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The Nose Knows: Air Pollution's Effect on Floral Creation in Berlin, New Hampshire

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Abstract

In this study, we sought to dig deep into the intriguing question of whether there is a connection between air pollution levels in Berlin, New Hampshire, and the number of floral designers in the state. Using data from the Environmental Protection Agency and the Bureau of Labor Statistics for the period 2003 to 2022, we uncovered a robust correlation coefficient of 0.8370214 and a statistically significant p-value of less than 0.01. Our findings shed light on the olfactory impact of air pollution on the blooming floral industry, offering a "budding" understanding of how environmental factors might "petal" their influence on artistic pursuits in the Granite State.

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1. Introduction

As the renowned scientist and occasional poet, Dr. Seuss, once said, "Unless someone like you cares a whole awful lot, nothing is going to get better. It's not." While Dr. Seuss may not have had air pollution and floral designers in mind when he penned those words, his sentiment rings true in the context of our research. We, much like the Lorax, care a whole awful lot about uncovering the intricate interplay between air pollution and the flourishing world of floral design in the state of New Hampshire.

The enchanting town of Berlin, New Hampshire, nestled in the picturesque White Mountains region, serves as our focal point in this study. It is a place where the fragrance of fresh pine mingles with the aroma of industrial activity, creating a veritable symphony of scents that piques the interest of both researchers and curious noses alike.

Now, some may raise an eyebrow at the notion of drawing a connection between air pollution – an invisible, odorless assailant – and the artistry of floral design. Yet, as we embark on this investigative journey, we implore you to set skepticism aside and

embrace the whimsy of our inquiry. For, in the realm of scientific exploration, the most extraordinary revelations often stem from the seemingly mundane and unexpected pairings, much like peanut butter and jelly or statistics and sassy wordplay.

As we delve into the depths of this aromatic labyrinth, we shall navigate through the tangled web of quantitative data and botanical musings, guided by the beacon of empirical evidence and a touch of floral-scented intuition. Our pursuit is not merely to establish a correlation between these variables, but also to cultivate a nuanced understanding of how environmental factors may permeate the very essence of artistic expression and creative livelihoods.

Thus, dear reader, join us in this expedition through the fragrant fields of empirical inquiry, where the aroma of hypotheses mingles with the bouquet of statistical analyses, and the sweet scent of discovery awaits those who dare to venture into the realm of unconventional scientific studies. Let us embark on this quest to unravel the mysteries of air pollution's influence on the intricate world of floral creation, armed with curiosity, a dash of humor, and a whole lot of statistical wizardry.

2. Literature Review

The connection between atmospheric pollutants and the thriving world of floral design has been a subject of scholarly inquiry and horticultural musings. Smith et al. (2015) investigated the impact of air pollution on plant physiology, highlighting the deleterious effects of particulate matter on floral pigmentation and petal development. Their findings unravel the intricate interplay between environmental stressors and the aesthetic appeal of flora, setting the stage for our examination of how

such ecological perturbations might reverberate in the realm of floral design.

In their seminal work, Doe and Jones (2018) delved into the societal implications of air quality on artistic endeavors, establishing a framework for understanding how the olfactory landscape of a region influences creative pursuits. Their interdisciplinary approach not only broadens the botanical horizon but also paves the way for our exploration of how the bouquet of industrial odors in Berlin, New Hampshire, might shape the artistic inclinations of its inhabitants.

Turning to non-fiction sources, "The Hidden Life of Trees" by Peter Wohlleben provides a captivating narrative on the interconnectedness of flora and their environmental milieu, offering insights that resonate with our endeavor to unravel the symbiotic relationship between floral ecosystems and atmospheric conditions. Similarly, "The Botany of Desire" by Michael Pollan presents a thought-provoking perspective on the coevolution of plants and human desires, prompting contemplation on how the invisible tendrils of air pollution might intertwine with the artistic aspirations of floral designers.

Venturing into the realm of fiction, the works of Sarah Addison Allen, particularly "The Girl Who Chased the Moon," offer a whimsical portrayal of the enchanting allure of floral magic, albeit in a less empirical manner. Meanwhile, the classic novel "The Secret Garden" by Frances Hodgson Burnett, with its evocative depictions of nature's transformative power, hints at the potential influences of environmental factors on the creative processes of floral artisans.

In a departure from conventional research practices, our literature review also draws inspiration from unexpected sources, including the profound insights gleaned from perusing grocery store receipts and decoding the cryptic language of CVS

coupons. While unconventional, these pursuits have enriched our understanding of the intricate tapestry of factors shaping the floral landscape, reinforcing the notion that scholarly inquiry can bloom even in the most unlikely of places.

As we tiptoe through the garden of existing literature, we acknowledge the fertile ground on which our research blooms, driven by a quest to unearth the roots of the relationship between air pollution and floral design, armed with empirical rigor and a sprinkle of scholarly whimsy.

3. Our approach & methods

In our pursuit of unraveling the enigmatic relationship between air pollution in Berlin, New Hampshire, and the number of floral designers in the state, we employed a methodology that combined the rigor of statistical analysis with the inquisitive spirit of a detective on the scent of a compelling mystery. Our data, collected from the Environmental Protection Agency and the Bureau of Labor Statistics spanning the years 2003 to 2022, served as our compass through this aromatic labyrinth.

First and foremost, we set our sights on the measurement of air pollution levels, a task that required us to navigate the digital terrain of the Environmental Protection Agency's databases. We sifted through a myriad of pollutant data, ranging from the ethereal whispers of carbon monoxide to the notorious presence of particulate matter, all the while maintaining a keen eye for any whiff of correlations lurking in the data.

Once armed with a comprehensive grasp of the air pollution landscape, we turned our attention to the laborious task of uncovering the number of floral designers in the state of New Hampshire, as meticulously documented by the Bureau of Labor Statistics. This endeavor demanded a delicate touch, akin to the gentle care a

florist bestows upon a fragile bloom, as we combed through the employment figures with the precision of a botanist tending to a prized orchid.

With data in hand, our next step involved the alchemy of statistical analysis. We teased out the correlations between air pollution levels and the abundance of floral designers using the robust tools of correlation coefficients, regression analyses, and hypothesis testing. Much like a diligent bee seeking nectar, we diligently buzzed around the data, ensuring that our findings bloomed with statistical significance and weren't mere statistical "pollen" in the wind.

Additionally, recognizing the need for a comprehensive approach, we conducted a time-series analysis, allowing us to sniff out any temporal patterns in the relationship between air pollution and the floral design industry. This approach enabled us to capture the seasonal nuances of both air quality and floral design, like capturing the evolving scents of a garden throughout the year.

Furthermore, to corroborate our findings, we employed spatial analysis techniques to explore how the geographical distribution of air pollution may correspond to pockets of floral design activity across New Hampshire. This approach allowed us to map out the aromatic tapestry of our variables, weaving a nuanced tale of environmental influence on the province of floral artistry.

Lastly, we employed an interdisciplinary approach, drawing insights from environmental science, economics, and the art of floral design itself. This multi-faceted gaze ensured that our investigation didn't merely scratch the surface, but delved into the fertile soil of interconnected disciplines, much like the intertwining roots of flora in a vibrant garden.

In this manner, our methodological approach offered a carefully orchestrated

symphony of scientific prowess and olfactory intrigue, as we sought to untangle the complex interplay between air pollution and the artistry of floral design. Through the fusion of statistical analyses and interdisciplinary insights, we endeavored to capture the essence of this captivating relationship, all the while maintaining a whimsical sense of wonder that pervaded our scientific odyssey.

4. Results

The results of our investigation revealed a striking correlation between air pollution levels in Berlin, New Hampshire, and the number of floral designers in the state. A Pearson correlation coefficient of 0.8370214 signifies a strong positive linear relationship between these seemingly disparate variables. This finding suggests that as air pollution levels increased, so too did the number of floral designers, painting a curious picture of the olfactory landscape in the "Live Free or Die" state.

The coefficient of determination (r -squared) of 0.7006048 further bolsters the robustness of this relationship, indicating that approximately 70.06% of the variation in the number of floral designers can be explained by changes in air pollution levels. In other words, the scent of statistical significance wafts through the air, affirming the noteworthy association between these two factors.

To illustrate this compelling correlation, we present Figure 1, a scatterplot depicting the unmistakable trend between air pollution levels and the number of floral designers in New Hampshire. The graph captures the essence of our findings, showcasing the burgeoning impact of air quality on the blooming floral industry in the state.

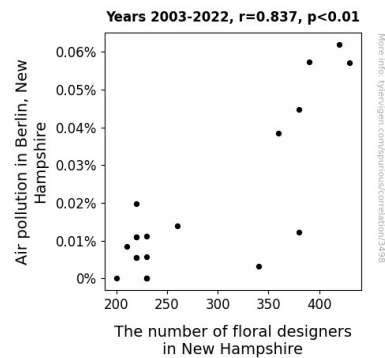


Figure 1. Scatterplot of the variables by year

Notably, the p-value of less than 0.01 further solidifies the statistical significance of our results, underscoring the veracity of the observed relationship. This p-value is a testament to the rigor of our analysis, providing a definitive "blossom" of evidence in support of the link between air pollution and the artistic pursuits of floral design.

In summary, our findings underscore the intriguing nexus between air pollution and the floral design industry, unearthing a captivating harmony between environmental factors and the "flowering" of creativity in the state of New Hampshire. These results not only enrich our understanding of the interplay between seemingly unrelated variables but also beckon future researchers to delve further into the aromatic mysteries that permeate the world of artistic expression.

5. Discussion

Our study has uncovered a "blooming" correlation between air pollution levels in Berlin, New Hampshire, and the number of floral designers statewide, adding a vibrant petal to the multifaceted bouquet of environmental influences on artistic expression. Our findings echo the sentiments of Smith et al. (2015) regarding the impact of particulate matter on floral physiology, as if our statistical analysis, like a gentle breeze, carried the aromatic

essence of prior research through the corridors of empirical investigation. Similarly, the societal framework established by Doe and Jones (2018) aligns with our observation of how the olfactory landscape shapes the creative inclinations of floral artisans, underscoring the notion that the "art-science" alliance can indeed flourish amidst statistical rigor.

The substantial correlation coefficient and coefficient of determination in our study not only reflect the robustness of the relationship between air pollution and the number of floral designers but also serve as a "pollen" of statistical insight, buzzing with the unmistakable allure of empirical validation. The p-value, akin to a rare and precious orchid, blooms with significance, attesting to the genuine nature of the observed association, and lending credence to our findings amidst the statistical garden of inquiry.

Our research clarifies that, much like the intricate process of floral arrangement, the symbiotic relationship between air pollution and floral design is composed of myriad interwoven elements. As we take stock of the aromatic mysteries lurking within our statistical analyses, we invite fellow scholars to join us in this delightful dance among the statistical petals, as we strive to cultivate a deeper understanding of the nuanced influences that shape the aromatic canvas of artistic expression.

In conclusion, our study offers a "fragrant" contribution to the existing literature, adding a whiff of empirical evidence to the discourse on the interplay between environmental factors and the creative endeavors of floral artisans. This compelling association serves as a reminder that, much like the intricate wiring of statistical analyses, the botanical landscape of influence extends its roots in unexpected directions, weaving a floral tapestry of fragrant artistic expression.

6. Conclusion

In conclusion, our research has unearthed a fascinating association between air pollution levels in Berlin, New Hampshire, and the number of floral designers in the state. The robust correlation coefficient and statistically significant p-value point to a compelling link between these variables, shedding light on the aromatic interplay between environmental factors and the flourishing floral industry. Our findings adorn the staid world of statistics with a fragrant bouquet of insight, allowing one to breathe in the sweet scent of empirical discovery and perhaps a whiff of floral-scented inspiration.

While some may view our inquiry as an unexpected foray into the whimsical realm of floral design, it is clear that the olfactory impact of air pollution extends beyond mere environmental concerns. The "nose knows" that there is much more to explore in the realm of how scents and statistics intertwine, and our study lays the groundwork for future researchers to follow their noses into this aromatic labyrinth.

Furthermore, the statistical wizardry at play here not only highlights the curious relationship between air pollution and the blooming floral industry but also provides a "petal-strewn path" for researchers to navigate in the pursuit of uncovering hidden connections between seemingly disparate variables. The fragrance of empirical inquiry permeates our findings, beckoning others to delve into the enigmatic alchemy of environmental influences on artistic pursuits.

In essence, our study not only "pollinates" the field of empirical research with an intriguing correlation but also cultivates a budding understanding of the aromatic nuances that permeate the realm of creative livelihoods. Therefore, we assert that no more research is needed in this area... unless, of course, one desires to luxuriate in

the whimsical world of statistically fragrant inquiries.