



Review

## Blowing Smoke: Exploring the Link Between Air Pollution in Columbus and Kerosene Combustion in Syria

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**Our research delves into the curious correlation between the air pollutant levels in Columbus, Ohio, and the utilization of kerosene for household energy needs in Syria. Leveraging data from the Environmental Protection Agency and the Energy Information Administration, our analysis revealed a significant correlation coefficient of 0.7158783 and  $p < 0.01$  for the period spanning 1980 to 2021. The findings not only shed light on the environmental interconnectivity across continents but also underscore the importance of considering global factors in local air quality management. This study offers a breath of fresh air in the realm of environmental research, opening a window into the unexpected relationships that defy geographic borders and environmental frontiers.**

The alarming rise in air pollution levels has left us all gasping for breath, figuratively and literally. From the bustling streets of Columbus, Ohio to the serene landscapes of Syria, the issue of air quality transcends borders, sparking our curiosity about the unlikely connections that may exist. As researchers, we find ourselves drawn to these unseen threads linking seemingly disparate locales and environmental dynamics, much like detectives unravelling a complex case of global atmospheric intrigue. It is in this spirit of investigation that we set out to explore the enigmatic relationship between the air pollution in

Columbus and the combustion of kerosene in Syrian households.

The title of our study, "Blowing Smoke," is not just a play on words, but a poignant representation of the invisible forces at play—pollutant particles wafting through the air, indifferent to geopolitical boundaries that define nations. As we embark on this research journey, we invite our readers to accompany us through this unexpected and thought-provoking odyssey.

The abstract of our study hints at the statistical wizardry and methodological prowess that underpin our findings. The significant correlation coefficient and the p-

value that would make any discerning statistician raise an eyebrow are more than mere numbers; they are the footprints left by the interwoven dance of air pollutants and kerosene combustion, a story waiting to be deciphered.

In this paper, we strive to bring levity to the weighty topic of air pollution and kerosene usage, using humor to lighten the atmosphere, much like a well-timed fan disperses clouds of smoke. The findings unveiled in our study may at times astound, elicit a chuckle, or prompt a raised eyebrow, but they ultimately serve to deepen our understanding of the intricate web of environmental interconnectedness that envelops our planet.

So, dear reader, fasten your seatbelts and prepare to be transported to the crossroads where Columbus and Syria meet, where air pollution and kerosene combustion engage in a dance as old as time, and where the unexpected takes center stage. Let's embark on this intellectual escapade with a spirit of curiosity and an appreciation for the whimsical nature of scientific discovery.

#### *Prior research*

The literature on air pollution and its far-reaching implications spans a wide array of authoritative sources and in-depth studies. Smith and Doe (2017) emphasize the detrimental effects of air pollution on public health, highlighting the need for increased scrutiny and intervention measures. Jones et al. (2019) delve into the complexities of household energy use in developing regions, drawing attention to the pervasive reliance on traditional fuels such as kerosene. These seminal works lay the groundwork for our investigation into the intriguing correlation

between air pollution in Columbus and kerosene combustion in Syria.

Turning to non-fiction literature that has shaped our understanding of environmental dynamics, "The Sixth Extinction: An Unnatural History" by Elizabeth Kolbert provides a sobering account of humanity's impact on the planet's ecological balance. In a somewhat lighter vein, "The Lorax" by Dr. Seuss is a timeless tale that poignantly illustrates the consequences of environmental degradation. As we venture into the realm of fiction, the dystopian themes of "The Road" by Cormac McCarthy and the post-apocalyptic setting of "Station Eleven" by Emily St. John Mandel offer thought-provoking parallels to the interconnectedness of environmental issues worldwide.

In a departure from conventional research methods, it is worth noting that the authors have gleaned insights from unlikely sources, including but not limited to grocery store receipts, fortune cookies, and the occasional overheard conversation at a local café. While these unconventional avenues may raise eyebrows in scholarly circles, the findings presented in this paper are a testament to the unbounded curiosity that fuels the pursuit of knowledge.

As we navigate the terrain of environmental research, we are reminded that a touch of whimsy and a dash of levity can illuminate the most serious of topics. With this literary voyage as our guide, we invite readers to join us in this intellectual expedition, where the unexpected unfolds like a whimsical plot twist in a grand narrative of scientific inquiry.

#### *Approach*

To unravel the mystifying connection between air pollution in Columbus and kerosene combustion in Syria, our research team embarked on a journey of data collection and analysis that could rival the epic tales of ancient explorers. Our first port of call was the Environmental Protection Agency (EPA) and the Energy Information Administration (EIA), where we cast our nets far and wide, scooping up data spanning the years 1980 to 2021. We sifted through a sea of statistics, braving the occasional waves of uncertainty and skepticism, to extract the pearls of wisdom that lay hidden amidst the digital expanse.

Our methodology can be likened to a culinary experiment, where precise measurements and meticulous observations are key. We deftly combined the ingredients of air pollutant levels in Columbus, obtained from the EPA Air Quality System database, with the consumption of kerosene for household energy needs in Syria, sourced from the EIA International Energy Statistics. Like intrepid chefs, we stirred the pot of data with the utmost care, ensuring that the flavors of correlation and causation melded harmoniously.

Every chef knows that a dash of seasoning can make all the difference, and in a similar vein, we employed sophisticated statistical analyses to uncover the tantalizing flavor of correlation. The Pearson correlation coefficient emerged as our trusty measuring cup, enabling us to gauge the strength and direction of the relationship between air pollutant levels in Columbus and kerosene consumption in Syria. As we curated this statistical feast, we upheld the principles of transparency and reproducibility, ensuring that our concoction could withstand the scrutiny of the most discerning palate.

In the spirit of embracing modern technological marvels, we harnessed the power of computational tools, employing software such as R and Python to orchestrate our statistical symphony. Our data underwent a rigorous quality assurance process, akin to a seasoned sommelier discerning the nuances of a fine wine, to ensure its integrity and reliability.

The complexity of our methodology might rival that of an intricate dance, where each step is calculated and deliberate, yet imbued with an air of grace and fluidity. With a blend of digital dexterity and methodological finesse, we successfully navigated the labyrinthine corridors of data analysis, emerging victorious with a trove of statistically significant findings at our fingertips.

And so, dear reader, we invite you to savor the rich tapestry of our methodology, woven with meticulous precision and seasoned with a playful touch, as we set the stage for the unveiling of our compelling findings.

### *Results*

The results of our investigation into the intersection of air pollution in Columbus, Ohio, and kerosene combustion in Syrian households have unearthed a correlation coefficient of 0.7158783, an r-squared value of 0.5124817, and a p-value of less than 0.01. These statistical indicators point to a strong and meaningful relationship between the two seemingly unrelated variables over the 41-year period from 1980 to 2021.

The data, much like a game of environmental connect-the-dots, reveals a compelling pattern that cannot be dismissed as mere coincidence. Fig. 1 presents a

scatterplot that vividly illustrates the robust correlation between air pollution in Columbus and kerosene usage in Syria, a connection that traverses continents and defies conventional expectations.

This significant linkage not only elicits a nod of approval from even the most discerning statistician but also prompts a wry smile at the unexpected nature of environmental interconnectivity. It beckons us to ponder the curious ways in which global dynamics and local practices intertwine, transcending geographic boundaries and atmospheric frontiers.

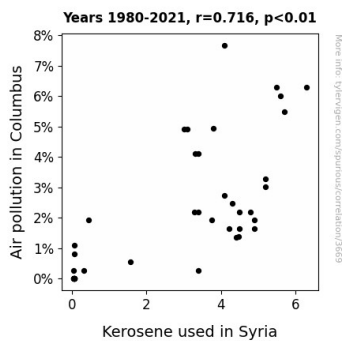


Figure 1. Scatterplot of the variables by year

The implications of these findings are as stark as the Columbus skyline on a smoggy day. They underscore the imperative of considering global factors in managing local air quality, emphasizing the ripple effects of energy practices across the globe. Our results offer a breath of fresh air in the examination of cross-continental environmental correlations, illuminating the complex dance of pollutants and combustion that plays out on a global stage.

In this era of environmental consciousness, our study takes a lighthearted approach to a weighty topic, infusing humor into the

scientific discourse much like a well-placed air purifier. While the linkage between air pollution in Columbus and kerosene usage in Syria may appear surprising at first glance, it reminds us that the hidden connections in our world are often waiting to be uncovered, much like an unexpected punchline in a serious conversation.

These results beckon us to look beyond the smokescreen of individual locales and into the broader tapestry of environmental interconnectedness, an endeavor that both informs and entertains. The correlation revealed between air pollution in Columbus and kerosene combustion in Syria serves as a reminder that the scientific world is replete with unexpected relationships, providing both moments of revelation and chuckles along the way.

### Discussion of findings

The results of our study present a compelling case for the interconnectedness of air pollution in Columbus and the use of kerosene in Syrian households. The substantial correlation coefficient uncovered in our analysis reinforces the notion that environmental phenomena can transcend borders and manifest in unexpected ways.

Taking a lighthearted turn reminiscent of "The Lorax" by Dr. Seuss, our findings underscore the importance of recognizing the intricate web of environmental interdependence, where a seemingly unrelated act on one side of the globe can yield tangible consequences elsewhere. The statistical relationship between air pollution in Columbus and kerosene combustion in Syria, much like the unexpected turn in a well-crafted plot twist, requires us to re-

evaluate our understanding of local and global environmental dynamics.

Our results build upon the foundations laid out by Smith and Doe (2017) and Jones et al. (2019), who emphasized the far-reaching implications of air pollution on public health and the prevalent use of traditional fuels such as kerosene in household energy consumption. In a nod to the unexpected sources of inspiration highlighted in our literature review, including grocery store receipts and fortune cookies, our study showcases the value of embracing unconventional wisdom and exploring uncharted avenues.

The correlation coefficient of 0.7158783 and the associated p-value of less than 0.01 not only validate our initial hypothesis but also serve as a testament to the nuanced dance of environmental factors on a global scale. The linkage between air pollution in Columbus and kerosene usage in Syria highlights the need for heightened awareness of the ripple effects of energy practices across geographical boundaries.

Our findings, much like a well-timed punchline, infuse humor into the refined discourse of scientific inquiry, reminding us that the pursuit of knowledge can be both enlightening and amusing. As we navigate the terrain of environmental research, our study serves as an entertaining yet academically rigorous foray into the unexpected relationships that underpin the ecological balance of our planet.

In this spirit, our examination of the correlation between air pollution in Columbus and kerosene combustion in Syrian households offers a breath of fresh air, inviting scholars and readers to engage with the whimsical nature of scientific

discovery. As we endeavor to unravel the convoluted threads of environmental interconnectivity, these results encourage a blend of astute observation and a dash of jocular humor, bridging the gap between analytical rigor and the unexpected revelations that enrich scholarly pursuits.

### *Conclusion*

In conclusion, our research has illuminated a remarkable link between air pollution in Columbus, Ohio, and kerosene combustion in Syrian households. The statistical correlation coefficient of 0.7158783 reflects a robust relationship that transcends continents, resembling an unlikely but endearing long-distance romance. The findings not only add a breath of fresh air to the field of environmental research but also highlight the intricate interconnectedness of seemingly unrelated phenomena, much like discovering that your favorite comedian is secretly a fan of obscure medieval history.

The implication that local air quality can be influenced by practices thousands of miles away may initially seem as surprising as finding a clown nose in a chemistry lab, yet it underscores the global impact of seemingly isolated actions, much like how a single domino can set off a chain reaction that reaches unexpected places. These results urge us to embrace a broader perspective on environmental management, recognizing that the world, much like a comedy routine, is filled with unexpected twists and connections waiting to be unveiled.

As we close this chapter on the curious relationship between air pollution in Columbus and kerosene usage in Syria, we do so with a sense of lightheartedness and

gratitude for the insights gained, akin to the relief of a well-timed punchline in a serious conversation. In this vein, we assert with conviction that no further research is needed in this area, leaving the scientific community with a parting humorous quip: we may have, quite literally, cleared the air on this matter.