with the confidence level (Z=1.96)}$$

σ = Standard Deviation

D = Margin of error desired

3.5 Data analysis

PSPP is a free software tool for statistical analysis of quantitative data, and it has been widely used in academic research. In a study by Arkkelin, the author recommends the use of SPSS for quantitative data analysis due to its user-friendly interface and data management capabilities (Arkkelin, 2014). PSPP has been found to be a viable alternative to commercial software tools like SPSS and SAS for data analysis.

Moreover, PSPP's capability to generate top-tier reports across diverse formats is advantageous. For researchers disseminating findings to stakeholders, this feature proves particularly beneficial (Arkkelin, 2014). Additionally, the software has features that allow for easy collaboration and data sharing among team members, which can be useful for large-scale research projects. PSPP V.1.6 is used through this study.

Several data analysis approaches were used, including factor analysis, item analysis, bivariate correlations, and descriptive statistics. Factor analysis is a multivariate statistical procedure that lowers a high number of variables to a smaller collection of underlying components, making complicated data sets more manageable to understand. To optimize the interpretability of the components, this approach employs eigenvalue decomposition and rotation algorithms such as Varimax or Promax (Shrestha, 2021).

Item analysis is used to examine the quality and performance of individual survey or assessment instrument items. Calculating item difficulty, discrimination indices, and point-biserial correlations aids in detecting items that are too easy or too tough, as well as those that do not successfully discriminate between high and poor performers c.

Pearson's correlation coefficient, for example, measures the degree and direction of a linear link between two variables. In statistical exploration, a coefficient oscillates between -1 and 1. This metric showcases relation dynamics—the strength and direction. At -1, we have a perfect negative association; at 1, a consummate positive tie; and at 0, an absence of any correlation. This strategy permits investigators to quantify the degree of interconnection between dual variables—an essential step towards crafting potential causative hypotheses (Achen, 1975). This framework remains a cornerstone in theoretical model construction.

Descriptive statistics including central tendency measures (mean, median, mode) and dispersion indices (range, variance, standard deviation) provide insightful data analysis. These methods illustrate key characteristics of the data set under study. Researchers may efficiently analyze the underlying structure of the data, assess the performance of individual items, investigate links between variables, and summarize the essential elements of the dataset by using these data analysis tools.

4 RESULTS AND DISCUSSION

4.1 Introduction

The executed study employed a sample comprising 112 American respondents, sourcing data related to demographics, political convictions, and climate change perceptions via a structured questionnaire. The survey instrument (Refer Appendix 1) solicited details from respondents pertaining to income, age, ethnicity, gender, occupational status, relationship condition, highest educational attainment, offspring count, community, political affiliation, and priorities. Moreover, participants' perceptions about climate change and its veracity were explored, supplemented with multi-option queries on a spectrum from 'strongly disagree' to 'strongly agree'.

Additionally, respondents were probed regarding electoral habits through broad inquiries, investigating both selected representatives and underlying motivations. Personal encounters with climatic shifts were scrutinized as well. Questions expanded to their pre- and post-COVID-19 pandemic views on climate change, hence infusing a time-oriented element into the data compilation.

This study's findings shed light on Americans' perspectives on climate change and how these perspectives may have evolved during and after the COVID-19 pandemic. These results may have implications for policymakers attempting to comprehend and address the public's perspective on this crucial issue.

4.2 Demographics and descriptive overview

The 112 research respondents presented a broad spectrum of demographic variation, capturing an assortment of genders, ages, ethnic backgrounds, income brackets, occupational circumstances, academic laurels, and familial dimensions. This diversity, in turn, furnishes a textured, multi-faceted backdrop for the inquiry. The subsequent tabulation encapsulates the demographic blueprint of the participants.

TABLE 4-1- THE DEMOGRAPHIC PROFILE OF THE RESPONDENTS

Demographic Profile	Number of Participants	Percentage
Gender		
Female	71	62.7%
Male	39	34.8%
Non-binary	3	2.7%
Age		
Under 18	4	3.5%
18-24	16	14.2%
25-34	59	51.8%
35-44	17	15.0%
45-54	10	8.8%
55-64	5	4.4%

Demographic Profile	Number of Participants	Percentage
Over 65	2	1.8%
Ethnicity		
White/Caucasian	61	54.5%
Asian American	24	21.8%
African American	8	7.1%
Hispanic/Latino	8	7.1%
Other	11	9.5%
Income Level		
< \$26,000	44	38.7%
\$26,000-\$78,000	17	14.6%
> \$78,000	15	13.0%
Undisclosed	37	32.7%
Employment Status		
Full-time	50	44.0%
Part-time	18	15.6%
Student	31	27.5%
Unemployed	9	8.0%
Marital Status		
Married	36	32.1%
Unmarried	76	67.9%
Children		
No Children	95	84.5%
Children	17	15.5%
1 child	7	6.4%
2-4 children	10	9.1%
>4 children	1	0.9%
Educational Attainment		
Bachelor's degree	39	34.5%
Master's degree	30	26.4%
College degree	12	10.9%
High school diploma	10	9.0%
Professional or associate's degree or less	13	11.5%
Doctorate	8	7.3%
Political Beliefs		
Democrat	71	62.9%
Independent	27	23.8%
Republican	12	10.5%
Other	4	3.8%

In terms of gender, 62.7% of those surveyed identified as female, with males accounting for 34.8% and non-binary persons accounting for the rest. The preponderance of the respondents was between the ages of 25 and 34, accounting for 51.8% of the sum. In terms of ethnicity,

54.5% said they were White/Caucasian, subsequent to Asian Americans (21.8%), African Americans (7.1%), Hispanic (7.1%), and other (9.5%). This diversity of demographic traits elucidates the composition of the participant group (See Figure 4-1).

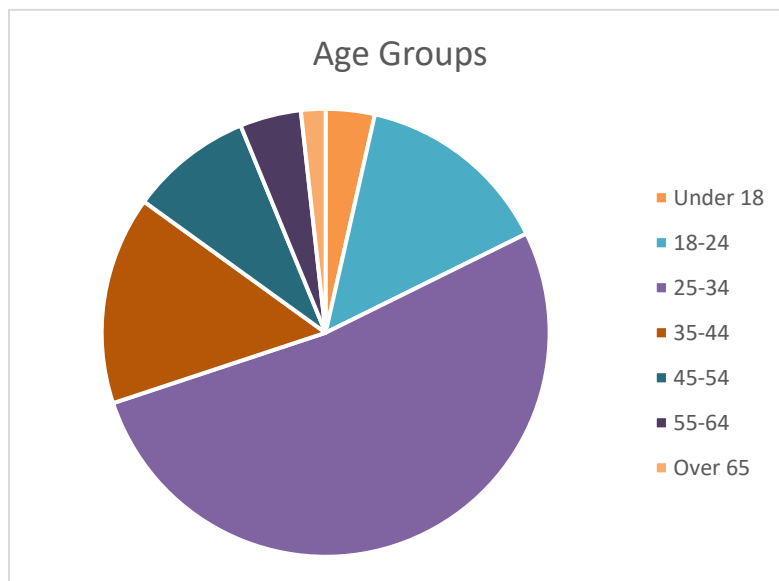


FIGURE 4-1- RESPONDENTS AGE GROUP STRUCTURE

Regarding financial earnings, the yearly income for 38.7% falls below the \$26,000 mark. Those earning between \$26,000 to \$78,000 represent 14.6% of the respondents, while 13.0% exceed this income range. An interesting 32.7% held their income figures confidential. Observing employment status, 44.0% hold full-time positions, standing in contrast to part-time employees who make up 15.6%. Individuals engaged in scholarly pursuits amount to 27.5%, and those currently without work constitute 8.0%.

In the domain of relationship status, 67.9% are unattached, whereas matrimonially committed individuals represent 32.1%. Parental status revealed a child-free majority at 84.5%, while 15.5% acknowledged having offspring, chiefly in the range of 1-4 children (6.4% with one, 9.1% with two or more, and a marginal 0.9% reporting over four).

Looking at educational attainment, holders of bachelor's degrees form the largest group at 34.5%, closely pursued by individuals boasting a master's degree at 26.4%. Focusing on educational achievements, individuals holding a college degree comprise 10.9%, while high school graduates embody 9.0% of the participant pool. Those possessing a professional or associate's degree, or qualifications below these, make up 11.5%. Doctorate degree holders represent a modest 7.3% of the total sample (Refer to Fig 4-2). Turning to political affiliations, Democrats stand as the foremost group at 62.9%, succeeded by Independents at 23.8%, Republicans at 10.5%, and other political affiliations making up the remaining 3.8%.

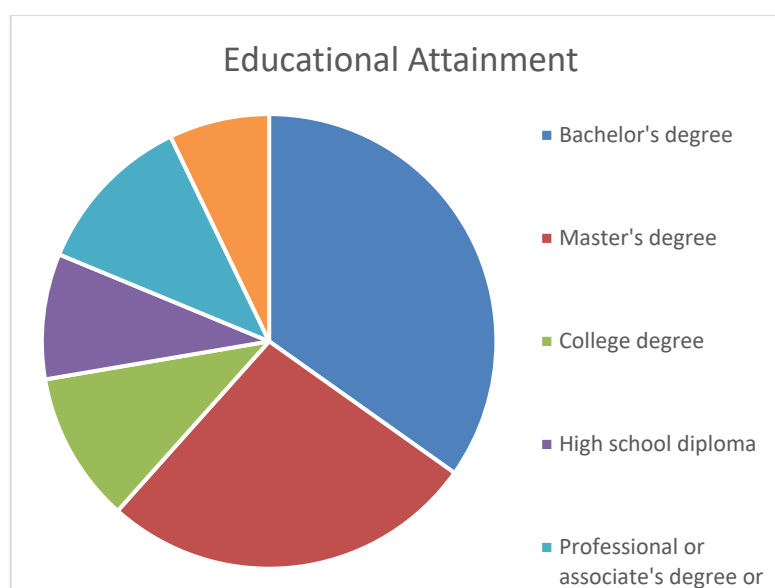


FIGURE 4-2- RESPONDENTS EDUCATIONAL ATTAINMENT STRUCTURE

In general, the demographic profile of the participants can be a corresponding representative of the diversity of the American population, with participants from various backgrounds, educational levels, and income levels. These demographics must be considered when understanding the study's results, since they may impact opinions regarding climate change and political affiliation.

4.3 Data analysis

4.3.1 Reliability check

The following table (Table 4-2) provides a general overview of the correlation among different queries. As it's shown, overall positive correlations exist among most of the questions (green color). Yet the Pearson correlation is around 0.5 indicating medium level of homogeneity but not redundancy. To further analyze the reliability of the data, item analysis using Cronbach alpha is performed.

TABLE 4-2- CORRELATION AMONG DIFFERENT QUERIES

	How important should climate change be to the government	Voters are responsible for the elected party's attitude regarding climate change	I would rather vote for a president who prioritise environment	I would vote for a party that has plans to reduce taxes for customers	I would vote for a party that is going to allocate more public funds for	I would vote for a government with plans to eliminate any use of fossil	Fossil fuel-consuming companies should be required to	I would not vote for a party without strict energy efficiency	I would vote for a party with proposed policies to reduce the costs of	I would vote for a party that is going to compensate for the imposed	I would vote for a party planning to mandate basic	What do you think about the amount of government subsidies allocated	What do you think about the amount of government subsidies allocated	To what extent do you support allocating the national budget to	I am willing to invest my talent, money, or time to solve	How often do you do energy-saving and resource-	How worried are you about climate change
How important should climate change be to the	1	0.085	0.525	0.293	0.418	0.554	0.573	0.326	0.505	0.444	0.62	0.269	-0.412	0.436	0.425	0.48	0.668
Voters are responsible for the elected party's	0.085	1	0.232	0.221	0.244	0.241	0.255	0.158	0.265	0.303	0.234	-0.044	-0.067	0.179	0.11	0.098	0.149
I would rather vote for a president who prioritise	0.525	0.232	1	0.356	0.433	0.514	0.536	0.298	0.416	0.483	0.516	0.166	-0.331	0.39	0.356	0.216	0.571
I would vote for a party that has plans to reduce taxes for	0.293	0.221	0.356	1	0.541	0.433	0.367	0.323	0.555	0.449	0.429	0.093	-0.317	0.362	0.141	0.305	0.349
I would vote for a party that is going to allocate more public	0.418	0.244	0.433	0.541	1	0.631	0.534	0.493	0.632	0.574	0.646	0.108	-0.528	0.413	0.429	0.439	0.533
I would vote for a government with plans to eliminate	0.554	0.241	0.514	0.433	0.631	1	0.653	0.597	0.579	0.638	0.561	0.291	-0.374	0.346	0.457	0.336	0.646
Fossil fuel-consuming companies should	0.573	0.255	0.536	0.367	0.534	0.653	1	0.429	0.601	0.545	0.619	0.244	-0.384	0.39	0.463	0.392	0.549
I would not vote for a party without strict energy efficiency	0.326	0.158	0.298	0.323	0.493	0.597	0.429	1	0.543	0.524	0.541*	0.108	-0.264	0.333	0.298	0.22	0.465
I would vote for a party with proposed policies to reduce the	0.505	0.265	0.416	0.555	0.632	0.579	0.601	0.543	1	0.701	0.658	0.176	-0.345	0.423	0.341	0.433	0.461
I would vote for a party that is going to compensate for the	0.444	0.303	0.483	0.449	0.574	0.638	0.545	0.524	0.701	1	0.605	0.221	-0.37	0.354	0.381	0.341	0.505
I would vote for a party planning to mandate basic	0.62	0.234	0.516	0.429	0.646	0.561	0.619	0.541	0.658	0.605	1	0.147	-0.484	0.479	0.513	0.415	0.555
What do you think about the amount of government	0.269	-0.044	0.166	0.093	0.108	0.291	0.244	0.108	0.176	0.221	0.147	1	-0.042	0.244	0.026	-0.052	0.22
What do you think about the amount of government	-0.412	-0.067	-0.331	-0.317	-0.528	-0.374	-0.384	-0.264	-0.345	-0.37	-0.484	-0.042	1	-0.428	-0.298	-0.358	-0.445
To what extent do you support allocating the national budget to	0.436	0.179	0.39	0.362	0.413	0.346	0.39	0.333	0.423	0.354	0.479	0.244	-0.428	1	0.289	0.381	0.375
I am willing to invest my talent, money, or time to solve	0.425	0.11	0.356	0.141	0.429	0.457	0.463	0.298	0.341	0.381	0.513	0.026	-0.298	0.289	1	0.269	0.416
How often do you do energy-saving and resource-	0.48	0.098	0.216	0.305	0.439	0.336	0.392	0.22	0.433	0.341	0.415	-0.052	-0.358	0.381	0.269	1	0.594
How worried are you about climate change	0.668	0.149	0.571	0.349	0.533	0.646	0.549	0.465	0.461	0.505	0.555	0.22	-0.445	0.375	0.416	0.594	1

Cronbach's alpha is a frequently used measure of a test's or questionnaire's internal consistency or reliability. It considers the average correlation of all the items to determine how consistently a group of items measures a single hidden component. Higher Cronbach's alpha values imply more dependability, whereas lower levels indicate poor reliability. As demonstrated in Table 4-3, Cronbach's alpha of 0.9 shows a high level of consistency among the questionnaire responses. Considering the high level of homogeneity there seems to be no need to remove any questions as it is also shown in the below table.

TABLE 4-3- RELIABILITY CHECK

Cronbach's Alpha	N of Items
0.9	18

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
How important was the climate change issue when you decided how to vote in the last election	59.4	136.04	0.53	0.9
How important should climate change be to the government	57.32	123.38	0.68	0.89
Voters are responsible for the elected party's attitude regarding climate change	57.87	134.02	0.27	0.91
I would rather vote for a president who prioritize environmental matters over economic expansion.	57.91	122.97	0.61	0.9
I would vote for a party that has plans to reduce taxes for customers of energy-efficient products.	57.21	129.18	0.52	0.9
I would vote for a party that is going to allocate more public lands for renewable energy production (e.g., solar, geothermal, and wind energy).	57.21	123.18	0.71	0.89
I would vote for a government with plans to eliminate any use of fossil fuels and replace them with clean energy	57.51	119.74	0.77	0.89
Fossil fuel-consuming companies should be required to pay a carbon tax	57.4	120.82	0.74	0.89
I would not vote for a party without strict energy efficiency standards for appliances, transportation, and new constructions.	57.87	126.55	0.58	0.9
I would vote for a party with proposed policies to reduce the costs of Eco-friendly appliances	57.16	123.26	0.76	0.89
I would vote for a party that is going to compensate for the imposed air and water pollution on the community by funding the harmed areas	57.28	124.26	0.74	0.89
I would vote for a party planning to mandate basic environmental education in schools.	57.17	122.11	0.77	0.89
What do you think about the amount of government subsidies allocated to the fossil fuel industries	58.71	138.75	0.23	0.91
What do you think about the amount of government subsidies allocated to the renewable energy industries	59.96	149.93	-0.53	0.92
To what extent do you support allocating the national budget to employ workers to maintain the natural resources	57.99	132.88	0.52	0.9
I am willing to invest my talent, money, or time to solve environmental problems.	57.52	128.71	0.5	0.9
How often do you do energy-saving and resource-conservation actions	57.91	131.14	0.48	0.9
How worried are you about climate change	57.73	122.65	0.73	0.89

4.3.2 Factor analysis

Factor analysis is a statistical approach for identifying underlying factors that explain variation in a collection of observable variables. The objective of component analysis hinges on the re-

duction in the volume of interrelated variables. This contraction is accomplished through deciphering the correlation patterns inherent among these variables. Before moving forward and finding the components, it would be beneficial to check the number of factors using scree plot (Figure 4-3). The figure has been drawn using Eigen values and components number. As shown, three factor would be most fitting.

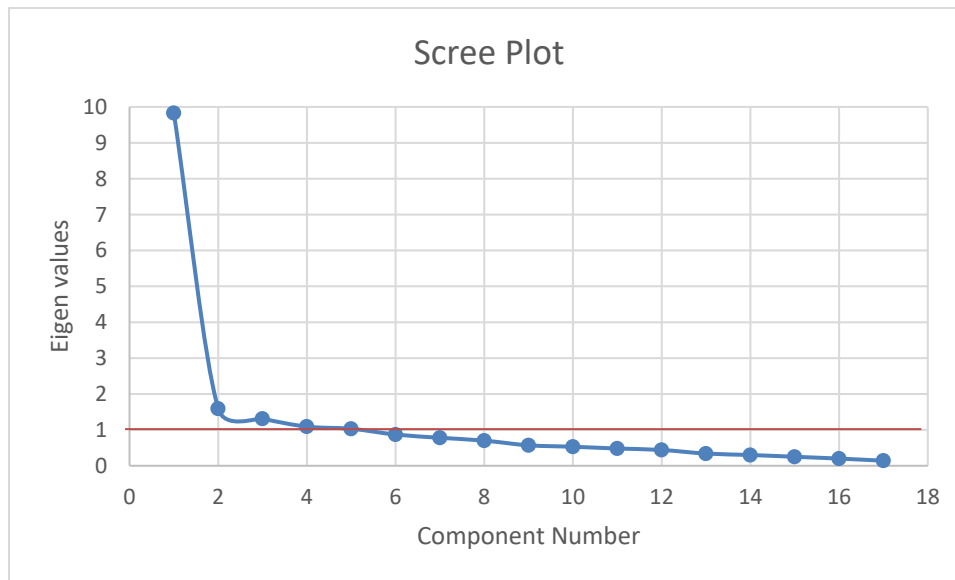


FIGURE 4-3 – SCREE PLOT TO DETERMINE THE NUMBER OF FACTORS

Table 4-4 shows three factors with eigenvalues larger than one, indicating that they explain for more variation than a single observed variable. Once the factors have been rotated to enhance interpretability, the rotated component matrix demonstrates the correlations between each observed variable and each factor.

TABLE 4-4- FACTORS WITH EIGENVALUES LARGER THAN ONE

#	Questions	Components		
		1	2	3
1	How important should climate change be to the government	0.74	-0.42	-0.04
2	Voters are responsible for the elected party's attitude regarding climate change	0.3	0.61	0.12
3	I would rather vote for a president who prioritize environmental matters over economic expansion.	0.66	-0.09	0.1
4	I would vote for a party that has plans to reduce taxes for customers of energy-efficient products.	0.58	0.41	-0.05
5	I would vote for a party that is going to allocate more public lands for renewable energy production (e.g., solar, geothermal, and wind energy).	0.78	0.43	-0.15
6	I would vote for a government with plans to eliminate any use of fossil fuels and replace them with clean energy	0.81	0	0.24
7	Fossil fuel-consuming companies should be required to pay a carbon tax	0.78	0.46	0.1
8	I would not vote for a party without strict energy efficiency standards for appliances, transportation, and new constructions.	0.64	0.47	0.22
9	I would vote for a party with proposed policies to reduce the costs of Eco-friendly appliances	0.8	0.54	0.1

#	Questions	Components		
		1	2	3
10	I would vote for a party that is going to compensate for the imposed air and water pollution on the community by funding the harmed areas	0.78	0.40	0.21
11	I would vote for a party planning to mandate basic environmental education in schools.	0.82	0.63	-0.07
12	What do you think about the amount of government subsidies allocated to the fossil fuel industries	0.26	-0.39	0.64
13	What do you think about the amount of government subsidies allocated to the renewable energy industries	-0.59	0.09	0.43
14	To what extent do you support allocating the national budget to employ workers to maintain the natural resources	0.58	-0.04	-0.18
15	I am willing to invest my talent, money, or time to solve environmental problems.	0.57	-0.18	-0.12
16	How often do you do energy-saving and resource-conservation actions	0.57	-0.12	-0.54
17	How worried are you about climate change	0.78	-0.29	-0.1

To find the most unified components, the threshold of 0.4 is defined for loading factors. The first component addresses participants' perspectives on climate change as a government priority. It covers questions regarding environmental priorities, worries about climate change, and support for programs addressing fossil fuel usage and carbon pricing.

The second component assesses participants' support for environmentally friendly policies in a variety of areas, including energy-efficient items, renewable energy generation, stringent energy efficiency regulations, and the promotion of eco-friendly appliances. It also emphasizes the readiness to vote for parties who offer measures to solve these environmental challenges.

The third component highlights the importance of voters in defining a political party's stance on climate change. It consists of a question on voters' accountability for the chosen party's stance on environmental problems.

TABLE 4-5- FACTORS AND ASSOCIATED QUERIES

Components	Description	Questions	Cronbach's Alpha
C1	Climate Change significance in Govt planning	1,3,4,5,6,7,8,9,10,11, 14,15,16, 17	0.9
C2	Eco-Friendly Policy Support	2,5,7,8,9,10, 11	0.89
C3	Voter Responsibility	12,13,7	0.70

4.3.3 Other significant aspects

In addition of the results of the factor analysis, there are several parameters in the questionnaire that deserve to be evaluated. The first is personal climate change experience that responders have had. Firsthand climate change experiences may affect people's minds because they give actual consequences that are impossible to ignore. Individuals tend to perceive the urgency and gravity of climate change more palpably when confronted with extreme weather phenomena,

deluges, or periods of aridity in their immediate environment. These encounters make the abstract notion of climate change more personal and relevant, strengthening the individual's emotional attachment to the subject.

Personal experiences may also alter previously held assumptions or misconceptions regarding climate change. When confronted with the reality of its consequences, people may reconsider their positions, resulting in a transformation in their knowledge and attitudes. Furthermore, firsthand encounters may instill feelings of vulnerability and urgency. People may be more motivated to learn about climate change, participate in conversations, and take action if they realize they are personally impacted by it. Such enhanced engagement could potentially bolster understanding regarding the repercussions of climate change, accentuating the necessity of strategies for mitigation and adaptive response (Konisky et al., 2016; Myers et al., 2013).

The effect of the COVID-19 pandemic would be the second. Because of reduced industrial output and travel, the pandemic has resulted in a temporary drop in greenhouse gas emissions. This unforeseen outcome demonstrated that emissions may be reduced and highlighted the potential advantages of a more sustainable lifestyle. People may become more willing to adopt long-term behavioral and legislative changes to address climate change (Le Quéré et al., 2020; Le et al., 2020). And the last one would be the denial possibility of climate change which obviously could lead to inaction.

TABLE 4-6- OTHER SIGNIFICANT FACTORS TO BE CONSIDERED

Extracted components	Questions
Personal experience	<ul style="list-style-type: none"> • Have you personally experienced the effects of climate change?
COVID-19	<ul style="list-style-type: none"> • How much more or less concerned are you about climate change now compared to how you were before the pandemic? • Which of the following statements on initiatives to help economic recovery after the COVID 19 outbreak do you agree with the most? • After the COVID-19 outbreak, I am more inclined than before the pandemic to...
Is the climate change real?	<ul style="list-style-type: none"> • Do you think climate change is happening?

4.4 Result interpretation

4.4.1 Climate change belief and personal experience

A significant 81.3% of participants agree to the phenomenon of climate change, contrasted by 14.3% who express uncertainty, and a meager 4.5% who remain sceptical. The study's findings indicate a strong correlation between firsthand experience with the effects of climate change, such as natural disasters, dramatic temperature changes, and extreme weather patterns, and beliefs about its occurrence and degree of concern (Table 4-7). Participants reporting first hand encounters with these environmental repercussions demonstrated an increased propensity to acknowledge the occurrence of climate change and voiced more pronounced apprehensions

surrounding it. Participants specifically pointed to arid winters, scorching summers, and other atypical weather patterns as evidence of climate change.

These findings demonstrate the significance of personal experience in shaping attitudes and beliefs regarding climate change. The findings propose that individuals with personal experiences of climate change ramifications demonstrate higher receptivity towards messages delineating its severity, and exhibit more readiness to partake in mitigating actions. These insights bear considerable implications for climate change communication and advocacy, underscoring the necessity to render the issue intimately relevant to individuals, thus fostering increased involvement and proactive behavior. Yet regarding association between voting and concerns about climate change, there is a weak correlation.

In addition, the results of the survey reveal gender-based distinctions in climate change beliefs. The discrepancy is worth highlighting, as 85.5% of female participants acknowledged the undeniable existence of climate change, while the proportion among male participants stands at 76.9%. Irrespective of gender identity, these results underscore the necessity for tailored initiatives aimed at heightening awareness and understanding of climate change across all individuals. Women demonstrate a higher level of receptiveness towards climate change messages, suggesting that customizing efforts to align with women's needs and interests could prove more effective in fostering engagement and action on this issue. Furthermore, the lower level of belief observed among men accentuates the requirement for focused outreach initiatives aimed at enhancing their awareness and comprehension regarding the ramifications of climate change. These outcomes also imply that gender might influence the perception of climate change and support for environmentally sustainable policies.

TABLE 4-7- RESPONSES REGARDING CLIMATE CHANGE BELIEF AND PERSONAL EXPERIENCE

Questions		Did you vote?	Do you think climate change is happening	How worried are you about climate change	Have you personally experienced the effects of climate change
Did you vote?	Pearson Correlation		0.048	0.06	0.105
	Sig. (2-tailed)		0.613	0.532	0.271
Do you think climate change is happening	Pearson Correlation			0.449	0.28
	Sig. (2-tailed)			0	0.003
How worried are you about climate change	Pearson Correlation				0.428
	Sig. (2-tailed)				0
Have you personally experienced the effects of climate change	Pearson Correlation				
	Sig. (2-tailed)				

The belief in climate change is a significant factor in shaping political beliefs and actions. This study reveals that 63.7% of Democrats, 22% of Independents, and merely 7.7% of Republicans hold the belief in climate change. These results underscore the influential role of political affiliation in shaping individuals' perspectives on this matter.

Furthermore, a conspicuous political divide emerges from the data, with Democrats displaying a significantly higher likelihood of believing in climate change compared to Independents and Republicans. The inquiry into the paramount concerns of voters during a presidential election stands as a pivotal area of interest within political science research. The study findings highlight the participants' prioritization of key issues, with the economy garnering the highest importance rating at 31.3%, followed by civil rights at 27.7%, and healthcare at 15.2%. Environmental issues (11.6%) and education (9.8%) were also identified as important to a significant portion of the participants, while foreign policies, preservation of constitutional rights and freedom, and disability rights were less frequently mentioned.

The substantial percentage of participants prioritizing the economy as the most significant issue comes as no surprise, considering the enduring economic challenges confronting the nation. The COVID-19 pandemic has had a significant impact on the economy, with many people losing their jobs or experiencing financial difficulties. It is likely that these economic concerns motivated a large portion of the participants to prioritize this issue in their voting decision.

The second most important issue identified by the participants was civil rights, which may reflect a growing awareness and concern about issues of social justice and equality in American society. This could be due to a number of factors, including the ongoing Black Lives Matter movement, high-profile cases of police brutality, and the growing diversity of the US population (Berger & Miller, 2021). These variables have elevated racial inequality and social civil rights issues to the forefront of public discourse, making them more relevant to voters.

Healthcare was also listed as an important concern, that may also reflect worries about the availability of healthcare, the high price of medical treatment, and the ongoing debate over healthcare reform in the United States (Brodie & Kirzinger, 2020; A. L. Campbell & Shore-Sheppard, 2020). In the light of the ongoing COVID-19 pandemic, healthcare is likely to remain an important issue in the forthcoming presidential election.

Environmental and educational concerns were also cited by a considerable proportion of respondents, indicating that these concerns continue to be essential to some electors. The relatively limited representation of respondents mentioning foreign policies, the preservation of constitutional rights and freedom, and disability rights as significant issues potentially indicates a lack of awareness or concern about these matters among the broader population.

Upon scrutinizing the questionnaire data, a clear pattern emerges among respondents who acknowledge the reality of climate change. Precisely, the breakdown reveals that 55% of respondents who believe in climate change relate to liberals, 8.8% as conservatives, and 36.3% as neutrals. These findings underscore a correlation between political views and climate change beliefs, with liberals exhibiting a higher propensity to acknowledge its existence compared to conservatives. Furthermore, it is noteworthy that liberals exhibit a stronger emphasis on environmental concerns and demonstrate a greater inclination towards supporting governmental endeavors aimed at mitigating climate change. In contrast, conservatives are typically more skeptical about the existence and immediacy of climate change and prefer to prioritize economic concerns.

The fact that 36.3% of individuals who believe in climate change identify themselves as neutral indicates that the issue of climate change is not always linked to a specific political identity. It is feasible that these people place a higher priority on other concerns and do not strongly identify with liberal or conservative values.

Table 4-8 displays the mean scores and standard deviations for three components linked to climate change viewpoints and environmentally friendly policies, organized by respondents' beliefs on whether climate change is occurring (no, maybe, definitely). Climate change as a government priority (C1 = 0.41), support for environmentally friendly policies (C2 = 0.37), and the role of voters in establishing a political party's position on climate change (C3 = 0.40) are the three components. The p-values (all significant) were computed via Spearman correlations.

TABLE 4-8- VIEW ON THE CLIMATE CHANGE OCCURRENCE AND ITS IMPLICATIONS

Do you think climate change is happening?		C1	C2	C3
p-value (Kruskal-Wallis-test)		<0.001	0.001	0.010
No	Mean	3.42	3.56	3.1
	N	5	5	5
	Std. Deviation	1.03	0.91	0.74
Maybe	Mean	2.69	2.82	2.66
	N	16	16	16
	Std. Deviation	1.05	1.25	1.18
Yes	Mean	3.96	4.05	3.83
	N	91	91	91
	Std. Deviation	0.69	0.67	0.72
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Deviation	0.88	0.89	0.9

In general, respondents who believe that climate change is occurring have higher mean scores in all three areas, indicating stronger consensus with the need for the government to prioritize addressing climate change, backing for environmentally friendly policies, and awareness of the influence of voters on political parties' environmental stances. The average scores of participants who expressed uncertainty about climate change were lower across all three components, whereas those who denied the existence of climate change demonstrated the lowest mean scores. These findings suggest that confidence in the occurrence of climate change aligns with concerns and support for climate-related policies and measures.

4.4.2 Demographics and belief in climate change

4.4.2.1 Parenthood

According to the results of the survey, a significant proportion of participants who support the reality of climate change do not have children. In particular, 84.6% of these participants are childless. It is worth mentioning that a sizable 81.3% of people in this exact category have decided not to have children. Also, 6.6% have one kid, while 12.1% have two or more. None of the participants who support the theory of climate change have more than four children. This information suggests that individuals without offspring may be more prone to believe in climate change. This result can be interpreted in numerous ways. Those individuals who demonstrate a heightened level of concern regarding climate change tend to prioritize environmental considerations over the choice to have children.

This could be due to environmental concerns about overpopulation or a commitment to lowering their carbon imprint (Chen, 2020; Preston & Baimel, 2021). Another possible explanation is that environmentally conscious individuals tend to delay or have fewer children due to their beliefs and lifestyle choices. This could be due to a number of factors, including an increased concern for the future of the planet and a desire to leave future generations a better world (Farrukh et al., 2023)(Farrukh et al., 2023). It is also possible that individuals with children are more concerned with imminent issues, such as meeting their family's needs, and place less importance on environmental concerns.

Among the subset of individuals who held a disbelief in climate change, a slightly greater proportion was observed to have two to four children, whereas the percentage of individuals with more than four children was negligible. This may indicate that these individuals have a more traditional or conservative mindset, in which having a larger family is viewed as preferable and immediate requirements are prioritized over long-term environmental concerns. The implications of these findings for climate activists are substantial. A notable proportion of individuals who believe in climate change have chosen not to have children. Advocates for systemic changes that have a greater impact on reducing greenhouse gas emissions than encouraging individuals to make personal changes. When devising policies regarding climate change, policymakers

should also consider the perspectives of individuals without children, whose priorities and concerns may differ from those of parents.

When devising policies regarding climate change, policymakers should also consider the perspectives of individuals without children, whose priorities and concerns may differ from those of parents. Reflecting on the demographical dispersion, an appreciable aggregate of entities who affirm the existence of climatic alterations primarily fall in the 25-34 age bracket, comprising 52.7% of the total. Delving further into the age groups, entities nestled within the 18-24 and 35-44 brackets account for 24.2% and 13.4% respectively. This demographic dispersal reflects the varied degrees of engagement with climate change discourse across different age cohorts. This data adds another layer of understanding to our demographic analysis. Minimal allocation is noted for the rest of the age classifications, encompassing those below 18 years. It can be inferred that entities in their mid to late twenties demonstrate superior predilection towards acknowledging climate change, in comparison to their counterparts from other age groups. This propensity can be ascribed to the elevated cognizance and enlightenment regarding climatic changes and their corresponding repercussions among the newer generations.

4.4.2.2 Gender

Exploring the gender perspective, 64.8% of entities affirming the incidence of climate change are identified as female, whilst 33% as male, and 2.2% identify as non-binary. This set of information implies that female entities depict a superior probability to affirm climate change in contrast to their male counterparts. This tendency can be traced back to the fact that female entities frequently display an enhanced responsiveness towards environmental issues and tend to place climate change on a priority pedestal as an exigent matter. Also, females might be more mindful of the possible consequences of environmental degradation on vulnerable groups like children and elderly people and hence are more inclined to address the problem (J. M. Smith et al., 2021).

Noting that the non-binary category is relatively minor in this data set limits our ability to derive conclusions regarding the climate change beliefs of non-binary individuals. To better comprehend the climate change beliefs of non-binary individuals, additional research is required.

4.4.2.3 Marital status

This study also investigates whether the marital status of individuals influences their opinions and viewpoints regarding climate change. 29.7% of the participants in this investigation who believe in climate change are married. One possible reason for this discovery is that married people may have more stable and settled lifestyles, making them less receptive to altering their routines and habits. Besides that, married individuals may have additional roles and responsibilities, making it more challenging for them to prioritize environmental concerns over other concerns, such as family or professional life (Kollmuss & Agyeman, 2002). Importantly, this finding

should not be interpreted as a definitive answer to the question of whether marital status influences climate change beliefs.

4.4.2.4 Income level

Assessing income distribution juxtaposed with climate change belief, it is observed that 43.7% of affirmers have an annual income below \$26,000. This substantial representation of lower-income entities could be linked to the scarcity of resources they might possess to withstand climate change impacts. Further analysis reveals that 25.1% and 12.5% of climate change affirmers reside within income brackets of \$26,000-\$78,000 and above \$78,000 respectively. This demographic composition lends insights into the economic heterogeneity among individuals acknowledging the realities of climate change. This data may suggest a potential financial restraint among a significant number of believers in adopting sustainable practices or procuring environmentally friendly commodities, thus constraining their resilience against climate change. It's also notable to mention that a section equating to 18.7% of the participants opted for nondisclosure of their income. This may be due to the sensitivity of financial data or the dread of being judged based on their income level. However, the paucity of data from this group of participants may hinder our comprehension of the correlation between income level and belief in climate change.

The observed data suggests that personal income could be instrumental in shaping an entity's conviction in climate change and their propensity to contribute towards its mitigation. Among the climate change affirmers, 62.3% are gainfully employed, students represent 26.7%, retirees form 3.3%, while the unemployed comprise 5.6%. This further underscores the potential influence of economic status on the perceptions and actions towards climate change. The prominent representation of employed entities among climate change affirmers indicates a potential heightened cognizance of climate change impacts on their respective professional sectors and the broader economy. This observation reinforces the link between occupational engagement and environmental awareness. It may also suggest that these individuals are more likely to have workplace access to information and resources regarding climate change.

Contrarily, the lower representation of retirees and unemployed individuals among climate change affirmers might insinuate their relatively diminished awareness or concern towards the issue. Such a pattern could originate from a deficiency in accessibility to climate change information, insufficient resources, or the belief that the implications of climate change bear minimal direct effect on their daily existence.

Such a pattern might be attributed to a deficit in availability of climate change-related information or resources. Additionally, an assumption that climate change repercussions do not bear a direct impact on quotidian life could also contribute to this observed trend. Regarding education, individuals who believe in climate change have a wide variety of educational backgrounds.

4.4.2.5 Educations

Scrutinizing the educational background, a minor 5.5% of entities possess merely a high school diploma, while 12.1% have partially completed college education. Entities boasting associate, bachelor's, and master's degrees represent 4.4%, 36.3%, and 25.3% respectively. This data delineates the educational composition among those affirming the reality of climate change, further highlighting the potential influence of academic qualifications on environmental perspectives. Professional degree holders form another 4.4%, with doctoral degree holders at 7.7%. The considerable representation of bachelor's and master's degree holders might insinuate a correlation between elevated education and acceptance of climate change. Those with advanced educational qualifications may have greater exposure to information and research concerning climate change, fostering enhanced cognizance and acceptance of its existence.

Contrastingly, the relatively scarce representation of entities with education levels below or at par with high school graduation signifies the potential influence of education on climate change beliefs. It is conceivable that people with lesser levels of education have less means of learning about climate change, resulting in a diminished comprehension or affirmation of its actuality.

4.4.2.6 Ethnicity

It is plausible that individuals with lower academic qualifications may possess limited avenues to learn about climate change, resulting in diminished understanding or recognition of its verity. Assessing the ethnic makeup, it is found that 57.1% of climate change believers identify as White/Caucasian. Equally, the portion of Black/African American, Hispanic or Latino, Asian American, other Pacific Islander, and multiracial individuals acknowledging climate change are 6.6%, 4.4%, 20.9% and 8 % respectively. This data reveals the varied levels of climate change belief across different ethnic communities. This demographic display indicates varied levels of climate change affirmation among different ethnic groups. The pronounced representation of White/Caucasian individuals might be due to their relatively superior access to educational resources and awareness tools associated with climate change. It is noteworthy, though, that the sample size for some ethnic clusters is minute, potentially impacting the data reliability.

Inspecting community type, 59.3% of climate change affirmers inhabit a city or urban community, 33% reside in suburbs, and rural communities accommodate 7.7%. This demarcation hints that higher climate change awareness correlates with residence in densely populated areas. An individual's cognizance and understanding of climate change could be significantly shaped by residing in an urban environment, commonly characterized by elevated air pollutants and heightened susceptibility to climate-induced extreme weather phenomena, including heat-waves and floods.

This may explain why a greater proportion of climate change believers reside in urban areas. On the reverse hand, rural residents may have a greater appreciation for the effects of climate

change on their local ecosystems due to their greater connection to nature. The percentage of rural residents who believe in climate change, however, was relatively low at 7.7%. It is conceivable that this is due to a relative lack of exposure to data and assets regarding climate change in rural communities; this is a potential area for additional research and outreach.

4.4.3 Supporting green policies

When queried regarding the importance of climate change in shaping their voting choice in the recent election, 23.2% of entities marked it as supremely critical, while a substantial 67.9% classified it as a decisive factor. However, 8.9% of participants dismissed it as insignificant. In terms of governmental focus on climate change, 41.1% of entities expressed that it should be utterly pivotal, whereas 32.1% opined it should be treated as very significant. Interestingly, 14.3% viewed it as moderately significant, a minor 4.5% as slightly significant, and 8% as not noteworthy. This data further illuminates the perceived importance of climate change in the political and governance realm among different sections of the population.

Individuals and their perceptions of the government's role in addressing the issue of climate change accord the issue a high level of importance, as indicated by the data (Table 4-9). The fact that a significant percentage of voters regarded it to be a deciding factor is a clear indication that the issue is of great significance to the population. In general, respondents who believe governments are primarily to blame for climate change have the greatest average score throughout all three components (C1 = -0.16, C2 = 0.15, C3 = -0.09), suggesting a stronger emphasis on climate change as a government priority, backing for environmentally friendly policies, and awareness of the role of voters in influencing political parties' environmental positions. In contrast, individuals who believe that no one is to blame for climate change had the lowest mean scores across all three components. This shows that the degree of interest and backing for climate-related policies and measures is influenced by the notion of personal responsibility for climate change. However, it must be noted that there is no statistically significant correlation for the C2, and C3 components, indicating the perception of eco-friendly policies and responsibility of voters is not much different among varied groups who believe in diverse responsible bodies for the climate change.

Additionally, an overwhelming majority of respondents—over 70%—deem climate change as an issue of utmost importance for government action, suggesting it should be categorized as either exceedingly or very crucial. This inclination underscores the expectation among citizens for government to actively engage in addressing the climate crisis, substantiated by the fact that climate change substantially influences their electoral choices. This expectation is consistent with the global trend, in which governments throughout the globe are under pressure to take action to mitigate the effects of climate change (Coglianese & D'Ambrosio, 2007).

TABLE 4-9- RESPONDENTS VIEW ON CLIMATE CHANGE'S RESPONSIBLE STAKEHOLDER

Which of the following is mostly responsible for climate change?		C1 (Gov- ernment planning)	C2 (Eco- friendly policy)	C3 (Voters responsi- bility)
p-value (Kruskal-Wallis-test)		0.043	0.275	0.162
citizens	Mean	3.61	3.7	3.46
	N	14	14	14
	Std. Devia- tion	0.55	0.6	0.81
governments	Mean	4.12	4.19	3.87
	N	25	25	25
	Std. Devia- tion	0.55	0.54	0.65
industries	Mean	3.84	3.92	3.71
	N	62	62	62
	Std. Devia- tion	0.85	0.91	0.89
the media	Mean	3.02	3.14	2.94
	N	4	4	4
	Std. Devia- tion	0.67	0.44	0.63
Climate change is unavoidable, and no one is responsible for it	Mean	2.37	2.76	2.79
	N	7	7	7
	Std. Devia- tion	1.25	1.41	1.47
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Devia- tion	0.88	0.89	0.9

The fact that more than 40% of respondents believe that climate change should be of utmost importance to the government reflects an increasing awareness of climate change's consequences on our planet. The findings also indicate an enhancement in public awareness of this critical issue, accompanied by the expectation of appropriate government intervention.

According to the study's results (Table 4-10), respondents overwhelmingly aligned with the proposed eco-friendly values. Specifically, 86.8% of participants agreed or strongly concurred with the preference to support a political entity committed to increasing public land allocation for renewable energy production, such as solar, geothermal, and wind energy. Furthermore, 71.5% agreed or strongly agreed that they would favour a party promoting renewable energy production and the replacement of fossil fuels with cleaner energy alternatives. Additionally, a large majority—85.8%—expressed agreement or strong agreement with support for policies reducing the cost of eco-friendly products. Meanwhile, 80.3% concurred, showing strong agreement with

backing a political party that proposes compensating communities impacted by air and water pollution by channelling funds towards these affected areas.

Overall, respondents who believe in public transportation improvements have the highest mean scores throughout all three components (C1 = -0.35, C2 = -0.32, C3 = -0.30). This suggests a greater focus on climate change as an administration's priority, backing for green initiatives, and recognition of voters' role in forming political parties' environmental positions (for instance using the public transportation instead of private cars). Respondents who believe nothing ought to be changed, on the other hand, had the lowest mean scores in each of the three areas. This implies that the region viewed by the government as requiring improvement is connected to the amount of concern and support for climate-related policies and initiatives.

TABLE 4-10- RESPONDENTS VIEW ON THE AREAS OF GOVERNMENTAL INTERVENTION

Regarding the climate change crisis, what area should be improved by the government?		C1	C2	C3
p-value (Kruskal-Wallis-test)		0.009	0.063	0.007
Nature (Protect the plant community, conserve the natural resources, support green entities etc.)	Mean	3.99	4.08	3.81
	N	59	59	59
	Std. Deviation	0.63	0.63	0.72
Transportation (Improve community recycling, design residential areas efficiently, etc.)	Mean	4.05	4.15	3.99
	N	24	24	24
	Std. Deviation	0.49	0.54	0.67
Nutrition (Food waste reduction, promoting green diets, enhancing farming techniques, etc.)	Mean	2.6	2.89	2.75
	N	3	3	3
	Std. Deviation	0.7	0.29	0.43
Economy (Adopt green policy in production, support clean businesses, etc.)	Mean	3.97	3.97	3.64
	N	7	7	7
	Std. Deviation	0.53	0.37	0.78
Energy (Promoting renewable resources, energy waste reduction, etc.)	Mean	3.35	3.57	3.25
	N	12	12	12
	Std. Deviation	0.9	1.03	1.07
Nothing	Mean	1.66	1.7	1.93
	N	7	7	7
	Std. Deviation	0.67	0.85	0.84
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Deviation	0.88	0.89	0.9

In addition, 83.5% of respondents strongly agreed that they would support a policy mandating fundamental environmental education in schools, and 78.1% agreed and strongly agreed that fossil fuel companies should be required to pay carbon taxes.

Moreover, a substantial majority of respondents, 85.5%, supported allocating national budget funds to employ employees to maintain natural resources. This response indicates that the general public values the preservation of natural resources and recognizes the significance of providing jobs to support these efforts. The allocation of national resources to employ employees for the maintenance of natural resources can have multiple positive effects on the economy and the environment (Bahmani et al., 2023; Hassan et al., 2019). Employment of individuals to restore forests, clear waterways, and manage wildlife populations, for instance, can aid in the protection and preservation of natural ecosystems (Collins, 2019). Indeed, such measures could foster climate change mitigation, safeguard biodiversity, and ensure the delivery of vital ecosystem services. The consequences for long-term sustainability are obvious and direct. Thus, this underscores the essential role of political leadership in advancing environmental protection and sustainability agendas (Jaeger et al., 2020; Malmshemer et al., 2008).

Investing in the restoration and maintenance of natural resources can also support local economies and reduce the unemployment rate (Odindi & Ayirebi, 2010; Resnick et al., 2012; Serageldin, 1993). Employment of individuals to restore natural resources can establish employment opportunities in rural areas with limited employment opportunities.

Moreover, the presence of thriving ecosystems can attract vacationers and contribute to the expansion of the tourism industry and community well-being (Sumanapala & Wolf, 2020). The high level of support for allocating a portion of the national budget to employing individuals to maintain natural resources suggests that this policy is likely to enjoy broad public support. This support can be mobilized to urge political action that prioritizes the protection and restoration of natural resources.

Overall, there was a strong correlation between strongly agreeing with these ecological values and believing in climate change, according to the findings. In particular, those who firmly concurred with ecological policies were more likely to believe in climate change. These findings suggest that those who believe in climate change tend to support green policies more. By emphasizing the correlation between belief in climate change and support for green policies, advocates can present a more persuasive case for policies that support environmentally conscious and sustainable practices.

4.4.4 Responsibility

The data reveals that 73.7% of those acknowledging climate change exhibit a readiness to expend their resources—financial, temporal, and skills—towards environmental problem-solving,

signifying their proactive stance towards the issue. Additionally, a striking 92.3% claim occasional to consistent engagement in energy-saving and resource-conservation practices. This suggests a heightened consciousness of environmental impact among this group, along with active efforts towards its mitigation.

In terms of assigning responsibility for climate change, a predominant proportion (59.3%) of those acknowledging the issue primarily attribute blame to industries. Subsequently, the government is held accountable by 20.9% of this group, followed by citizens, and the media. This reveals a varying perception of culpability among the population concerning this global environmental crisis. Interestingly, a minor proportion (4.4%) consider climate change as inevitable, absolving any entity of blame for the crisis. These perspectives demonstrate diverse interpretations of responsibility and agency in the context of climate change.

This suggests that those surveyed place a disproportionate amount of responsibility for climate change on industries and the government, as opposed to individuals. This may indicate that participants believe collective action is required to combat climate change, as opposed to relying solely on individual actions (Esty & Moffa, 2012; Hanson, 2017).

4.4.5 Governmental actions

Democrats have the highest mean scores across all three components, indicating a greater emphasis on climate change as a government importance (C1 = 0.31), support for environmentally friendly legislation (C2 = 0.35), and acknowledgment of the role of voters in molding political parties' environmental positions (C3 = 0.13). Contrastingly, those respondents identifying as Republicans exhibited the lowest mean scores across all three components. This highlights variations in environmental perceptions and priorities across different political affiliations. This implies that political party membership is associated to worry as well as backing for climate-related policies and activities, with Democrats exhibiting more concern and support than Republicans and other affiliations.

TABLE 4-11- POLITICAL ORIENTATION AND SUPPORT FOR GREEN INITIATIVES

What political party do you identify with the most?		C1	C2	C3
p-value (Kruskal-Wallis-test)		0.006	0.007	0.001
Democrat	Mean	4.02	4.12	3.87
	N	68	68	68
	Std. Deviation	0.68	0.7	0.76
Republican	Mean	2.8	3.06	2.7
	N	11	11	11
	Std. Deviation	0.86	0.86	0.91
Independent	Mean	3.6	3.71	3.52

What political party do you identify with the most?		C1	C2	C3
	N	25	25	25
	Std. Deviation	0.89	0.9	0.87
None	Mean	3.29	3.11	3.19
	N	8	8	8
	Std. Deviation	1.26	1.31	1.2
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Deviation	0.88	0.89	0.9

The data collected from the questionnaire reveals the participants' perspectives on what should be done globally to combat climate change. The plurality of participants, 49.1%, believe that climate change should be addressed immediately. This demonstrates the participants' sense of urgency regarding the issue of climate change. 33% of the participants believe that incremental action should be taken while learning how to cope with the situation. This indicates that there is a contingent of participants who favor a cautious approach to addressing climate change.

A minor percentage of participants, 4.5%, believe that the current measures implemented to combat climate change are sufficient. This may indicate that some participants lack awareness or comprehension of the gravity of the issue.

Interestingly, 13.4% of the sampled individuals advocate no intervention for climate change mitigation, suggesting an undercurrent of skepticism or denial of the climate crisis among a minority. Conversely, an overriding majority (56%) affirms the necessity for immediate responsive measures, underscoring the heightened sense of urgency and concern. An additional 35.2% recommend phased, informed actions, revealing a balanced approach of promptness and prudence. A minute 7.9% regard the climate crisis as unresolvable, yet this forms a small fraction, implying a predominant belief in the need for either immediate or incremental actions. This data signifies a heightened apprehension surrounding climate change, emphasizing the call for action. This is corroborated by the overwhelming 92% demanding government-led initiatives to curb greenhouse gas emissions, irrespective of international reciprocity. This unanimous insistence reveals a robust conviction in addressing climate change promptly, alongside a readiness to endure possible economic and political consequences. Public opinion concerning governmental subsidy allocations to fossil fuel and renewable energy sectors is evidently evolving, with a mere 12.5% endorsing increased fossil fuel subsidies, contrasted by a dominant 65% advocating a reduction. This indicates that individuals are becoming more aware of the negative environmental impact of fossil fuels and are advocating for a reduction in government support for these industries (van Asselt et al., 2022).

Conversely, a noteworthy majority of participants (76.8%) express their support for an escalation in government subsidies allocated to renewable energy industries, accentuating the feasibility of renewable sources as a viable alternative to fossil fuels. This shift in public sentiment reflects a positive stride towards mitigating greenhouse gas emissions and tackling the adverse effects of climate change.

Substantial popular support exists for redistributing government funding within the energy sector, as seen by the large gap between proponents of cutting fossil fuel subsidies and those of expanding renewable energy subsidies. This highlights a growing readiness among the public to embrace renewable energy solutions. Policymakers must recognize this transition in public opinion and respond accordingly. This survey's results can provide valuable insights to policymakers and government officials as they allocate resources and funding to address various issues, including climate change (Crist, 2007; Esty & Moffa, 2012).

4.4.6 Impact of COVID-19 pandemic

One of the study's objectives was to determine the effect of the COVID-19 epidemic on people's worries about climate change. The purpose of the poll was to see whether participants' degree of worry about climate change has altered since the epidemic started. As shown in the table below, those who stated "no change" in their worries levels and were already concerned about climate change prior to the pandemic had the highest average rating (4.07), suggesting that their perspectives were more in line with the first component's motif. Individuals who reported being "slightly less worried now" got the lowest mean score (2.3).

Component 2 (advocacy for ecologically beneficial policies) follows the same approach. The data indicates that respondents who reported feeling "significantly more worried now" about climate change obtained the highest mean score of 4.25. On the other hand, those who expressed feeling "slightly less worried now" obtained the lowest mean score of 2.78. This result indicates that there is a link between worry and the sense that climate change has to be addressed immediately. Those who experienced heightened worry tended to have a stronger conviction regarding the importance of taking immediate action to mitigate the impacts of climate change. Component 3 (voters' influence on political party stance) had the greatest average score among people who were "significantly more worried now" (3.95) and the lowest for those who stated "no change" in their concern rates but were not particularly concerned before the pandemic (2.67).

TABLE 4-12- COVID19 PANDEMIC IMPACT ON CLIMATE CHANGE VIEWS

How much more or less concerned are you about climate change now compared to how you were before the pandemic?		C1(Government planning)	C2(Eco-friendly policy)	C3 (Voters responsibility)
Spearman Correlation		0.37	0.35	0.30
p-value (Kruskal-Wallis-test)		0.000	0.10	0.019

Slightly less worried now	Mean	2.3	2.78	2.75
	N	1	1	1
	Std. Deviation	NA	NA	NA
No change: I was not particularly worried.	Mean	2.55	2.75	2.67
	N	19	19	19
	Std. Deviation	1	1.2	1.13
No change: I was already worried	Mean	4.07	4.14	3.88
	N	42	42	42
	Std. Deviation	0.53	0.5	0.63
Slightly more worried now	Mean	3.82	3.87	3.66
	N	26	26	26
	Std. Deviation	0.59	0.67	0.71
Significantly more worried now	Mean	4.13	4.25	3.95
	N	24	24	24
	Std. Deviation	0.66	0.65	0.81
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Deviation	0.88	0.89	0.9

According to this table, the COVID-19 pandemic may have changed people's opinions about climate change, with some being more concerned about it. According to some experts, going through a catastrophe like the COVID-19 pandemic may raise awareness of other global risks like climate change (Kanda & Kivimaa, 2020; Leiserowitz et al., 2019). Furthermore, the pandemic may have highlighted the interconnection of global challenges, resulting in a change in priorities or views (Dryhurst et al., 2020).

When asked about their favored strategy for economic recovery after the COVID-19 pandemic, the majority of participants, 69.6%, concurred that governments should aid in a greener economic recovery, even if it means sacrificing economic growth and employment. When asked whether economic recovery or environmental conservation should take precedence, 27.7% of respondents selected the former.

These results also suggest that individuals' concerns regarding climate change are associated with their attitudes toward economic recovery initiatives. Since the beginning of the pandemic, the vast majority of those who reported an increase in their degree of concern about climate change also favored a sustainable approach to economic recovery.

In addition, since the beginning of the COVID-19 pandemic, a significant number of people have been more likely to participate in environmentally friendly activities. In this context, it is noteworthy that 53.6% of the respondents expressed a greater likelihood to engage in remote work, indicating an increased preference for conducting business activities from home. Furthermore, 11.6% indicated a heightened inclination to utilize public transit as an alternative to driving. Additionally, 2.7% reported a greater inclination to opt for non-flight-related holiday plans, suggesting a shift towards more sustainable travel choices. Moreover, 10.7% of respondents indicated an increased mindfulness in monitoring their home's energy usage, reflecting a growing awareness of personal energy consumption. These findings collectively signify a growing consciousness and adoption of environmentally friendly practices in various aspects of daily life. This indicates that the pandemic has had a positive impact on people's environmental attitudes and their propensity to adopt sustainable behaviors.

The findings indicate that the COVID-19 pandemic has had a significant impact on individuals' climate change concerns. This provides policymakers and communicators with an opportunity to use the increased awareness to promote climate action and sustainable behaviors. Furthermore, the data show that a sizable percentage of individuals were concerned about climate change even before the pandemic, and that this worry has not been amplified by the epidemic. Consequently, policymakers must take a targeted approach when promoting climate action, catering to the diverse attitudes and perceptions of the general public regarding climate change.

4.4.7 Voting behavior

The table below shows the mean scores and standard deviations of three components (C1 = 0.19, C2 = 0.15, and C3 = 0.13) related to climate change viewpoints and environmentally friendly policies, categorized by respondents' voting status (whether they voted or not). In general, voters have slightly higher mean scores across all three components than non-voters, indicating greater emphasis on climate change as a government importance, support for environmentally conscious policies, and acceptance of the role of voters in determining political parties' environmental stances. The findings suggest that voters tend to show higher levels of concern and support for climate-related policies compared to non-voters. However, it should be noted, that as the p-Value associated with C3 is high, there is no significant difference between people believe in voters responsibility among individuals who voted and who did not. This inclination is reflected in their increased likelihood of conducting business from home, using public transit, choosing non-flight holiday plans, and being more mindful of home energy usage. These actions indicate a greater environmental consciousness among voters, emphasizing their alignment with climate change mitigation efforts.

TABLE 4-13- VOTING AND VIEWS ON THE CLIMATE CHANGE MATTER

Did you vote?	C1	C2	C3
p-value (Mann-Whitney test)	0.020	0.005	0.138

Did you vote?		C1	C2	C3
no	Mean	3.65	3.77	3.57
	N	50	50	50
	Std. Deviation	0.77	0.85	0.82
yes	Mean	3.83	3.92	3.68
	N	62	62	62
	Std. Deviation	0.96	0.92	0.96
Total	Mean	3.75	3.85	3.63
	N	112	112	112
	Std. Deviation	0.88	0.89	0.9

The data reveals that there is no statistically significant distinction in mean scores between voters and non-voters, indicating a lack of strong correlation between voting participation and both climate change concern and support for environmentally beneficial policies. It is plausible that political ideology, social status, and individual experiences play more substantial roles in shaping individuals' perspectives on climate change and the associated policies. These factors likely exert a stronger influence on people's views than mere voting behavior. Furthermore, it is conceivable that non-voters worry regarding the environment and climate change but did not vote for a variety of reasons, including a lack of interest in the candidates or voting hurdles.

Among those who believe in climate change but did not vote, some are so disappointed that, despite their opinion, they do not believe that any change can occur, their votes have impact and that, in the end, the changes will be determined by large industries. Therefore, they do not vote or participate in the election.

When asked why they voted for a particular candidate, many participants cited particular policy issues as motivating factors. Voters for Joseph Biden referenced his support for education and climate change, as well as his extensive political experience. They also stated his intention to obscure the distinction between the affluent and the disadvantaged. Donald Trump's supporters cited multiple reasons for their vote, notably emphasizing his positions on issues such as the working class, healthcare, education, and economic policies. They also appreciated his support for the oil and gas industry, foreign policy, and emphasis on freedom.

A significant majority (over 90%) of respondents stated that their vote was primarily motivated by preventing the opposing candidate from winning, rather than having a strong ideological or policy preference. This finding suggests that the choice to vote was influenced by a strategic decision to prevent what voters perceived as a less desirable outcome rather than a deep alignment with their chosen candidate's beliefs or policy agenda. This suggests that the decision-

making process for many voters was influenced more by avoiding what they considered to be a less desirable outcome rather than a wholehearted endorsement of their chosen candidate.

Notable was the fact that participants who supported green policies did not vote for a green party candidate, but rather for Joseph Biden. They explained that green parties were unpopular and had no realistic likelihood of succeeding in the election, and that voting for them could result in a worse outcome than a victory for Donald Trump. Instead, they believed that Joe Biden had greener values and policies than Donald Trump, so they voted for him.

Some participants believe that green parties are only knowledgeable about environmental policies and lack experience in other fields. People require economic recovery, particularly after the COVID-19 pandemic, but they do not believe green parties are capable of achieving it. A minority of respondents believed that Mother Nature will address the problem. Some participants who believe in climate change cited that technology and a strong economy are able to address the issue, and that Trump is more supportive of industries and the economy than Biden. This demonstrates the difficulty green parties confront in obtaining broader electoral support, despite the increasing public awareness of environmental issues. Some participants, however, questioned the effectiveness of green parties in addressing issues beyond environmental policies, such as healthcare and education. Even individuals who prioritize green policies acknowledge the importance of a candidate who can effectively address a wide range of issues, rather than solely focusing on environmental concerns. After the COVID-19 pandemic, there is a preconceived notion that green parties seem to have very little experience to address broader issues, such as economic recovery.

This highlights the importance of promoting civic education and encouraging greater participation in order to enhance voter turnout and foster increased confidence in democratic institutions. Some participants who support the fight against climate change expressed confidence in the capacity of technology and a robust economy to resolve environmental issues, indicating that they may not see the need for a particular green party or candidate. Some participants who did not support the concept of climate change, on the other hand, disregarded it as a hoax or argued that the earth will repair itself.

Ultimately, the findings of this study shed light on the reasons why individuals cast their ballots as they did in the 2020 US presidential election. They suggest that while policy issues were essential to some electors, many were motivated by a desire to prevent what they perceived to be a worse outcome, as opposed to a strong commitment to a particular candidate or ideology. In addition, the study emphasizes the complex factors electors consider when making decisions, which include not only policy issues but also the perceived electability of candidates and their ability to address a variety of issues.

4.5 Implications and research questions

People's perspectives regarding climate change have been impacted by range of matters, from personal experience to media exposure to the COVID-19 epidemic, with some becoming more concerned about the subject. A worldwide crisis may raise awareness of other global problems, such as climate change, and highlight the interconnectedness of global complications, leading to a change in priorities or viewpoints. According to Dryhurst et al. (2020), those who perceived bigger hazards from COVID-19 were more likely to show worry about climate change. Since the onset of the pandemic, a considerable number of individuals have exhibited an increased inclination towards engaging in environmentally conscious behaviors. These include working from home more frequently, choosing public transportation over personal vehicles, opting for vacation trips that do not involve air travel, and monitoring household energy consumption. Individuals, however, want economic recovery, especially after the epidemic, but they do not think green parties can provide it. This implies that the epidemic may have impacted voters' priorities and their emphasis on matters other than climate change.

Personal climate change experiences tend to impact environmental concerns and voting behaviors among eligible Americans. According to Egan and Mullin, those who have experienced severe weather events are more likely to be concerned about climate change and to support climate policy (Egan & Mullin, 2017). Respondents who believe governments are the primary cause of climate change have the greatest average rating throughout all three components, suggesting greater urgency on climate change as an administration's priority, support for policies that are environmentally friendly, and understanding of the role of voters in shaping political parties' environmental stances. Respondents who believe climate change is unavoidable and that no one is responsible for it had the lowest mean scores in all three components.

The assessment of the dissimilarities in gender in the research, reveals deviations in the 3 components (C1, C2, and C3) among female and male participants. In all three components, female participants scored higher than male participants. This indicates that females, on average, displayed a higher level of engagement and support across all three components of the study. This shows that female participants were more likely than their male counterparts to regard climate change as a government priority, favor environmentally friendly policies, and understand the significance of voters in molding political parties' environmental orientations. The data additionally demonstrates that both female and male respondents were equally likely to believe that voters have responsibility for the elected party's stance on climate change, to invest their talent, money, or time in solving environmental problems, and to take part in energy-saving and resource-conservation behaviors. In contrast, female participants expressed a relatively higher level of concern regarding climate change and reported feeling more apprehensive about the issue in the present compared to before the pandemic.

The study's results on the gender gap may give insights into the reasons that lead to the observed disparity in knowledge and voting behavior for green parties or candidates. Recognizing these differences may aid in the development of targeted initiatives and campaigns to fill the divide and promote more environmentally aware voting patterns among various demographic groups.

The study also investigated the connection between participants' relationship status and their responses to the three components. According to the outcomes, married respondents had the highest average scores across all 3 components, C1 (3.85), C2 (3.98), and C3 (3.64). The study observed a cohort of individuals who were either single and never married or single and cohabiting with a significant other. The former group scored mean of 3.78, 3.85, and 3.63 for the 3 variables C1, C2, and C3, respectively. The latter group obtained mean scores of 4.00, 4.05, and 3.78 for the same variables. In comparison to other relationship statuses, married individuals were more likely to prioritize climate change as a government concern, support environmentally friendly policies, and recognize the influence of voters in shaping the environmental stances of political parties.

Similar to the findings related to gender, married and single participants displayed similar inclinations regarding attributing blame to voters for a party's stance on climate change, engaging in contributions of time, money, or talent to address environmental issues, and practicing energy and resource conservation. Yet, married participants reported being somewhat more concerned about climate change and being more concerned about climate change currently than before the epidemic.

There are disparities in people's climate change knowledge, eco-friendly behaviour, and readiness to vote for green parties. Participants who favored green policies voted for Joseph Biden rather than green party candidates, since green parties were seen as unpopular and unlikely to win the election. Some participants believe that green parties are solely informed about environmental policy and have little experience in other areas, including healthcare, education, and economic recovery, particularly in the aftermath of the COVID-19 epidemic. Bouma et al. discovered that those who value green policies often realize the need for a candidate who can handle a wide range of challenges, not only those related to the environment (Bouma et al., 2019). Some participants who support the battle against climate change indicated trust in the ability of technology and a strong economy to handle environmental challenges, implying that they do not see the need for a specific green party or candidate.

To summarize, while people are conscious of the climate change crisis, and the COVID-19 pandemic has increased their concern, they do not always vote for green parties or candidates because they prioritize economic recovery and other issues, perceive green parties as inadequate experience in fields other than the environment, and believe in the ability of technology and an economic boom to resolve environmental problems. Individual climate change experiences, as

well as political party identification, influence environmental concerns and voting patterns among eligible voters in the United States.

5 CONCLUSION

While it is true that a majority of participants recognize the reality and gravity of climate change, there seems to be a gap between their awareness and their voting behavior, as well as various obstacles that impede their support for green parties and policies related to climate change. Several factors for this gap were discovered based on the survey questions. First, certain individuals do not vote for green parties because they feel they do not have enough power and would fail if elected.

Furthermore, there is always rivalry between Democrats and Republicans, but green parties are never taken into account. Consequently, there is concern that voting for green parties may lead to their votes being disregarded and rendered ineffective. Second, some participants consider that green parties are exclusively competent in environmental matters and have little expertise in other areas. People want economic recovery, particularly after the COVID-19 epidemic, but they don't think green parties can provide it. Furthermore, a significant proportion of participants vote for a particular politician or party not necessarily due to shared values, but rather as a strategic move to prevent the party or candidate with fewer beliefs and policies on climate change from winning. They vote for someone else to prevent the worst-case scenario. Fourth, some people are so disappointed that, despite their firm belief in climate change, they do not feel that any change is conceivable and that, in the end, major companies will decide the changes. As a result, they do not want to join in the tournament or vote. Fifth, several participants who believe in climate change said that technology and a strong economy can handle the problem. Very few individuals who believe in climate change say that there is not a requirement for green parties and that the president, irrespective of party membership, should have green ideals and support green initiatives.

The research underlines the importance of demographic characteristics, political affiliation, individual experiences, and the COVID-19 epidemic in shaping opinions regarding climate change.

Citizens, who are less inclined to endorse the notion of climate change, need targeted outreach to raise their knowledge and understanding of the issue. As a result, policymakers and advocates for climate change should create personalized and relevant communication tactics to inspire greater levels of engagement and action on this issue. They must also evaluate the main issues of voters in the approaching presidential election, including the economy, civil rights, and healthcare, as well as environmental and educational problems, which continue to be significant to a sizable majority of participants. In addition, it is imperative to promote structural modifications that have the potential to generate significant outcomes in mitigating greenhouse gas emissions and tackling the complexities associated with climate change.

5.1 Recommendations and Discussion:

This study emphasizes the imperative need for increased climate change awareness and action. To close the disparity between voter awareness and voting behavior, political candidates and parties, specially green parties, must have a clear and consistent message on environmental

issues, prioritize climate change in their platforms and communicate clearly and effectively their positions to voters.

In addition, there is opportunity to capitalize on the increased awareness of climate change brought about by the COVID-19 pandemic in order to promote climate action and sustainable practices. This can be accomplished by advocating for policies that promote sustainable development and promoting environmentally friendly practices in daily life, such as reducing energy consumption and waste.

Also, making climate change issues more personal and pertinent to individuals can increase their participation and motivation to act. This can be accomplished by highlighting how climate change impacts people's daily lives and by demonstrating the impact their actions can have.

To better comprehend the elements that lead to disparity between awareness and voting behavior, more research is required. Longitudinal studies that monitor the attitudes of individuals towards climate change and other political issues over time can provide valuable insight into how evolution of these attitudes influences voting behavior. In addition, more research is required to determine impact of other demographic factors, such as ethnicity and socioeconomic status, on disparity between voter awareness and voting behavior.

5.2 Limitations of the study

Online research has its own set of restrictions that may affect the validity and reliability of the findings, particularly web-based survey research. Problems with sampling are one of the major restrictions since it may be difficult for the researchers to choose a representative sample (Andrade, 2020; Andrews et al., 2007). Since the traits of people who participate in virtual communities are often unknown, it may be challenging for researchers to assess if the sample is typical of the bigger population (Lefever et al., 2007; Schaefer & Dillman, 1998)

In addition, web-based surveys may be unable to determine whether respondents have understood the queries or taken the time to provide accurate data (Rowley, 2014). In addition, participants may not respond to specific questions due to lack of interest, time constraints, or lack of knowledge, which can result in missing data. These limitations hinder the ability to generalize study results and identify the characteristics of the target population (Bethlehem, 2010; Greenacre, 2016).

There are also other limitations to this study that need be noted. First, since the information was self-reported, it might be prone to recollection and social desirability biases, which could affect the validity and reliability of the findings (Tourangeau & Yan, 2007). Second, the convenience sampling-derived sample size of 113 individuals has some limitations to be representative of the total US population (Stratton, 2021).

It is essential to recognize that the cross-sectional nature of the research may not comprehensively encompass the potential alterations in individuals' views and opinions over a period (Battaglia et al., 2008). The data collected at a single point in time cannot be used to analyze the evolution of attitudes and beliefs in the course of time. The limitations must be acknowledged

to ensure the veracity and validity of the findings. Future research should seek to resolve these limitations and provide a deeper understanding of the subject.

5.3 Future research suggestions

In order to better understand and handle the difficulties of climate change, future research ought to investigate and build on the following topics:

1. Examine the factors that influence voting behavior and attitudes toward climate change in samples that are larger and more diverse. Comprehending the complex interplay of factors that impact views on climate change, and their potential variations across demographic categories and political affiliations, is of utmost importance. By scrutinizing these factors, policymakers and climate activists can develop more effective strategies to increase awareness, comprehension, and action regarding climate change. Conduct longitudinal studies to examine how attitudes towards climate change may continue to evolve over time. As the impacts of climate change become increasingly evident and the exigency of the matter intensifies, comprehending the potential evolution of individuals' perspectives towards climate change is crucial. Longitudinal studies can provide valuable insights into the factors that may influence changes in attitudes towards climate change.
2. Conduct longitudinal studies to investigate how attitudes toward climate change may continue to change over time. In light of the increasing body of evidence regarding the impacts of climate change and the growing sense of pressure surrounding this matter, it is imperative to acquire a deeper understanding of how people's views towards climate change may develop over time. Longitudinal studies can provide invaluable knowledge about the variables that may influence shifts in climate change attitudes.
3. Analyze the climate change beliefs of non-binary individuals and investigate the impact of variables such as marital status, ethnicity, and community type on climate change beliefs. It is crucial to understand how these elements influence the experiences and beliefs of non-binary individuals regarding climate change. By comprehending these factors, policymakers and climate-activists can develop more targeted and effective strategies to promote climate change awareness, comprehension, and action among non-binary people and other underrepresented groups.
4. Technology and social media advancements offer promising opportunities to bridge the gap between voter awareness and voting behavior. Future research could examine the efficacy of various social media platforms and online tools in persuading electors to prioritize climate change in their voting decisions. The utilization of social media promotions and online voter leads can serve as a means to inform voters about the political stances of candidates on issues such as climate change. Additionally, online polls and surveys may offer contemporaneous data on the attitudes and behaviors of voters. Using these tools, political campaigns and advocacy efforts can be more effective in engaging and encouraging electors to address climate change.

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APPENDICES

Appendix 1: Questionnaire

1. What is your age group?

Under 18	55 to 64
18 to 24	65 to 74
25 to 34	75 or older
35 to 44	Prefer not to say
45 to 54	

2. What is your gender?

Female	Non-binary
Male	Prefer not to say

3. What is your ethnicity?

White or Caucasian	American Indian or Alaska Native
Black or African American	Native Hawaiian
Hispanic or Latino	Multiracial or Biracial
Asian or Asian American	Prefer not to say

4. What is the highest level of school you have completed or the highest degree you have received?

Less than high school degree	Master's degree (e.g., MA, MS)
High school degree or equivalent (e.g., GED)	Professional Degree (e.g., MD, DDS)
Some college but no degree	Doctorate (e.g., PhD, EdD)
Associate degree (e.g., AA, AS)	Prefer not to say
Bachelor's degree (e.g., BA, BS)	

5. Which of the following categories best describes your employment status?

Employed, working full-time	Retired
Employed, working part-time	Student
Unemployed	Prefer not to say

6. What is your annual income?

Less than €5,200	€26,000 to €36,399
€5,200 to €10,399	€36,400 to €51,999
€10,400 to €15,599	€52,000 to €77,999
€15,600 to €20,799	€78,000 or more
€20,800 to €25,999	Prefer not to say

7. Which of the following best describes your current relationship status?

Married	In a domestic partnership or civil union
Widowed	Single, but cohabiting with a significant other
Divorced	Prefer not to say
Separated	

8. Do you have any children?

Yes, all 18 or over	No
Yes, one or more under 18	

9. How many children do you have?

1	More than 4
2-4	zero

10. In what type of community do you live?

City or urban community	Rural community
Suburban community	Prefer not to say

11. How would you describe your political beliefs?

Very liberal

Conservative

Liberal

Very conservative

Neutral

12. What issues are the most important to you in a presidential election?

Education

The economy

Civil rights

Environmental issues

Health care

preservation of constitutional rights & freedoms

Foreign policy

Disability Rights

13. What political party do you identify with the most?

Democrat

Independent

Republican

Non

14. Did you vote in the last presidential election?

Yes

No

15. Please state, whom did you vote for in the last election?

Biden

Did not vote

Trump

16. Why?

better than others

He stands up for the hard-working class.

help blur the line between the wealthy and underprivileged

Healthcare, education, economic policies

He supported the oil and gas industry

He supports education, climate change, and He has been in politics for a long time.

foreign policy

Freedom did not vote

17. How important was the climate change issue when you decided how to vote in the last election?

The most important issue Not important at all

One of the determinative issues

18. How important should climate change be to the government?

Extremely important Not so important

Very important Not at all important

Somewhat important

19. To what extent do you agree with the following sentence? (20-29)

Voters are responsible for the elected party's attitude regarding climate change.

Strongly disagree Somewhat agree

Somewhat disagree Strongly agree

Neutral

20. I would rather vote for a president who prioritize environmental matters over economical expansion

Mark only one oval. Neutral

Strongly disagree Somewhat agree

Somewhat disagree Strongly agree

21. I would vote for a party that has plans to reduce taxes for customers of energy-efficient products.

Mark only one oval. Neutral

Strongly disagree Somewhat agree

Somewhat disagree Strongly agree

22. I would vote for a party that is going to allocate more public lands for renewable energy production (e.g., solar, geothermal, and wind energy).

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

23. I would vote for a government with plans to eliminate any use of fossil fuels and replace them with clean energy.

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

24. Fossil fuel-consuming companies should be required to pay a carbon tax.

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

25. I would not vote for a party without strict energy efficiency standards for appliances, transportation, and new constructions.

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

26. I would vote for a party with proposed policies to reduce the costs of Eco-friendly appliances.

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

27. I would vote for a party that is going to compensate for the imposed air and water pollution on the community by funding the harmed areas.

Strongly disagree	Somewhat agree
Somewhat disagree	Strongly agree
Neutral	

28. I would vote for a party planning to mandate basic environmental education in schools.

Strongly disagree	Somewhat agree
Somewhat disagree	Strongly agree
Neutral	

29. What do you think about the amount of government subsidies allocated to the fossil fuel industries?

Should be increased	Should be decreased
Should remain the same	

30. What do you think about the amount of government subsidies allocated to the renewable energy industries?

Should be increased	Should be decreased
Should remain the same	

31. To what extent do you support allocating the national budget to employ workers to maintain the natural resources?

Strongly support	Somewhat oppose
Somewhat support	Strongly oppose

32. From your point of view, how would the transition from fossil fuels to renewable energy impact the national economy?

Improve economic growth	Reduce economic growth
Have no impact on economic growth	

33. From your point of view, which of the following issues should be of government's priorities to invest in? (Check all that apply)

Water supply systems

National parks and protected areas

Transportation infrastructure

Fossil fuel industries

Electricity production

Environmentally friendly vehicles and appliances

Dikes, Dams, and levees

34. What do you think regarding the government's decision to reduce greenhouse gas emissions?

It should be done only if all the industrialized countries do so

It should be done only if all the industrialized and developing countries do so

It should be done regardless of what other countries do

It should not be done

35. Which of the following is most responsible for climate change?

Citizens

The media

Government

Climate change is unavoidable, and no one is responsible for it

Industries

36. Regarding the climate change crisis, what area should be improved by the government? (Check all that apply.)

Nature (Protect the plant community, conserve the natural resources, support green entities, etc.)

Transportation (Improve community recycling, design residential areas efficiently, etc.)

Nutrition (Food waste reduction, promoting green diets, enhancing farming techniques, etc.)

Economy (Adopt green policy in production, support clean businesses, etc.)

Energy (Promoting renewable resources, energy waste reduction, etc.)

Nothing

37. Do you agree or disagree with the following statement?

I am willing to invest my talent, money, or time to solve environmental problems.

Strongly disagree

Somewhat agree

Somewhat disagree

Strongly agree

Neutral

38. How often do you do energy-saving and resource-conservation actions?

Always

Rarely

Usually

Never

Sometimes

39. How worried are you about climate change?

Extremely worried

Not so worried

Very worried

Not at all worried

Somewhat worried

40. Do you think climate change is happening?

Yes

Maybe

No

41. What should be done about climate change worldwide?

Immediately do any needed actions

The undertaking actions are already enough

Act gradually while learning about how to deal with the situation

Do nothing

42. Have you personally experienced the effects of climate change?

Yes

No

43. Please explain your experience(s) with climate change.

44. How much more or less concerned are you about climate change now compared to how you were before the pandemic?

Significantly more worried now

No change; I was not particularly worried

Slightly more worried now

Slightly less worried now

No change; I was already worried

now Significantly less worried now

45. Which of the following statements on initiatives to help economic recovery after the COVID-19 outbreak do you agree with the most?

The government should prioritize the economy recover, even if it is harming the environment.

Governments should assist the economy recover in a greener manner, even if it means sacrificing economic development and employment.

46. After the COVID-19 outbreak, I am more inclined than before the pandemic to....

Work home-office more frequently.

Select vacations that do not need flying.

Use public transportation more often instead of my automobile.

Monitor household energy consumption.

None of the options above.