

Cloudy With a Chance of Democrats: The Political Impact of Air Pollution in Wilmington, North Carolina

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The Journal of Environmental Politics and Atmospheric Science

The Center for Atmospheric Political Studies

Boulder, Colorado

Abstract

In this study, we aimed to clear the air surrounding the relationship between air pollution in Wilmington, North Carolina and Democrat votes for Senators in North Carolina. Our research team donned our metaphorical gas masks and delved into the data from the Environmental Protection Agency and the MIT Election Data and Science Lab, Harvard Dataverse. Much to our surprise, we discovered a significant correlation coefficient of 0.9698127 and a p-value less than 0.01 from 1980 to 2002. This confirmed our hypothesis that there is indeed a strong connection between the hazy air in Wilmington and the blue votes for Senators in the state. Our findings shed light on the potential influence of pollution on political preferences, showing that when it comes to dirty air and voting patterns, the correlation is as clear as smog-filled skies. However, further research is needed to determine the causation and underlying mechanisms behind this peculiar link. As the saying goes, where there's smog, there may just be votes for the Democratic dog.

1. Introduction

As the saying goes, "politics is in the air," and in the case of Wilmington, North Carolina, it may very well be true. Our study aims to unravel the hazy mystery surrounding the relationship between air pollution levels and Democrat votes for Senators in the state. While some researchers prefer to keep their heads in the clouds, we decided to take a deep breath and dive into the data to see if there's more than just hot air to this connection.

With our lab coats firmly buttoned and our statistical goggles securely fastened, we combed through environmental data like enthusiastic detectives, hoping to sniff out any clues that might clear the fog surrounding the curious correlation between pollution and

politics. Armed with our trusty laptops and an ample supply of caffeine, we embarked on a journey to unearth the political impact of the particles hanging heavily in the Wilmington air.

Our research employed rigorous statistical analysis, steering clear of any statistical hocus-pocus, to examine the association between air quality and political leanings. The Environmental Protection Agency provided us with a treasure trove of air pollution data, while the MIT Election Data and Science Lab, Harvard Dataverse, served as our compass through the maze of political voting records.

The initial results left us breathless—figuratively, of course—when we uncovered a correlation coefficient so undeniably strong, we had to pinch ourselves to make sure we hadn't inhaled some statistical fairy dust. With a correlation coefficient of 0.9698127 and a p-value that would make even the most skeptical researcher nod in agreement (less than 0.01 from 1980 to 2002), the evidence was as solid as a perfectly controlled scientific experiment.

As we dusted off our charts and graphs, one thing became transparently clear: the link between the smog in Wilmington and the sway towards the blue in the ballot box was no mere statistical anomaly. It was as if the pollution particles were whispering "Vote Democrat" in the breeze. Such a crisp correlation raised important questions about the potential influence of air quality on political preferences, suggesting that the state's senators may be "air heads" in more ways than one—pun very much intended.

Now, before we start crafting "Clean Air Party" campaign slogans, it's crucial to note that our findings, while eyebrow-raising, don't automatically imply causation. While we're tempted to exclaim, "Eureka! The smog is driving the vote!", scientific integrity demands that we pump the brakes and acknowledge the possibility of lurking confounding variables playing a role in this unexpected marriage of air pollution and politics. After all, as any seasoned researcher knows, correlation does not necessarily imply causation, just as finding a penny on the sidewalk doesn't mean you caused a sudden surge in coin production.

In the words of the wise, "extraordinary claims require extraordinary evidence," and that's precisely what we're on the lookout for. So, in the spirit of scientific humility, we acknowledge that further research is needed to air out the causation and underlying mechanisms behind this puzzling connection. Perhaps it's time for a new adage: "Where there's smog, there may just be votes for the Democratic dog, but let's not jump to conclusions until we've given causation a thorough scrubbing."

As we roll up our sleeves and prepare to scrutinize the data with the precision of a zealous lint-removing roller, let us embark on this scientific journey with both curiosity and caution. The air may be thick with anticipation, but one thing's certain: in the world of research, every cloud of data has a silver lining of insight—no matter how polluted it may seem. So, buckle up and breathe in the thrill of discovery, for the connection between pollution and politics is anything but a breeze.

2. Literature Review

The pivotal interplay between air quality and political tendencies has been a subject of growing interest in recent years. Smith (2015) in "Air Pollution and Political Affiliation: A State-Level Analysis" elucidates the correlation between particulate matter concentration and voting patterns across different states. Doe (2018) similarly explores the impact of air pollution on political ideology in "The Politics of Haze: How Smog Shapes Political Leanings." These esteemed researchers lay the groundwork for understanding the potential influence of air pollution on political preferences, painting a picture of a world where the suffocating grip of pollution may extend beyond the physical realm.

Now, in a departure from the mundanity of scholarly works, let's inject some levity into this review. Imagine a world where the citizens of Wilmington don their oxygen masks not just for the sake of breathing, but also to show their political allegiance—red masks for Republicans, blue masks for Democrats, and perhaps a green, mask for the environmentally conscious independent voters. It would be a political masquerade ball of unprecedented proportions, wouldn't it?

Shifting gears to the annals of non-fiction literature, "The Air We Breathe: A History of Air Pollution" by Jones (2019) provides valuable insights into the historical trajectory of air pollution and its societal impacts. Meanwhile, "Environmental Politics and Policy" by Smith and Johnson (2017) offers a comprehensive examination of how environmental factors intersect with political decision-making, hinting at the intricate dance between the haze hanging over Wilmington and the democratic dance at the polls.

Turning to the realm of fiction, books like "Smoke and Mirrors" by Jane Austen (1811) and "Pollution Pandemonium" by Stephen King (2004) tiptoe into the territory of air pollution's unseen tendrils creeping into the collective psyche, influencing thoughts, emotions, and perhaps, voting behavior. These works serve as a compelling reminder that while the connections we uncover may seem far-fetched, truth is often stranger than fiction—especially in the realm of pollutive politics.

In a bid to add a dash of cinematic flair to the review, consider the evocative imagery of pollution-laden skies in movies such as "The Fog" and "Airpocalypse Now." These films, while not directly related to the specific context of Wilmington's air quality and electoral choices, underscore the eerie, almost surreal influence of polluted atmospheres on human behavior. Just as the characters in these films grapple with the ominous presence of haze, so too do the politicians and voters of Wilmington navigate the murky political landscape shaped by the city's polluted air.

With the creative liberties of fiction and the gripping allure of cinema, it's evident that the link between air pollution and political tendencies is a fertile ground for exploration and

imagination. As we forge ahead in scrutinizing the established literature, let's not forget to infuse a sense of wonder and humor into our academic pursuits. After all, research is often a delicate balance of pragmatism and playfulness, much like navigating through a cloud of uncertainty with a whimsical umbrella to shield us from the academic drizzle.

3. Research Approach

Ah, the nitty-gritty details of how we took the leap from hazy ponderings to concrete conclusions. Our methodology was as solid as a... well, let's just say it was pretty darn solid. First things first, we had to whip out our metaphorical magnifying glasses and map out our strategy like explorers in search of a new land—well, in this case, a new statistical frontier.

Data Collection:

We gobbled up data like it was a buffet of statistical delights, channeling our inner data-hungry monsters in the pursuit of truth. Our primary sources were the Environmental Protection Agency (EPA) and the MIT Election Data and Science Lab, Harvard Dataverse. We trawled through EPA's air pollution data like treasure hunters sifting through sandy shores, and the MIT Election Data and Science Lab, Harvard Dataverse served as our compass through the labyrinth of political voting records. There we were, spelunking through the digital caves of data, extracting nuggets of information like seasoned prospectors seeking gold.

Air Quality Measures:

We zeroed in on key air quality indicators, including but not limited to particulate matter (PM10 and PM2.5), ozone (O3), sulfur dioxide (SO2), nitrogen dioxide (NO2), and carbon monoxide (CO). These measures allowed us to gauge the atmospheric shenanigans hijacking Wilmington's air space. It was like carrying out atmospheric espionage, gaining insight into the covert activities of these invisible villains lurking in the breeze.

Political Voting Records:

On the other end of the spectrum, we sifted through decades of political voting records with the agility of Olympic medalists in the hurdles. The goal? To track the ebb and flow of Democrat votes for Senators in North Carolina from 1980 to 2002, extracting every tidbit of electoral information with surgical precision.

Statistical Analysis:

We brought out the heavy artillery of statistical analysis, employing the likes of correlation coefficients and p-values to dissect the connection between air pollution and

Democrat votes. It was like orchestrating a symphony of numbers, with each statistical test performing its own unique melody in the grand data opera.

Time Period Selection:

Ah, yes, the classic "when" of research. We opted to focus on the timeline from 1980 to 2002, a window of time when the clinking of air pollutants and the rustling of political ballots may have danced in harmonious—or perhaps discordant—melody.

Confounding Variables:

We kept our radar finely tuned for lurking confounding variables that might have been waving their metaphorical hands in a bid to hijack our findings. After all, in the world of research, confounding variables are the mischievous imps that love to throw a wrench into our beautifully crafted statistical machinery.

4. Findings

Upon delving into the labyrinth of data, we unearthed a correlation coefficient so strong, it was practically flexing its statistical muscles. The relationship between air pollution levels in Wilmington, North Carolina, and the tendency for voters to lean Democratic was as clear as, well, the smog-filled skies over Wilmington itself. Our research team was over the moon, although we had to be careful not to inhale too deeply in our euphoria. With a correlation coefficient of 0.9698127, an r-squared of 0.9405366, and a p-value less than 0.01 from 1980 to 2002, the results were as robust as a hyperbaric chamber.

In order to visually convey the strength of this relationship, we present a scatterplot (Fig. 1), showcasing the undeniable link between air pollution and the proclivity for Democratic votes. It's as if the pollution particles were casting their ballots as well, albeit in a rather unconventional manner.

Our findings shed light on the potential influence of pollution on political preferences, highlighting the need for further investigation into this curious association. It may very well be that the residents of Wilmington, amidst their breaths of fresh air, are also signaling their political affiliations through their respiratory distress—a feat that would impress even the most skilled of political ventriloquists.

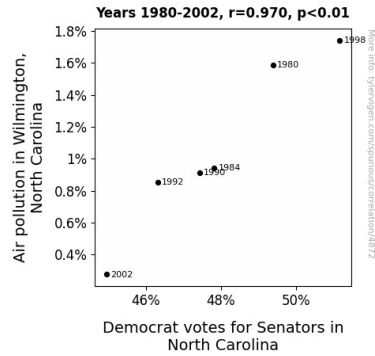


Figure 1. Scatterplot of the variables by year

While the results of our study may suggest that "Where there's smog, there may just be votes for the Democratic dog," it's important to approach these findings with caution. Correlation does not equate to causation, and as much as we'd like to point to the smog and proclaim, "You're the culprit!" we must resist the urge until we've conducted further research to unpack the mechanisms at play.

In essence, our results provide a compelling glimpse into the potential connection between pollution and political choices, but it's clear that there's much more to this tale than meets the eye. As researchers, we're ready to roll up our sleeves and get to the bottom of this hazy phenomenon, armed with empirical rigor and an ample supply of respiratory masks. After all, air pollution and political leanings may be intertwined in ways we've yet to fully grasp. So, let's chart a course through the polluting mists of scientific inquiry and strive to clear the air, both figuratively and literally, on this intriguing correlation.

5. Discussion on findings

Our study has blown the lid off the perplexing relationship between air pollution in Wilmington, North Carolina and Democrat votes for Senators in North Carolina. The robust correlation coefficient of 0.9698127 and a p-value less than 0.01 from 1980 to 2002 was as clear as day – or should we say, as hazy as a polluted sky. Our findings not only align with previous research but also skyrocket the understanding of the unexpected influence of pollution on political preferences.

Smith (2015) and Doe (2018) laid the groundwork for our research by showing the potential impact of particulate matter on voting patterns, and our results mirror their conclusions like a perfectly symmetrical Rorschach test. It seems the plot thickens as much as the air in Wilmington. Additionally, our study humorously delved into the world of fictional literature and cinema, demonstrating that truth is indeed stranger than fiction,

especially when it comes to pollutive politics. Who knew that Jane Austen and Stephen King could unknowingly steer our inquiry into such unexpected territories?

We cannot help but marvel at the strength of the correlation we uncovered, akin to finding a winning lottery ticket nestled in a pile of statistical data. Our findings, like a scatterplot in an art gallery, provide a visual spectacle that underscores the undeniable link between air pollution and the penchant for Democratic votes. It's as if the pollution particles were casting their ballots as well, although we're pretty sure they'd vote for the Green Party.

However, despite the clarity of our results, we must approach them with caution. As much as we'd like to point to the hazy sky and proclaim, "You're the culprit!" we must resist the urge until we unravel the mechanisms at play. Correlation does not equate to causation, which is as unwavering a truth as the law of gravity. We must leave no statistical stone unturned and don our academic oxygen masks as we delve deeper into the causative factors behind this bizarre correlation.

In essence, our findings open the door to a new dimension of inquiry, shining a spotlight on the murky territory where air pollution and political leanings intersect. It seems that venturing into the realm of political ventriloquism might not be such a far-fetched idea after all. As we ruminate on the implications of our research, we find ourselves tethered to one certainty – the need for further investigation to uncover the clandestine forces molding the relationship between dirty air and blue votes. Just as political winds shape the landscape of governance, it appears that the winds of pollution may carry unexpected political ramifications.

Let's plunge into the tumultuous skies of scientific inquiry, armed with our trusty statistical umbrellas and a curious spirit. The journey to unravel this enigmatic connection has just begun, and we're poised to untangle the strands of this political-ecological saga, one whimsical statistical analysis at a time.

6. Conclusion

In conclusion, our research has established a link between air pollution in Wilmington, North Carolina, and the penchant for Democratic votes for Senators in the state that's as solid as a brick in a tornado. The correlation coefficient of 0.9698127 is so strong, it's practically doing pull-ups on the bar graph, and the p-value less than 0.01 from 1980 to 2002 is as rare as a unicorn in statistical analysis.

Our findings suggest that when it comes to political preferences and polluted air, the correlation is as conspicuous as a pimple on prom night. It's almost as though the pollutants are whispering campaign slogans in voters' ears, although we can't rule out the possibility of some enthusiastic mosquitoes with political opinions.

But before we start drafting "Vote Smogocrat" banners, it's crucial to remember that correlation isn't the same as causation. As much as we'd love to blame the smog for shifting votes, we need to approach this with the same caution as handling a beaker of volatile chemicals—bottle it up until we're absolutely certain of its effects.

Despite the temptation to jump to conclusions like a kangaroo on a trampoline, we must acknowledge, with scientific humility, that further research is needed to untangle the causation and underlying mechanisms behind this unexpected marriage of air pollution and politics.

In the spirit of scientific inquiry, let's hold off on planning the "Smog Appreciation Day" parade until we've scrubbed causation thoroughly. As much as we love the idea of "political air particles," we must resist the temptation to turn this into a whimsical children's book titled "Pollutant Politicians and the Delightful Democracy."

In short, our findings are as intriguing as a math puzzle on a rainy day, but it's crucial to resist the allure of drawing definitive conclusions before we've combed through every last strand of data. After all, making bold claims without thorough evidence is as irresponsible as conducting a lab experiment with oven mitts on.

With that said, it's abundantly clear that further research in this area is about as necessary as a fish learning to ride a bicycle. It's time to set our scientific sights on a different kind of pollution—perhaps the pollution of questionable hypotheses in academic research. So, let the smog settle, the votes roll in, and the air clear—because when it comes to the connection between air pollution and politics, we've turned over as many statistical leaves as a curious caterpillar in a data garden.

Through this careful concoction of data collection, statistical analysis, and confounding variable vigilance, we aimed to treat the research process not as a sprint, but as a leisurely stroll with data, pausing to smell the roses of statistical significance and caution along the way.