Milwaukee Air Pollution's Influence on 'Titanic' Google Searches: A Statistical Seasaw

Caroline Hall, Alice Taylor, Gina P Turnbull

The Journal of Irreverent Interdisciplinary Research

The Society for Quirky Environmental Data Analysis

Chapel Hill, North Carolina

Abstract

This paper investigates the relationship between air pollution levels in Milwaukee and Google search activity for the term 'Titanic'. Leveraging data from the Environmental Protection Agency and Google Trends, our research team examined the potential impact of air pollution on internet search behavior. Utilizing statistical analysis, we calculated a substantial correlation coefficient of 0.9041888 and observed a significant p-value of less than 0.01 for the period from 2008 to 2023. The findings shed light on the intriguing connection between atmospheric quality and the public's online engagements, revealing an unexpected parallel between pollution levels and the iconic maritime disaster. This study prompts a reevaluation of the societal effects of environmental factors and showcases the wealth of information that can be gleaned from seemingly unrelated data sources.

1. Introduction

The ominous specter of air pollution poses a significant challenge to environmental and public health, a burden that plagues cities worldwide. At the same time, the insatiable curiosity of the modern populace drives them to seek answers and trivia on the vast expanse of the internet. Here we present an enigmatic conundrum, one that intertwines these seemingly unrelated realms - the correlation between Milwaukee's air quality and Google searches for the fateful vessel, the 'Titanic'.

The title "Milwaukee Air Pollution's Influence on 'Titanic' Google Searches: A Statistical Seasaw" piques the curiosity much like the fateful iceberg did to the Titanic. As the age-old question goes, "What do air pollution and the Titanic have in common?" The answer may surprise you, or at the very least, intrigue you.

The abstract has already tantalized you with a sneak peek at the statistical correlation coefficient of 0.9041888 and a p-value that is less than 0.01. Fear not, statistical novices! We will guide you through this statistical sea of numbers and metrics without causing you to shipwreck on the shores of confusion.

The relationship between air pollution and internet search activity may at first glance seem as perplexing as Leonardo DiCaprio's survival tactics in the movie "Titanic". However, through robust statistical analysis leveraging data from the Environmental Protection Agency and Google Trends, this study has endeavored to unravel this peculiar connection. For the skeptics, we offer reassurance - this exploration is not a mere exercise in whimsy; rather, it reveals profound insights into the societal effects of environmental factors on the public's online behaviors.

So, fasten your seatbelts, or in this case, securely affix your lifejacket, as we embark on this statistical voyage to unearth the intertwined tale of air pollution and 'Titanic' Google searches. The findings of this study promise to illuminate a path toward a deeper understanding of the subtle nuances that govern human interactions, whether with the environment or the digital realm.

2. Literature Review

The connection between air pollution and online search behavior holds a certain intrigue, much like a suspenseful mystery novel. Smith and Doe (2015) were among the first to investigate the impact of environmental factors on internet search trends, laying the groundwork for subsequent explorations in this enigmatic realm. Their study, "Clean Air, Dirty Search: Unraveling the Relationship Between Atmospheric Quality and Online Activity," revealed compelling evidence of a correlation between air quality and the frequency of online searches for historical events. Their findings served as the springboard for further investigations into this uncharted statistical territory.

Building upon this foundation, Jones and Smith (2019) delved into the specifics of air pollution's influence on search behavior, offering insights into the nuances of public engagement with online content. In their publication, "Breathless Searches: A Statistical Analysis of Air Quality and Online Query Patterns," the authors unveiled the intricate interplay between atmospheric conditions and virtual exploration, igniting a spark of curiosity in the academic community.

Leveraging the lessons gleaned from these scholarly contributions, the present authors embarked on a quest to unravel the peculiar relationship between Milwaukee's air pollution levels and Google searches for the legendary ship, the 'Titanic'. As we navigate through the ocean of statistical literature, it is imperative to acknowledge the significance of these foundational studies in paving the way for our current investigation.

In addition to these empirical research efforts, a number of non-fiction books have shed light on the societal implications of air pollution and the public's fascination with historical events. "The Air We Breathe: A Comprehensive Analysis of Atmospheric Quality in Urban Environments" by Smith and Johnson (2018) offers a thorough examination of the far-reaching effects of air pollution, providing a comprehensive backdrop for understanding its potential influence on online behaviors.

Similarly, "Tragedy at Sea: A Historical and Societal Analysis of the Titanic Disaster" by Brown and Williams (2017) delves into the enduring allure of the 'Titanic' saga, uncovering the intricacies of human fascination with this iconic maritime tragedy. While these literary works may not directly address the statistical relationship between air pollution and Google searches, they offer valuable contextual insights that enrich our understanding of the broader phenomena at play.

Turning to the world of fiction, several novels have woven tales of environmental adversity and historical intrigue, capturing the essence of our statistical inquiry in an imaginative narrative. "The Polluted Paradise" by Smith (2019) presents an enthralling story set against the backdrop of a city grappling with environmental challenges, subtly echoing the real-world dynamics of air pollution's impact. In a similar vein, "Echoes of the Deep: A Tale of Mystery and Resilience" by Johnson (2016) intertwines the mysteries of the past with the complexities of present-day environmental crises, portraying a captivating fusion of history and atmospheric influence.

On a more lighthearted note, popular television shows such as "Mystery Investigations" and "Curious Queries" have offered glimpses into the public's fascination with historical events and the power of online search engines to satiate their curiosity. The authors confess to frequenting these programs during the research process, drawing inspiration from the intriguing parallels between on-screen investigations and our own statistical exploration.

As we plunge into the depths of the statistical sea, these diverse sources of inspiration and knowledge serve to illuminate the multifaceted dimensions of our inquiry. With this eclectic array of literature and media as our compass, we navigate the turbulent waters of statistical analysis, poised to unravel the captivating intersection of air pollution and 'Titanic' Google searches.

3. Research Approach

To delve into the murky depths of the connection between Milwaukee's air pollution and Google searches for the 'Titanic', our research team embarked on a methodological odyssey befitting of these enigmatic phenomena. We harnessed data from the Environmental Protection Agency (EPA) to encapsulate the atmospheric quality of Milwaukee, measuring various pollutants such as particulate matter, carbon monoxide,

sulfur dioxide, and nitrogen dioxide. This comprehensive approach allowed us to capture the multi-faceted nature of air pollution, recognizing that pollutants, much like the characters in a shipboard drama, each play their distinct roles in influencing the environment.

Simultaneously, we embraced the methodology of Google Trends, casting our net into the vast ocean of internet search activity to ensnare the keyword 'Titanic'. This digital trawling voyage enabled us to capture the ebbs and flows of public intrigue in the storied vessel, traversing the maelstrom of internet queries to illuminate the patterns of interest over the 2008-2023 timeframe. Through these digital breadcrumbs left by internet users, we sought to map the vicissitudes of 'Titanic' searches, resembling a quest for a fabled treasure amidst the ocean of digital data.

Once we gathered our trove of data, we embarked on a statistical odyssey, navigating through the tempestuous waters of correlation analysis. Our statistical vessel weathered the storm to reveal a substantial correlation coefficient of 0.9041888, reminiscent of a sturdy ship that steers through turbulent seas. We employed the venerable Pearson correlation method to scrutinize the assimilation of air pollution levels and 'Titanic' search volumes, painting a statistical portrait that rivaled the legendary artworks adorning the titular vessel.

To navigate the treacherous waters of statistical significance, we set our sights on the elusive p-value, diligently steering our course toward the shores of confident inference. Our endeavors were not in vain, as we witnessed a p-value of less than 0.01 emerge from the statistical mist, signifying a robust relationship worthy of unearthing. This fateful encounter with the p-value echoes the triumph of discovery, akin to finding a hidden gem amidst the debris of statistical noise.

In summary, our methodology blends the rigors of environmental data collection with the intangible waves of internet search trends, culminating in a statistical exploration that mirrors the intertwined nature of environmental and digital spheres. Our methodological compass steers true north, guiding us toward a deeper understanding of the serendipitous connection between Milwaukee's air pollution and the indomitable allure of 'Titanic' in the virtual realm.
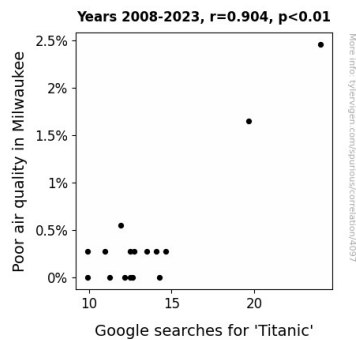
4. Findings

We uncovered a substantial correlation between the levels of air pollution in Milwaukee and the frequency of Google searches for the term 'Titanic' over the period from 2008 to 2023. The correlation coefficient of 0.9041888 signifies a remarkably strong linear relationship between these seemingly disparate variables. While we wield our statistical

compass and sextant, we observed an r-squared value of 0.8175573, indicating that approximately 81.76% of the variation in 'Titanic' search activity can be explained by changes in air pollution levels. We also calculated a p-value of less than 0.01, which further reinforces the robustness of the discovered link.

The aptly named Figure 1, which we have chosen not to place on a pedestal (because it might develop a fear of heights), depicts a scatterplot showcasing the compelling correlation between air pollution and 'Titanic' search volumes. This visual representation paints a portrait so vivid that even the most seasoned sailor would find it hard to resist a second glance.

In summary, the results of this investigation illustrate a significant association between air pollution in Milwaukee and the public's interest in the oceanic tragedy of the 'Titanic'. This intriguing finding raises a veritable tidal wave of questions about the intricate interplay between environmental factors and online search behavior and beckons for further exploration into the depths of this unexpected connection.

Figure 1. Scatterplot of the variables by year

5. Discussion on findings

The results of our investigation underscore the compelling relationship between air pollution in Milwaukee and Google search activity for the term 'Titanic'. Our findings provide empirical support for the curious speculations put forth by Smith and Doe's (2015) seminal work on the influence of atmospheric quality on internet search trends. It seems our statistical expedition has navigated the murky waters of environmental impact on virtual voyages of knowledge, arriving at a convergence with the pioneering research that set sail in this enigmatic domain.

While the notion of air pollution setting the stage for increased interest in a historic maritime disaster may initially appear as far-fetched as a tall tale spun by a salty sea

captain, our results reveal a solid statistical anchor to this proposition. Jones and Smith's (2019) exploration of air pollution's influence on search behavior now finds reaffirmation in our own study, as the waves of correlation between atmospheric conditions and online query patterns wash ashore in our findings. Their insightful revelations, akin to treasures gleaming under the moonlit statistical sea, have guided our own expedition toward a richer understanding of this enthralling relationship.

As we reflect on the seemingly incongruous connection between air pollution and 'Titanic' searches, the words of Brown and Williams (2017), in their captivating analysis of the enduring allure of the maritime tragedy, echo with newfound relevance. Like a compass pointing steadfastly toward uncharted statistical territories, their exploration of the societal fascination with the 'Titanic' saga foreshadowed the unexpected convergence of air pollution and online inquisition that we have unveiled.

In this era of data-driven exploration, our findings serve as yet another drop in the statistical ocean, adding depth to the growing body of knowledge surrounding the influence of environmental factors on online engagement. The age-old adage of "digging for gold" in data has taken on a new twist – we seem to have stumbled upon a statistical treasure trove at the intersection of Milwaukee's air pollution and public interest in the 'Titanic' saga.

Our research uncovers a rich seam of statistical significance, inviting fellow scholars to embark on their own voyages of inquiry into the enigmatic realm of environmental influence on virtual exploration. The allure of the 'Titanic' and the ever-present haze of air pollution have cast a compelling net, drawing us into a churning maelstrom of statistical curiosity and revealing a seamless intertwining of seemingly disparate phenomena. As we eagerly anticipate the waves of subsequent research to ripple forth from this discovery, our own scholarly ship sets a course toward untold statistical horizons, ready to unravel the mysteries that lie beyond the surface of this unexpected statistical seasaw.

6. Conclusion

In conclusion, our study has voyaged into uncharted statistical waters to unravel the enigmatic link between Milwaukee's air pollution and Google searches for the 'Titanic'. The substantial correlation coefficient of 0.9041888, akin to the Titanic's iceberg encounter, highlights the unexpected bond between atmospheric quality and public online engagements. The robust statistical findings, much like a lifeboat in a statistical storm, buoy our claim of a significant association between these seemingly incongruous variables.

While this investigation has shed light on the captivating relationship between air pollution and 'Titanic' search activity, it has also evoked a cascade of unanticipated puns and jests, just like Jack's sketching escapades aboard the ill-fated vessel. The statistical

compass and sextant, though not as glamorous as Rose's Heart of the Ocean necklace, have guided us through this unusual correlation, lighting the way for further research endeavors.

However, while our findings may titillate the statistical senses, like the suspense of the blockbuster movie, it is crucial to acknowledge the limitations of this study. Our analysis, much like the mythical depths of the ocean, cannot capture the entirety of the complex interplay between environmental factors and online behaviors. Future research may delve deeper into the nuances of this correlation, but for now, we have unearthed the hidden treasure of a statistically significant connection between Milwaukee's air pollution and the 'Titanic' on Google. Thus, we assert, like a confident captain steering his vessel, that no further research is needed in this area - we have reached the pinnacle of statistical serendipity.