Southern California Adult Resident Perspectives on Air Quality and Environmental Equity

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Abstract

This study examines how adult residents in Southern California perceive and are affected by air quality in their region, as well as their recommendations and priorities for government action to address these disparities. Overall, 110 respondents, the majority from Ventura and Los Angeles counties, were surveyed on various policy, environmental, and health-related topics to analyze how their degree of sensitivity to air pollution influenced their viewpoints. The survey was conducted anonymously and distributed with the assistance of local environmental organizations to reach the broadest demographic possible in Southern California. Respondents were grouped by perceived air pollution impact using an index created from answers to three focused questions to establish a specific mechanism of comparison and clarity in analysis. Chi-squared analysis results indicate that the impact of poor air quality informed certain views on pollution and attitudes toward government action, and applies specifically to Hispanic residents in Southern California. Those more strongly influenced by air pollution generally recognized the varying statewide levels of environmental quality and had low trust in California's government to protect their health. Other results show that most participants respond affirmatively to proposed policy plans to improve air quality in the state and acknowledge that establishments in power are not appropriately acting to reduce their contribution to poor air quality.

Introduction

According to Weather Channel writer Adeyemi's report on the United Health Federation's America's Health Rankings data, California has the highest reported values for statewide air pollution out of all 50 states, on a measure of six major pollutants: carbon monoxide, lead, nitrogen dioxide, particulate matter, ground-level ozone, and sulfur dioxide (Adeyemi, 2026). Air pollution in Southern California, commonly due to wildfires, agriculture, household processes, and traffic and industry emissions, results in the release of particulate matter such as $PM_{2.5}$ and chemical reactions that form ozone in the atmosphere, which can disrupt the health and lifestyles of residents. This influence is especially damaging for vulnerable populations such as children and the elderly, causing risk for outdoor activities that include respiratory and cardiovascular illnesses.

Despite these statistics, California has historically introduced specific environmental policies to address poor air quality, including trailblazing legislative efforts such as the high-profile cap-and-trade air pollution control system adopted in 2013. It places a cap on pollution, set to be periodically lowered, and benefits businesses that pollute less monetarily, as those who pollute more must purchase offsets at auction to make up for the damage. In short, the funds generated at auction are distributed into various projects throughout the state, with a focus on social, environmental, and economic advancements. This program incentivizes industries and polluting facilities through economic strategizing, combining free-market economics with environmental initiatives to preserve both in California. It was recently voted to continue in September 2025, according to CalMatters journalists Lazo and Kuang, with minor changes to improve certain aspects of the program, prompting an initial investigation into air pollution legislation for this study (Lazo & Kuang, 2025). The program's commitment to generating support and funding for ambitious climate goals has led to significant statewide decreases in greenhouse gas emissions.

However, UCLA researchers Pastor and colleagues note that a significant limitation to implementing such objectives is the lack of specific programming for environmental justice in favor of broader sustainability goals (Pastor et. al, 2024). In the words of York University professor Dayna Scott, environmental justice surrounds “the ‘fair treatment’ and the ‘significant involvement’ of poor, racialized and indigenous communities in environmental policy and natural resource development decisions that have typically resulted in those communities bearing more than their 'fair share' of environmental harms” (Scott, 2014). Many disadvantaged and minority communities in California face increased risk of health consequences and livelihood disruptions due to poor environmental quality in their communities, including proximity to heavy traffic or manufacturing facilities and limited access to medical care to address conditions resulting from exposure. There is little monitoring of facilities individually, so it is difficult to promote equality in these neighborhoods under cap-and-trade unless the program targets each industry separately. This causes critics to question the ability of such programs to improve air quality for all residents equally, in reference to economic and policy experts Butraw and Roy’s 2023 report. This can result in regions with concentrated air pollution influences, with residents who have little to no voice in environmental legislation, despite bearing a significant burden of pollution policy outcomes.

Organizations dedicated to environmental justice have attempted to gain leverage in policy-making and create better living standards for affected regions, although other parties, concerned with maintaining economic growth, often make these efforts more difficult to execute (Pastor et al., 2024). Researchers Holliman and Collins from the Public Administration Department, California State University, San Bernardino, also report that placing increased costs on gas and power industries is complex and could result in higher gas prices for residents as businesses attempt to offset their increased costs by passing them on to consumers, who often oppose the implementation of policies that produce

such economic drawbacks (Holliman & Collins, 2023). Converting to electric vehicles is unfeasible for many residents, due to their high costs and limited availability of charging ports or means to install a personal fuel station. However, allowing industries to continue polluting at high levels increases the risk for surrounding communities. Further attempts to reach out to impacted neighborhoods are crucial for identifying courses of action to ensure that more people are represented.

Literature Review

Existing literature centers on air pollution health impacts, environmental burden for low-income residents, and proposed policy adjustments for Southern California legislation.

To begin, University of Southern California researchers Chen and colleagues claim that air pollution presents high health risks for residents with high exposure, especially children and elderly populations. Currently, regulatory standards do not prevent widespread asthma, impaired lung function and growth, and airway inflammation (Chen et al., 2018). Data from University of Texas at Austin researcher Rahman and colleagues reinforces that at-risk populations may be in danger of increased health issues and mortality because California residents are likely to be exposed to high heat combined with high air pollution, considering climate patterns in the state. The combined impact on mortality exceeds the effect of either alone, by approximately three times that of an individual effect. California's specific environmental context is important to consider to maintain that overlapping health risks exist and worsen effects from other environmental realities. Climate change is intensifying, creating more severe weather patterns and heat events in the state and amplifying these concerns. While individuals can gain a certain level of acclimation to high heat, there is insufficient evidence to demonstrate that adjustment to local particulate matter exposure is possible (Rahman et al., 2022). This research connected California's air pollution and climate conditions to subsequent potential impacts on public welfare, providing an incentive for combative legislative efforts.

Thus, it is notable that many stationary sources of pollution, such as manufacturing facilities, have regulatory standards under cap-and-trade that accelerate decreasing greenhouse gas emissions throughout the state (Butraw & Roy, 2023). However, there are no federal standards to regulate traffic-related air pollution, which is the largest source of pollution in California, but the most difficult to regulate because cars and trucks are independently owned. Yet many vehicles together generate significant air pollution hazards in high-density areas, especially for residents who live and work in proximity to highways (Chen et al., 2018).

Notably, David Reichmuth of the Union of Concerned Scientists adds that minority communities are more likely to be exposed to transportation-related emissions. Gasoline and diesel-powered vehicles present the greatest risk for emissions, which can cause premature death if exposure is consistent and high. In terms of demographics, African American residents had 43% higher $PM_{2.5}$ exposure, Latino residents had 39% higher exposure, and Asian residents had 21% higher exposure on average compared to white Californians. In terms of geographic differences, data on state levels show that Los Angeles County residents have 60% higher exposure to air pollution than the state average and 250% more exposure than San Francisco Bay Area residents. Urban areas are densely populated and have high vehicular emissions, and proximity to trains and airplane facilities increases this value. Living near highways is associated with increased exposure to vehicle emissions, although the severity varies in California (Reichmuth, 2019). Researchers Holliman and Collins further conclude that the use of electric vehicles is a potentially valuable strategy for reducing emissions caused by gas-powered vehicles. State-funded electric vehicle projects would be valuable to directly assist in and encourage their more widespread use, particularly amongst those in disadvantaged communities, who are less likely to purchase them due to high costs (Holliman & Collins, 2023). While such research proposes a potential

solution to the adverse environmental and health impacts of vehicle exhaust, flaws in current policy systems for air pollution improvement directly result in certain communities bearing a large environmental burden.

Additionally, research on cap-and-trade maintains that carbon trading allows trading of other air toxics and can create hazardous hotspots in low-income communities that lead to disparities in exposure. Although there is an argument that reductions can be made through a market-based system, offering economic benefits along with environmental ones, narrowing in on issues with the system shows that exclusively viewing carbon reduction through a broad, global mindset masks the consequences for individual communities. As NYU researcher Lejano and colleagues report in their 2020 paper, these issues are unlikely to be solved through simple market adjustments, and it would be ideal to involve the people impacted by industry carbon behaviors in the market where they can be represented.

Thus, studies further emphasize that California's aims to reduce GHG emissions and incentivize environmental policy must better address the needs of disadvantaged communities disproportionately impacted by air pollution and natural disasters in the state. It is important to incorporate more environmental justice aims in state-level and national policy to support groups who are at risk of poor health due to their environment. This would include adding decarbonization goals to existing efforts for low-income communities to improve the quality of life and narrow the decades-old gap in resource access between regions of wealthier individuals and regions of disadvantaged individuals. Such participation is often overlooked, but it is, in fact, crucial for addressing climate issues to gain the support and authority of affected communities and collectively build a more sustainable future (Pastor et al., 2024). Cap-and-trade funding has been debated regarding its effectiveness in providing support to those who need it most, but revisions to the system can advance the goals of social and environmental equity advocates, such as redistributing funding generated at auction to more directly benefit

low-income communities instead of constantly delayed projects like the high-speed rail that currently receives a portion of the profits (Holliman & Collins, 2023).

Overall, previous literature establishes that certain climate conditions are addressed under the current regulatory framework in California, but do not comprehensively address environmental justice aims arising from disproportionate exposure. This establishes the need for studies focusing on resident-specific input to formulate strategies for improved and more inclusive environmental policies.

Question and Hypothesis

This study, therefore, determined that a gap exists between objective research that presents air pollution issues and specific efforts to reach out to communities and address their needs. There was insufficient evidence to support the idea that significant active outreach strategies are being implemented to address the individual needs of communities. These impacted regions exist locally, and research emphasizes that they often lack representation in government in favor of big business and broad sustainability goals, meaning that there is significant incentive to amplify their voices. The goal of this study was to explore the opinions of residents directly to gain a more comprehensive understanding of their priorities and thoughts on California's current climate approach. Ultimately, the guiding question of this research was: "What specific patterns exist between Southern California residents' impact from air pollution and their views on environmental matters?" This study hypothesized that higher self-reported air pollution impact for Southern California residents is associated with certain attitudes and agreement on environmental concerns in California, linking to resident awareness of disparities, overall trust in the system, and action priorities. Lower-impact residents will likely exhibit higher trust in existing systems and place less urgency on environmental policy alterations in California. Due to the wide range of subject matter explored in this study, the overall question and hypothesis were broadly used to guide data analysis on a variety of responses included in the survey.

Methods

To collect specific community input, targeting Ventura County and Los Angeles County for geographical convenience, an anonymous survey was developed on Google Forms to question individuals on their level of impact and sensitivity to air pollution in their region and subsequent perspectives on environmental policy in California. The survey was constructed on inquiries that arose from background research and expert consultation, with several research mentors and environmental organizations giving feedback on the survey before it was sent out. In terms of participant requirements, this survey targets adult residents who are eighteen or older and live in California, to maintain a specific and focused approach to identifying potential respondents with the ability to participate in legislation and maintain permanent residence.

It was structured in several sections, with different aims for each section, although each question was optional to complete beyond basic screening questions that determined eligibility to be included in the research. The first section was meant to form a basic participant profile, ensuring that they are over the age of eighteen and have permanent, current residence in California. After ensuring eligibility, demographic questions, including ZIP code, birth year, and race and ethnicity, were asked, with the assurance that such responses are kept fully private. To ensure that all data remains anonymous, the survey did not request email addresses, names, workplaces, or any other identifying demographic information besides zip code and race/ethnicity, and the data was kept confidential and password-protected. Although requesting income brackets was a major consideration to allow another area of comparison, the concept was discarded over concerns of lower participation due to perceived invasiveness.

The following three questions were created to formulate an index measuring the degree to which air pollution affects participants based on their responses:

1. How would you rate your neighborhood or community's air quality? *(Very Poor, Poor, Fair, Good, Very Good)*

2. Have you or another household member had to adjust daily activities such as exercise or work based on air quality? *(Never, Rarely, Sometimes, Often, Always)*

3. Have you ever experienced respiratory symptoms that you believe are related to air quality (e.g., coughing, headaches, wheeze, irritation)? *(Never, Rarely, Sometimes, Often, Always)*

These values were then converted to numerical values, which is shown in Figures 1 and 2 below.

Conversion Values for Index Question 1

Selected Answer	*Numerical Conversion*
Very Poor	5
Poor	4
Fair	3
Good	2
Very Good	1

Figure 1: Created conversion chart for Question 1

Conversion Values for Index Questions 2 and 3

Selected Answer	*Numerical Conversion*
Always	5
Often	4
Sometimes	3
Rarely	2
Never	1

Figure 2: Created conversion chart for Questions 2-3

Higher values represented higher impact in this system, leading to a clear and consistent format for the three values to be recorded and summed for each participant to determine their index score. The impact was based on the scoring guide in Figure 3.

Index Generation from Summed Values

Sum of Question 1-3 Values	*Air Pollution Impact Score*
3-6	Low
7-10	Moderate
11-15	High

Figure 3: Created index with Question 1-3 sums

A sample from the study in demonstration of "High" impact individuals is as follows: the participant stated that their neighborhood has "Very Poor" air quality, receiving a numerical value of 5, "Often" have to adjust daily activities based on poor air quality, receiving a numerical value of 4, and "Sometimes" experience symptoms related to air pollution, receiving a numerical value of 3. Their total score was 12, placing them in the high impact category due to awareness of and interaction with air pollution in their region.

Although ideally, ZIP code data could be used to map objective air pollution impact in each specialized area using online reporting databases, publicly available monitoring does not possess sophisticated resources for neighborhood-specific analysis in Southern California. IQAir, a commonly cited source for pollution data in California, gave certain statistical information for potential benefit, but was limited to countywide measures of air pollution and did not provide enough detail to address the smaller geographical scope of the study. It is also crucial to consider the lifestyle impacts of air pollution in a perception-based inquiry, apart from baseline data considerations.

Next, a series of questions with various formats was included before specific Likert scale questions in the subsequent section to discover attitudes on topics meant to quantify knowledge and attitude without a uniform design. Questions include ranking from 1 to 5 how important it is to

respondents that their air quality is healthy, with 1 being unimportant, and 5 being very important. Respondents also ranked from 1 to 5 how much trust they had in businesses to voluntarily contribute to improving air quality under current policies. It also surveyed knowledge of air quality tools, e.g., monitoring, and measured use of such resources. Then, participants checked boxes with environmental issues that concerned them, with unlimited responses, that include increased temperatures due to global warming, wildfire smoke and property damage, water toxicity and scarcity, traffic pollution, and industrial pollution. Finally, participants determined the most important effort to prioritize in their regions from four proposed policy plans: more legislation to regulate polluters and protect affected areas, more funding and technical support for projects in underserved areas, more medical care facilities for air-pollution-related health issues, or subsidies for residents to purchase electric vehicles. These questions were meant to dive deeper into experiences with air quality and environmental perspectives.

Next, an entire section was devoted to Likert-scale questions, which occupied the majority of the survey and followed the “Strongly Agree” to “Strongly Disagree” structure. These questions and their subsequent responses are described in depth in the Results portion of this study and surround legislative trust, action priorities, protection from environmental risks, and government involvement. To determine statistical significance during data analysis, air pollution impact index scores were considered the independent variable and tested against individual dependent variables based on participant responses using chi-square analysis to assign p-values.

To complete chi-square tests for the Likert Scale questions, count-if tables were created to compare two variables, converting each Likert scale question into values. For instance, “Strongly Disagree” was assigned a score of 1, and “Strongly Agree” was assigned a score of 5. Then, numerical values were grouped into three categories for simplification, allowing 1-2 to represent “Disagree” in general, 3 to “Neutral”, and 4-5 to “Agree.” Frequency, or count-if, tables organized responses by

agreement level across index score categories. These values were used to compare agreement, neutrality, or disagreement on provided statements with the impact index scores of each participant. These practices established a specific framework for measuring perceived air pollution impact that addressed differences in exposure and subsequent views. A count-if table was also created to compare demographic data, separating responses on participants' race/ethnicity by index score to determine whether a correlation exists. This allowed another comparison that could provide insight into Southern California patterns of exposure. There was also an opportunity for qualitative data collection through the optional long-answer question at the end of the survey for respondents to provide additional information on previous answers, although these statements were used for deeper understanding, not actual data analysis, due to their variety.

In order to collect survey responses, many Southern California environmental community organizations were contacted for assistance with distributing the survey and connecting with affected communities. College and community clubs, as well as professors at local universities, were also identified to request participation. The online survey, flyer, and brief research summary were included, and Zoom calls with several of these groups were initiated to explain more detailed procedures. Some recommendations for contacted organizations were provided by mentors, but many were discovered through online databases, where their connections and extensive community network were used to build a data set to fit the target demographic. Connections with certain organizations allowed the survey to be posted on social media, organization websites, shared at community meetings, and distributed to members. Major contributors include California First: Replacing Oil and Gas (CFROG) in Ventura, The Climate Corps Initiative in Burbank, and Physicians for Social Responsibility Los Angeles. In-person visits to locations to spread the survey and gather responses were also important in the collection process. Attendance at the Ventura County Justice for All's Women's March on January 17th facilitated

interaction with respondents who suited the target population of the survey. The research was also shared at the Ventura County Air Pollution Control District Board Meeting on January 13th, where flyers were given to board and audience members. Directly connecting with respondents facilitated improved sample sizing and insurance of completion.

Results and Discussion

Ultimately, 110 respondents participated in the survey, with 87 from Ventura County, 16 from Los Angeles County, and seven from either Sacramento County, Santa Barbara County, or Orange County. All were included in data analysis, with an emphasis on analyzing responses from Ventura and Los Angeles counties. For basic regional analysis, both Los Angeles and Ventura County experience higher than average levels of ozone daily, according to American Lung Association Data, and the 16 residents from Los Angeles County experienced higher annual particulate pollution than health organizations recommended, demonstrating that both the focus counties have certain air pollution levels that the Air Quality Index considers unsafe to breathe (American Lung Association, n.d.).

Demographic data revealed that most respondents were White or Hispanic/Latino, and the largest age groups represented were individuals ages 18-20 and individuals ages 66-76. In terms of the impact index, 54 participants fell into the “Low” category, 46 into the “Moderate” category, and 10 into the “High” category based on calculated values. The average score for the data set was around 7, classified as “Moderate” exposure. This means that the surveyed regions varied in impact, but pockets of poor air exist within the communities, pointing to disparities among respondents. For statistical purposes, “Low” and “High” residents were focused on as they represent the vastest range of differences in responses, while “Moderate” respondents tended to be more mixed in terms of answers commonly stated by “Low” and “High” participants.

For reference, the standard p-value in this study was 0.05. Based on the first chi-squared test comparing demographic responses to impact index scores, there was a statistically significant correlation between race/ethnicity and self-reported air pollution impact ($p=0.023$). According to respondent patterns, Non-Hispanic residents were more likely to report lower impact than expected, and Hispanic residents were more likely to report higher impact than expected. This is significant because previous research supports that minority residents are more likely to have higher exposure to air pollution than their White counterparts, as proven by this section of data.

Next, there was also a correlation between perceived air quality fairness depending on impact from pollution: residents with "High" impact were more likely to disagree or be neutral that they receive the same environmental quality as all others in California, while "Low" impact residents were more likely to agree that they receive the same environmental quality as all others in the state ($p=0.026$). This suggests that impact can inform belief around the system's fairness and ability to serve communities. Similarly, when asked whether they trust California's government to protect their health from environmental risks, "High" impact residents were much more likely to disagree than expected, while "Low" impact residents were much more likely to agree than expected, which was classified as statistically significant ($p=0.006$). According to this study, Southern California residents with high air pollution impact limit trust towards the legislature if it is not proven to protect their health and interests.

There is not a statistically significant correlation between impact index scores and agreement on whether California's government values individual communities' voices in environmental matters ($p=0.311$). There was also no statistically significant correlation between the impact index and trust in businesses to voluntarily contribute to bettering air quality, with 73.6% ($n=81$) of all respondents agreeing that they have low trust in industries ($p=0.189$). Other questions had more concentrated answers and were not deemed to correlate with any particular impact score, defying the use for a

statistical test. However, these results are included due to almost universal disagreement or agreement that provides other insights into respondents' views.

For instance, 85.4% disagreed when asked if they trusted their federal government to protect their health from environmental risks, contrary to statistical data that indicates that, in general, individuals express mixed trust in California's government, with responses changing in relation to impact index scores (n=94). This suggests that a limited number of respondents identify with the environmental aims of the current administration, operating under the assumption that their interest in reducing air pollution is not represented.

Additionally, data revealed that 88.1% of respondents support increased taxes on polluters if the funds go toward air quality improvement projects (n=96) and 87.3% of respondents think that improving air quality should be prioritized even if it requires increased government spending, which demonstrates how many consider environmental health valuable despite potential economic downfalls. In California, the inequity of carbon trading is often dismissed by business and economic scholars who strongly support a broader market-based approach (Lejano et al., 2020). According to survey data, resident voices overwhelmingly support further action in adapting policies to benefit individuals over economics, meaning that underrepresentation of actual views in California may be a concern in environmental policy. In terms of personal priorties 86.2% of respondents would like to be involved in environmental policy when it affects their health (n=94), and 90% of respondents put 4-5 when asked to rate from 1-5 (with 1 being not important and 5 being very important) how important it is to them that their air quality is healthy. Overall, results highlight the population's strong emphasis on the government maintaining quality air and ensuring that their health is protected, which is valuable insight into potential differences in government viewpoints and residents' ideals.

When asked which of the listed efforts is most important to prioritize in their region: 55.6% selected “More legislation to regulate polluters and protect affected areas” (n=60), 26.9% selected “Funding/technical support for projects in underserved areas” (n=29), 11.1% selected “Subsidies for residents to purchase electric vehicles” (n=12), and 6.5% selected “Medical care facilities for air pollution-related health issues” (n=7). This suggests that legislative efforts are of high priority for reducing air quality directly, compared to more indirect means of addressing current issues with pollution exposure.

Additionally, a gap is present between belief in maintaining air quality and knowledge of assistive tools, with 71.80% (n=79) of residents claiming that they are aware of community resources such as air quality monitoring or reporting, and only 18.1% (n=20) of residents reporting that they always or often make use of them, while 50.9% (n=56) never or rarely use them. This includes individuals with “High” impact scores, who experience greater risks than “Moderate” and “Low” respondents. Community dedication to providing neighborhoods with data on their exposure and subsequent health risks is important for those who could experience negative effects as a result of increased sensitivity, and it is a highly recommended means to ensure healthy levels of pollution are present in an area before participating in outdoor activities.

In terms of other means of protecting the environment from harmful emissions, 78% of respondents agree that they would drive an electric vehicle if given support to purchase one (n=85), and 73.6% claim that they would know where or how to charge it (n=81). This was included because it is important to ensure that parties interested in using an electric vehicle are aware of the significance of ensuring they have access to fuel opportunities. While representative of only a specific geographic area, increased emphasis on funding electric vehicle initiatives in California in order to promote decreases in traffic pollution could be widely supported for residents. Finally, to gain a sense of residents’ views on

the wide range of commonly cited environmental dangers that impact residents, respondents were asked what they find to be the most concerning environmental issues. This data is summarized in Figure 4, which shows that wildfire smoke and traffic pollution ranked most concerning among respondents.

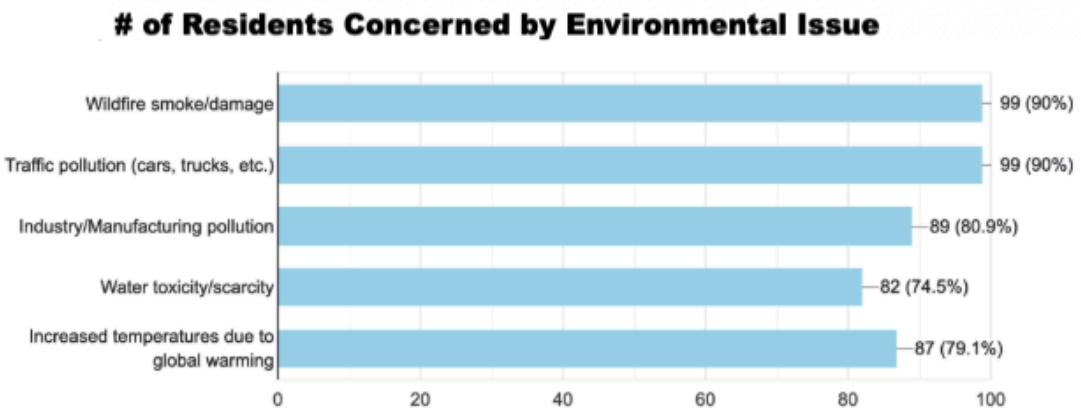

Figure 4: Resident selection of concerning environmental issues

In terms of qualitative written statements recorded at the conclusion of the survey, many individuals state the importance of similar research and several remark feeling as if their governments do not represent their needs. This qualitative data supports previous answers on trust and strong emphasis on environmental protection. Overall, results prove that certain perspectives are determined by impact, while others are relatively universal across index levels, partially supporting the overall hypothesis that impact informs belief, awareness, and trust of environmental policy.

Limitations and Future Research

A major limitation of this study was the limited resources to survey significant numbers of respondents, and the chi-square data are likely less reliable as a result of the smaller sample size. Fewer participants can lead to limited widespread applicability and increase the likelihood of less precise calculations for statistical significance. Furthermore, the majority of respondents were either White or Hispanic, which aligns with regional demographic trends, but could limit analysis on a broader scale. Future research should focus on broadening survey reach and identifying regions with increased numbers of “High” impact residents in Southern California and potentially other regions of the state, such as the highly polluted San Bernardino County. Additionally, adding more questions about proximity to traffic or industrial sites could allow identification of common sources of increased pollution for Southern California residents beyond the general analysis of local air quality. Background research suggests that previous studies have specifically requested information about the cause of air pollution if known. Also, a focus on anonymity and the limitations created by a lack of organizational credibility due to the status of this project as student research made it inappropriate to ask potentially important questions, such as medical history of respiratory illnesses, like asthma, and political standing. These inquiries may have guided particular analysis on the impact and patterns of residence. It is worth noting that although political leaning was not specifically requested, demographic data from the California Secretary of State 2025 report on voter registration, visualized in Figure 5, suggests that the vast majority of residents in the surveyed Southern California regions consistently align with Democratic views.

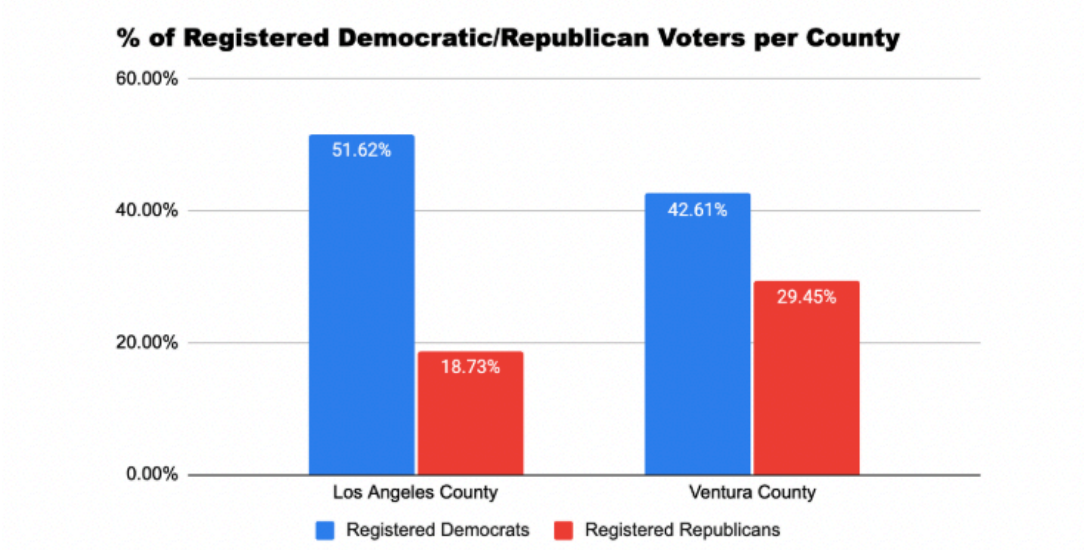

Figure 5: Regional political breakdown for surveyed counties

Decreased diversity in politics could result in potential bias in resident priorities, as environmental researchers Smith and colleagues report, because their study of political measures demonstrates that "Democrats are currently more likely to have heightened environmental and climate change beliefs and attitudes…which is mirrored by decreased likelihood to have environmental and climate change beliefs and attitudes for Republicans" (Smith et al., 2024). Moreover, renewal of the cap-and-trade system in the fall of 2025 was initiated by the current Democratic governor of California, Gavin Newsom, after negotiations on its restructuring to ensure that the oil industry is preserved (Lazo & Kuang, 2025). Further research could also aim to target regions where voters more frequently support more Republican-based policies with increased economic focus over environmental goals.

Conclusions

Overall, analysis reveals that air pollution impact resulted in certain views on environmental policy and advocacy action among Southern California residents to partially support the hypothesis of this study. When observing demographic relationships, Hispanic residents were more likely to report high impact than non- Hispanic residents, which could inform future policy action and create initiatives to target impacted members if data continues to support this racial division. Continuously, high impact from air pollution is associated with low trust in California's government on air quality matters, while low impact resulted in higher trust to protect health from environmental risks. Similarly, high impact from air pollution lowered reporting of perceived environmental fairness, with such respondents suggesting that the system of exposure in California is unjust and benefits some individuals more than others, while low impact reported the opposite. This overall somewhat supports the hypothesis that Southern California residents with higher impact from pollution have certain attitudes that differ from low-impact residents, with lower-impact residents having greater trust in California's government and limited awareness of disparities. However, lower-impact residents have limited trust in the federal government's ability to address environmental health concerns and report similar urgency towards policy plans, likely due to the political makeup of the counties surveyed. Most participating Southern California residents are generally concerned about air quality and health impacts and would support government action. Ultimately, residents should continue to be involved in policy decisions, especially those with high impact from poor air quality.

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