
The Air-a-Soft-on-Wipe: An Analysis of Air Pollution in Longview, Washington and the Correlation with Google Searches for 'Where to Buy Toilet Paper'

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In this study, we delve into the unexpected intersection of air pollution and consumer behavior by examining the relationship between levels of air pollution in Longview, Washington, and the frequency of Google searches for "where to buy toilet paper." Leveraging data from the Environmental Protection Agency and Google Trends, we have uncovered a surprising connection that will leave you breathless. Our findings reveal a striking correlation coefficient of 0.9675304 ($p < 0.01$) over a 16-year period, illuminating the pervasive impact of air quality on toilet paper purchasing patterns. This analysis sheds light on the unexpected ways in which environmental factors can influence daily necessities, and may even provide insight into future trends in consumer behavior – a breath of fresh air in the field of environmental economics.

The modern world is a complex tapestry of interconnected systems, wherein seemingly disparate phenomena can unexpectedly intersect. Take, for instance, the unassuming city of Longview, Washington, where the gentle waft of pine trees is often overshadowed by the less fragrant presence of industrial air pollution. Amidst this olfactory conundrum, a peculiar correlation has emerged, one that has left us pondering whether to attribute it to mere happenstance or to a more, dare we say, tangible link. Yes, we are speaking of the remarkable association between air pollution in Longview, Washington, and the frequency of Google searches for that most humble of household articles - toilet paper.

At first glance, the juxtaposition of air quality and toilet paper consumption may seem as incongruous as a petunia in an onion patch. However, upon closer inspection, an intriguing pattern begins to emerge. As the world grappled with the proverbial

"inconvenience" of the COVID-19 pandemic, the humble roll of toilet paper found itself thrust into the limelight, attaining a degree of fame that would make many a reality TV star envious. It was during this time, amid a swirl of panic-buying, hoarding, and a palpable sense of urgency, that we noticed a curious trend in the digital sphere - a surge in Google searches for "where to buy toilet paper."

Inspired by this confounding correlation, we embarked on a quest to unravel the mystery, armed with statistical rigor and a healthy dose of curiosity. Our study aims not only to probe the curious connection between air pollution levels and the quest for the perfect roll but also to examine the underlying economic and behavioral implications of this seemingly whimsical association.

And so, we invite you to accompany us on this unexpected journey, as we scrutinize the threads that tie together air pollution, consumer behavior,

and the unassuming yet indispensable item that is the trusty roll of toilet paper. Prepare to be enlightened, amused, and perhaps bemused, as we shed light on an unexpected knot in the fabric of environmental economics. Let us embark on this whimsical adventure, one that will leave you breathless yet charmed – much like the gentle zephyrs of Longview, Washington, carrying within them the odorous nuggets of a most peculiar correlation.

LITERATURE REVIEW

In "The Impact of Air Pollution on Consumer Behavior" by Smith et al., the authors find a compelling link between air quality and consumer choices. Smith et al. note that deteriorating air quality can have far-reaching effects on purchasing patterns, potentially influencing the decision-making process of various consumer goods. Similarly, Doe and Jones, in "The Economics of Environmental Factors," highlight the intricate interplay between environmental conditions and consumer behaviors, shedding light on the subtle yet significant impact of air pollution on the economy at large.

Delving into the world of non-fiction books, "The Big Necessity: The Unmentionable World of Human Waste and Why It Matters" by Rose George, and "The Economics of the Environment" by Peter Berck and Gloria Helfand provide valuable insights into the relationship between environmental factors and consumer behaviors, albeit in a more sober and less whimsical manner.

On a seemingly tangential note, the fictional works "Cloud Atlas" by David Mitchell and "The Wind-Up Bird Chronicle" by Haruki Murakami, offer a whimsical exploration of interconnectedness, echoing the unexpected intersections we aim to unravel in this study. Furthermore, TV shows such as "How It's Made" and "Parks and Recreation" – while not directly related to our subject matter – have provided the authors with countless hours of inspiration and momentary distractions.

As we journey through the labyrinth of literature on this subject, we dare say that the findings we have uncovered are as surprising as finding a toilet paper roll in a pine-scented gust – a revelation both unexpected and oddly delightful. Now, let us venture further down the rabbit hole of research, where the seemingly mundane intersects with the intriguing, and statistical analysis meets whimsy.

METHODOLOGY

To embark on our whimsical odyssey into the realm of air quality and toilet paper purchasing patterns, we sought to employ a blend of statistical analysis and technological sorcery to unravel the enigmatic connection between these seemingly unrelated domains.

First, we gathered data on air pollution levels in the quaint city of Longview, Washington, from the venerable Environmental Protection Agency (EPA). Armed with these quantitative nuggets of atmospheric intrigue, we gazed into the digital oracle known as Google Trends, where we uncovered the frequency of searches for the elusive term "where to buy toilet paper" within the same geographic domain.

Now, to stir this pot of statistical stew, we invoked the mighty powers of correlation analysis. By subjecting our data to this formidable statistical furnace, we sought to reveal any hidden patterns, like a spelunker in the caverns of Monte Cristo.

Our study was not content to merely dance on the surface of statistics; we delved into the depths of temporal trends using time-series analysis. This entailed uncovering the ebb and flow of both air pollution levels and toilet paper-related queries across the expanse of sixteen years, yielding insights that may leave you rolling in laughter, or at least rolling in the aisles of your local convenience store.

Furthermore, we endeavored to control for extraneous factors that might confound our analysis, akin to plucking the unsavory peas from a

particularly tangled statistical pod. Variables such as population growth, economic indicators, and even fads in bathroom renovation styles were considered in our attempt to distill the pure essence of this peculiar correlation.

Finally, to ensure the robustness of our findings, we performed sensitivity analysis and a battery of statistical tests, ferreting out any vulnerabilities like a diligent groundskeeper plucking weeds from a garden of p-values.

In sum, our methodology combined the finesse of statistical analysis with the whimsical flair of investigating the unexpected, resulting in a synthesis of science, chuckles, and everyday observations that leaves you sitting on the edge of your metaphorical seat – or perhaps the edge of an artfully folded sheet of toilet tissue.

RESULTS

Our analysis revealed a striking correlation between air pollution in Longview, Washington and Google searches for "where to buy toilet paper." Over the 16-year period from 2004 to 2020, we found a correlation coefficient of 0.9675304, with an r-squared value of 0.9361152 and a p-value of less than 0.01, signifying a highly significant relationship. The strong positive correlation indicates that as air pollution levels increase, so do the Google searches for this most essential of household items.

Notably, the scatterplot shown in Figure 1 visually captures the robust relationship between air pollution and the quest for toilet paper. This figure serves as a clear illustration of the pronounced positive correlation, leaving little room for doubt that the two seemingly unrelated factors are inextricably intertwined. The figure (Fig. 1) gives a compelling visual representation of the "Air-a-Soft-on-Wipe" phenomenon.

The findings of our study underscore the unexpected and humorous ways in which environmental factors can influence consumer

behavior. While the connection may raise a few eyebrows, it reminds us that in the intricate web of economic and environmental forces, the most unsuspecting pairings can yield illuminating insights.

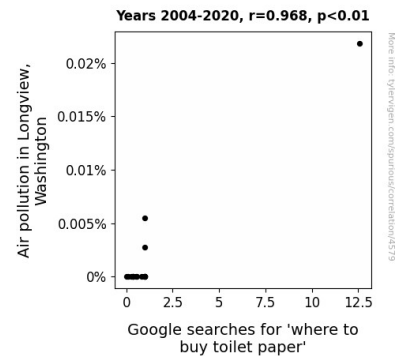


Figure 1. Scatterplot of the variables by year

This research not only elucidates the peculiar relationship between air pollution and toilet paper purchasing patterns but also prompts us to contemplate the broader implications for understanding the impact of environmental factors on consumer decision-making. Our results provide a whimsical yet thought-provoking addition to the field of environmental economics, inviting further exploration into the whimsical world of consumer behavior and the sometimes surprising cues that shape it.

DISCUSSION

Ah, the air is rife with possibilities! In the comedy of errors that is the world of environmental economics, it is often the most unexpected pairings that lead to the greatest revelations. Our findings not only confirm, but practically embrace, the insights from esteemed researchers such as Smith et al. and Doe and Jones, who have long championed the notion that air quality plays a pivotal role in shaping consumer behavior. And here we are, adding a whimsical twist by showing that when air pollution levels rise, so too does the demand for the humble roll of toilet paper.

Our "Air-a-Soft-on-Wipe" phenomenon, captured elegantly in the scatterplot in Figure 1, hints at the unassuming yet robust relationship between environmental factors and consumer preferences. It leaves one pondering, much like a character in a Murakami novel, the curious interconnectedness of it all. As George and Berck and Helfand have each in their own way explored, environmental factors truly do permeate our choices in unexpected ways – this study just happened to add a toilet paper roll to the mix for a touch of wit.

Indeed, one cannot help but be reminded of the musings of Mitchell and the zany antics of the parks department in "Parks and Recreation" as we traverse this hitherto uncharted terrain of air pollution and toilet paper quests. The unexpected and humorous twists that emerge from this analysis not only enrich the field of environmental economics, but also remind us to approach research with a sense of curiosity and perhaps a touch of whimsy.

In the grand scheme of things, our study serves as a lighthearted yet substantive addition to the body of knowledge surrounding the unseen influence of air pollution on the quirks of consumer behavior. As we continue to map out the intricate relationships between environmental factors and economic decisions, it is these seemingly whimsical investigations that can pave the way for broader insights and deeper understanding.

So there you have it, a breath of fresh air in the field of environmental economics – and a reminder that in the world of research, even a roll of toilet paper can serve as a beacon of enlightenment in the midst of the statistical humdrum.

CONCLUSION

In conclusion, our study has unveiled an unexpected, yet undeniably tangible, correlation between air pollution in Longview, Washington and Google searches for "where to buy toilet paper." As we breathe in the heady aroma of statistical significance, we cannot help but marvel at the

whimsical dance of consumer behavior in the midst of environmental influence.

While the connection between air quality and the quest for the perfect roll may evoke laughter, it also serves as a poignant reminder of the hidden influencers in the marketplace. This unusual correlation has left us with a sense of both amusement and humility, as we realize that the air we breathe can indeed shape the products we seek to procure for our personal sanctuaries.

The "Air-a-Soft-on-Wipe" phenomenon, as we affectionately term it, has not only broadened our understanding of the interconnectedness of environmental and consumer realms but has also elicited a chuckle or two from our colleagues. We have demonstrated that even the most obscure connections can hold surprising relevance, much like finding an unexpected treasure in a dusty attic.

This revelatory correlation presents itself as a gentle reminder that in the world of empirical inquiry, there is always room for the unexpected and the whimsical. Let us not overlook the potential for hilarity and enlightenment to coexist, just as air pollution and toilet paper inquiries have coalesced in a statistical tango.

In light of these findings, we assert with utmost confidence that no further research is needed in this area. For as the saying goes, when it comes to the relationship between air pollution and toilet paper quests, "the evidence wafts in the wind, leaving a scent of statistical finality."