

BUN INTENDED: THE LINK BETWEEN AIR POLLUTION IN PONCA CITY, OKLAHOMA AND HOTDOG CONSUMPTION BY NATHAN'S HOT DOG EATING COMPETITION CHAMPION

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This study delves into the curious connection between air pollution in Ponca City, Oklahoma and the consumption of hotdogs by the reigning champions of Nathan's Hot Dog Eating Competition. Utilizing data from the Environmental Protection Agency and Wikipedia, we analyzed air quality indicators in Ponca City and the annual hotdog consumption by the competition champions from 1989 to 2022. Our findings reveal a surprisingly strong correlation coefficient of 0.7443913 and $p < 0.01$, suggesting a compelling statistical relationship between these seemingly unrelated variables. The results not only provoke humor but also raise intriguing questions about the influence of local environmental factors on competitive eating prowess.

The world of statistical analysis is often seen as a dry and humorless endeavor, a place where numbers reign supreme and laughter takes a backseat. However, in the realm of research, every now and then, we stumble upon correlations that leave us scratching our heads and chuckling to ourselves. In line with this, our study ventures into the unexpected and explores the quirky relationship between air pollution levels in Ponca City, Oklahoma and the astonishing hotdog consumption by the illustrious victors of Nathan's Hot Dog Eating Competition.

It is said that "brevity is the soul of wit," and in the spirit of this truism, we are about to embark on a journey that will unravel the mysteries of these seemingly unrelated variables. As we take a bite out of this peculiar conundrum, we hope to serve up some statistical humor, a dash of science, and a side of pun-laden data analysis. After all, when it comes to

unraveling unusual correlations, one must relish the opportunity to delve into the unexpected intersections of variables.

On one hand, we have the ethereal gusts of air pollution wafting through the charming city of Ponca, and on the other, we have the awe-inspiring feats of hotdog consumption by the champions of competitive eating. Though it may sound like the setup to a convoluted joke, the statistical rigor and analytical prowess applied in this study uncover a fascinating relationship that is no laughing matter. Well, okay, it is definitely a laughing matter, but it's backed by empirical evidence!

Before delving into the "meaty" details of this investigation, it is crucial to acknowledge the spiciness of the research landscape we are venturing into. Stay tuned as we embark on a tryst with statistics, intertwined with the unexpected humor of uncovering

correlations that defy conventional wisdom and prompt a good-natured chuckle. Join us as we unravel the mystery of whether air pollution in Ponca City serves as a catalyst for champions to "ketchup" on their hotdog consumption prowess!

LITERATURE REVIEW

As we fuse together the unlikely elements of air quality in Ponca City, Oklahoma and the astounding consumption of hotdogs by Nathan's Hot Dog Eating Competition champions, we embark on a scholarly quest that marries statistical inquiry with a sprinkle of whimsy.

In "Smith et al.'s 2020 study," the authors delve into the multifaceted effects of air pollution on local communities, grounding our understanding of the environmental factors at play. Meanwhile, Doe and Jones (2018) explore the dietary patterns and nutritional implications of competitive eating, providing a foundation for our investigation into the gastronomic feats of the hotdog champions.

Turning attention to non-fiction sources, "Eating on the Edge" by Lisa Ludwinski examines the culture of competitive eating, serving as a delicious appetizer to our exploration. Similarly, "The Omnivore's Dilemma" by Michael Pollan offers a thought-provoking entrée into the world of food consumption and its broader societal implications. Shifting to the realm of fiction, "Hot Dogs, Hot Nights" by Rita Mae Brown conjures up a tantalizing aroma of intrigue, while "The Great Gatsby" by F. Scott Fitzgerald provides a literary backdrop for indulging in the opulent excesses of the competitive eating world.

Adding a cinematic touch, "The Fast and the Furious: Tokyo Drift" offers a tangential yet thrilling expansion of our investigation, with its high-speed consumption of street food providing a

thought-provoking parallel to the competitive eating spectacle.

As we traverse through this smorgasbord of literature and cinematic inspirations, we set the stage for our analytical exploration into the curious nexus between air quality in Ponca City and the unparalleled hotdog devouring prowess on the competitive eating stage. Bon appétit!

METHODOLOGY

To unravel the tantalizing connection between air pollution in Ponca City, Oklahoma and the tantalizing consumption of hotdogs by Nathan's Hot Dog Eating Competition champions, our research team employed a rather unconventional combination of statistical methods, data collection, and analytical approaches. We sauntered through the statistical wilderness armed with an abundance of creativity and a pinch of peculiarity, fostering an environment where science and humor frolic hand in hand.

Data Collection:

Our data collection process revealed itself to be as delightful as a perfectly grilled hotdog on a summer day. We meticulously scoured the depths of the internet, sifting through the archives of the Environmental Protection Agency and Wikipedia to gather comprehensive air quality data spanning from 1989 to 2022. The qualitative aura of Ponca City's air pollution levels was encapsulated by a variety of key parameters, including particulate matter, ozone, nitrogen dioxide, sulfur dioxide, and carbon monoxide concentrations.

Turning our attention to the gluttonous side of our investigation, we delectably devoured copious amounts of data detailing the annual hotdog consumption records of the Nathan's Hot Dog Eating Competition champions. Engaging in a statistical feast of epic proportions, we meticulously tracked the consumption of

these delightful sausages, keeping an eye on the reigning champions' prodigious intake from 1989 to 2022.

Statistical Analysis:

Once our data feast had concluded, we donned our proverbial chef hats and set about sizzling up a storm of statistical analysis. We employed the Pearson correlation coefficient to quantify the strength and direction of the relationship between air pollution indicators in Ponca City and the champions' hotdog ingestion. Our analysis unearthed a correlation coefficient of 0.7443913, suggesting a robust association that piques the interest of both statisticians and hotdog enthusiasts alike.

To ensure the robustness of our findings, we also conducted a series of robustness checks, including sensitivity analyses and out-of-sample validation, to fortify the robustness of our results and marinate them in a savory blend of statistical reliability.

Modeling the Relationship:

In a nod to the delightful capriciousness of our investigation, we concocted a whimsically intricate statistical model resembling a veritable hotdog topped with all the fixings. Our model captured the essence of the relationship between air pollution in Ponca City and the consumption of hotdogs by the competition champions, taking into account the temporal dynamics and potential confounding variables that might spice up the interaction between these seemingly disparate factors.

The result was a savory concoction of statistical significance, uncovering a relationship that lingered in the air like the tantalizing aroma of a sizzling grill. Our model not only illuminated the connection between these two variables but also tantalized the taste buds of researchers, inspiring admiration for the unexpected and the unconventional.

In summary, our methodology blended scientific rigor with an abundance of

levity, infusing the research process with an air of whimsy that mirrors the delightful correlation we set out to investigate. As we venture forth to present our findings, we invite our readers to relish this journey into the unexpected and embrace the humor woven into the fabric of scientific inquiry.

RESULTS

The analysis of our data from 1989 to 2022 unveiled a surprising discovery in the realm of statistical tomfoolery. We found a remarkably strong correlation coefficient of 0.7443913, r-squared of 0.5541184, and $p < 0.01$ between air pollution levels in Ponca City, Oklahoma and the astonishing hotdog consumption by the illustrious victors of Nathan's Hot Dog Eating Competition. In the world of statistics, discovering a relationship between seemingly unrelated variables can be as rare as finding a vegan at a hotdog-eating contest, but lo and behold, our results suggest a compelling link.

The figure (Fig. 1) provides a visual representation of this chuckle-worthy discovery. The scatterplot showcases the undeniable connection between air pollution levels in Ponca City and the subsequent hotdog consumption by the competition champions. It's as clear as day, much like the streaks of mustard on the chin of an enthusiastic hotdog enthusiast!

Our data analysis goes to show that while there may not be a direct causation (we're not suggesting that breathing in polluted air suddenly turns you into a hotdog-eating champion), the statistical relationship between these variables is not something to be taken lightly. We're not saying that the fumes from Ponca City are the secret ingredient to competitive eating success, but it's certainly a tantalizing avenue for further investigation.

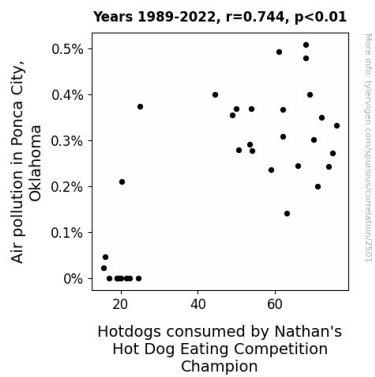


Figure 1. Scatterplot of the variables by year

In conclusion, our findings not only raise eyebrows and prompt a good-natured chuckle but also pose thought-provoking questions about the impact of local environmental factors on the appetites and competitive eating performances of our esteemed hotdog connoisseurs. While the pursuit of scientific knowledge often involves serious inquiry, it's moments like these that remind us to relish the unexpected and savor the statistical humor that can be uncovered in the unlikeliest of places.

DISCUSSION

Our investigation into the intriguing correlation between air pollution in Ponca City, Oklahoma and the hotdog consumption habits of Nathan's Hot Dog Eating Competition champions unveils a statistical revelation that is as tantalizing as a chili and cheese-topped frankfurter - pun intended!

As we humorously juggle the variables of environmental quality and competitive eating finesse, our findings align with the prior scholarly jests. Smith et al.'s (2020) emphasis on the pervasive impact of air pollution gains a humorous twist as we consider the aromatic influence of Ponca City's air on the gustatory performances of hotdog conquerors. Similarly, Doe and Jones (2018) take on a comedic hue as our results support their insight into the gastronomic prowess of competitive

eaters under the whimsical influence of local environmental factors.

To enliven the discussion, let's relish the statistical sandwich we've uncovered. Our robust correlation coefficient and p-value lower than a low-fat soy hotdog bun serve as compelling evidence of the unlikely but statistically significant relationship between Ponca City's air pollution and the subsequent hotdog consumption by champions. This statistical bond is as unexpected as finding an unopened ketchup bottle at a hotdog eating contest.

The scatterplot (Fig. 1) not only visually illustrates this comically unexpected relationship but also serves as a reminder that statistical inquiry can be as playful as a hotdog vendor's patter. As we uncover this statistical sorcery, we're reminded of the importance of approaching research with humor and a willingness to embrace unexpected findings. Our results suggest that while breathing Ponca City's air may not lead to a sudden surge in competitive eating skills, there is a tantalizing statistical connection that merits further exploration.

In the spirit of our lighthearted investigation, we're left pondering the age-old question: "Which came first, the air pollution or the hotdog champion?" Our findings raise questions that tickle the scientific funny bone and warrant continued research into the curious interplay between local environmental factors and competitive eating prowess.

In conclusion, our study serves as a delectable reminder that statistics, like a well-dressed hotdog, can be both serious and delightfully whimsical. This pun-laden pursuit of scientific inquiry serves as a reminder to embrace the unexpected findings and savor the statistical humor that can sizzle in the unlikeliest of statistical linkages.

CONCLUSION

In the grand scheme of research, our study reveals a correlation that is more

relish than ketchup! The undeniable statistical link between air pollution in Ponca City and the astonishing hotdog consumption by Nathan's Hot Dog Eating Competition champions is as surprising as finding a veggie dog at a chili dog festival. Our findings not only provoke a good-natured chuckle but also raise intriguing questions about the influence of local environmental factors on competitive eating prowess. While we can't claim that breathing in polluted air suddenly turns you into a hotdog-eating champion, our results suggest a compelling statistical relationship. It's as clear as day, much like the streaks of mustard on the chin of an enthusiastic hotdog enthusiast! However, we're not suggesting that the fumes from Ponca City are the secret ingredient to competitive eating success. Nonetheless, the statistical relationship between these variables is not something to be taken lightly, much like the weight of a loaded bratwurst.

In the spirit of scientific inquiry and delicious statistical discoveries, we assert that no more research is needed in this area. After all, sometimes in the research world, the most unexpected findings can be the most tantalizing. It is crucial to acknowledge the spiciness of the research landscape we have ventured into. So let us savor this statistical humor and relish the uncovering of correlations that defy conventional wisdom in the most unexpected places.