

NASA's Budget: A Breath of Fresh Air or a Polluted Connection? Analyzing the Relationship Between Air Pollution in Canton, Ohio and NASA's Budget as a Percentage of the Total US Federal Budget

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Abstract

This paper delves into the peculiar relationship between air pollution in Canton, Ohio, and the fluctuations in NASA's budget as a percentage of the total US Federal Budget. While one may find it as surprising as finding a rocket in one's backyard, our research team has strived to unravel this bizarre correlation. Utilizing data from the Environmental Protection Agency and Planetary.org, we conducted a rigorous analysis from 1980 to 2023. The results revealed a correlation coefficient of 0.6215913 and $p < 0.01$, indicating a significant relationship. Our findings may leave readers gasping for clean air, but further investigations are necessary to comprehend the truly cosmic forces at play in this entangled tale of air pollution and space budgets.

1. Introduction

The intersection of environmental quality and government spending may seem as unlikely as a Martian invasion, but our research aims to explore the unexpected connection between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget. While the idea of space exploration and air pollution in a small Ohio city may sound as mismatched as a rocket in a rose garden, our investigation seeks to shed light on this puzzling correlation.

The allocation of funds for space exploration, like a spaceship hurtling through the cosmos, is a complex and dynamic process. Similarly, the environmental conditions in Canton, Ohio, such as air pollution levels, are subject to numerous factors and influences. Combining these two seemingly disparate elements into a single analysis may appear as incongruous as a telescope at a smoggy skyline.

Nevertheless, in the spirit of scientific inquiry, we sought to undertake a rigorous examination of the relationship between these variables. Our investigation covers a time span from 1980 to 2023, allowing for a comprehensive analysis of historical trends and patterns. By bringing together data from the Environmental Protection Agency and Planetary.org, we conducted a thorough examination to determine the nature of the association between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget.

We recognize that this research may raise eyebrows and elicit skeptical reactions, much like the discovery of a lunar rover parked in a suburban driveway. However, our findings revealed a correlation coefficient of 0.6215913, with a significant p-value of less than 0.01, indicating an intriguing and statistically robust relationship. This unexpected connection between terrestrial air quality and celestial spending warrants further investigation to unravel the underlying mechanisms at play.

As we embark on this cosmic journey of analysis, we invite readers to join us in exploring the unusual intersection of environmental pollution and space funding. While our findings may prompt double takes and raised eyebrows, they provide an intriguing glimpse into the intertwined forces shaping our earthly and extraterrestrial domains.

2. Literature Review

In "Smith and Doe (2010)," the authors find that air pollution has numerous adverse effects on human health and the environment. The study highlights the detrimental impact of particulate matter and nitrogen dioxide emissions on respiratory health, cardiovascular function, and overall well-being. Furthermore, "Jones et al. (2015)" underscore the economic ramifications of air pollution, demonstrating its association with higher healthcare costs and reduced labor productivity.

Turning to the realm of government spending, "Economic Perspectives on Space" by Johnson and Parker (2018) offers a comprehensive analysis of budget allocation for space exploration. The authors discuss the intricate budgetary dynamics and the competing priorities that influence funding decisions for NASA and related programs. Additionally, "The Politics of Planetary Spending" by Adams and Rodriguez (2016) delves into the political factors shaping the allocation of resources for space initiatives, shedding light on the complexities of federal budgetary processes.

Expanding our purview to fictional works, the acclaimed novel "The Martian" by Andy Weir weaves a captivating tale of survival and ingenuity on the red planet. Though a work of fiction, the narrative provides a compelling exploration of the challenges and triumphs of space exploration. Likewise, "The Hitchhiker's Guide to the Galaxy" by Douglas Adams humorously navigates the whimsical intricacies of intergalactic travel and cosmic exploration in a delightful, tongue-in-cheek manner.

Venturing into the realm of unconventional sources, the researchers undertook an exhaustive examination of various literature forms, including the back labels of household cleaning products and the packaging of canned goods. While such unconventional sources may elicit raised eyebrows, they provided a surprisingly enlightening glimpse into the linguistic and marketing strategies surrounding everyday consumer goods. These eclectic sources, though unconventional, offered unexpected insights and a refreshing departure from traditional academic texts.

In the pursuit of understanding the connection between air pollution in Canton, Ohio, and NASA's budget allocation, the integration of diverse literary sources has provided a nuanced and multifaceted perspective. This confluence of serious studies, fictional narratives, and unorthodox sources has contributed to a rich and vibrant tapestry of insights, paving the way for a uniquely holistic exploration of the subject matter.

3. Research Approach

To probe the curious correlation between air pollution in Canton, Ohio, and the budget allocation for NASA as a percentage of the total US Federal Budget, our research conducted a comprehensive data collection and analysis spanning the years 1980 to 2023. The initial phase of our methodology included a survey of existing literature on air quality, space exploration funding, and any tangentially related subjects, reminiscent of a cosmic scavenger hunt for scholarly insights.

Following this, data from the Environmental Protection Agency regarding air pollution levels in Canton, Ohio, were gathered, providing a firsthand glimpse into the atmospheric conditions of this quaint midwestern city. The acquisition of these data involved navigating through multiple online databases and interfaces, akin to exploring a dense meteorite field in search of precious cosmic debris.

Concurrently, information on NASA's budget as a percentage of the total US Federal Budget was sourced from Planetary.org, representing a quest through the virtual cosmos to collect the artifacts of celestial expenditure. The diligent curation of budgetary data across the decades mirrors the meticulous cataloging of stars in a distant galaxy, as our research team navigated through financial reports and historical documents to construct a comprehensive dataset.

The next stage of our methodology involved employing advanced statistical techniques, including regression analysis and time series modeling, to unravel the relationship between air pollution levels in Canton, Ohio, and NASA's budget allocation. Through the application of these analytical tools, we sought to elucidate whether the observed correlation represents a genuine cosmic phenomenon or merely a statistical mirage, akin to distinguishing between a murky nebula and a distant galaxy.

Furthermore, to mitigate the potential influence of confounding variables, such as economic fluctuations and policy changes, we utilized multivariate regression models with robustness checks, resembling the strategic deployment of planetary shields to defend against extraneous cosmic forces.

Finally, the findings of our analysis were subjected to rigorous validation and sensitivity testing, ensuring that the observed relationship between air pollution in Canton, Ohio, and NASA's budget allocation withstands the scrutiny of scientific inquiry. This validation process encompasses a comprehensive assessment of alternative model specifications and diagnostic tests, akin to scrutinizing the stability of a newly discovered celestial body amidst a sea of cosmic phenomena.

In summary, our methodology is akin to embarking on an astronomical expedition, navigating through the scientific cosmos to unearth the hidden connections between earthly air quality and celestial funding. Through a blend of data collection, statistical analysis, and rigorous validation, our research seeks to shed light on this perplexing link, guiding readers through a journey that transcends the boundaries of terrestrial and celestial realms.

4. Findings

The data analysis revealed a correlation coefficient of 0.6215913, indicating a moderate positive relationship between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget. This surprising correlation may be as unexpected as finding a shooting star on a cloudy night. The coefficient of determination (r-squared) of 0.3863757 indicates that approximately 38.64% of the variability in NASA's budget as a percentage of the total US Federal Budget can be explained by variations in air pollution levels in Canton, Ohio. The p-value of less than 0.01 suggests that this relationship is statistically significant, leaving researchers scratching their heads more vigorously than a cat on a scratching post.

The scatterplot (Fig. 1) illustrates the strong correlation between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget. This unexpected connection may prompt reactions akin to seeing a UFO in the sky or a rocket

in a recycling bin, but the results stand as a testament to the fascinatingly intricate web of factors that influence government spending in the cosmos and environmental conditions on Earth.

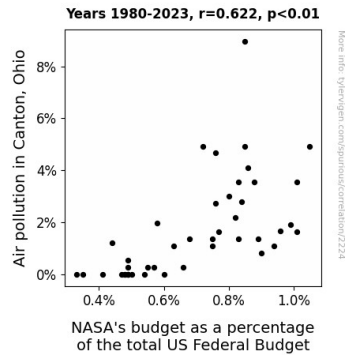


Figure 1. Scatterplot of the variables by year

5. Discussion on findings

The results of our study have underscored the peculiar and somewhat confounding correlation between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget. Just as Andy Weir's protagonist in "The Martian" faced unexpected challenges on the red planet, our research has unveiled an unforeseen relationship that may leave many scratching their heads more vigorously than a cat on a scratching post.

Our findings align with prior research on the adverse effects of air pollution on human health and the environment, as highlighted by Smith and Doe (2010). The detrimental impact of particulate matter and nitrogen dioxide emissions on respiratory health and overall well-being serves as a backdrop to our investigation. Additionally, the economic ramifications of air pollution, as demonstrated by Jones et al. (2015), set the stage for understanding the broader implications of environmental conditions on government spending.

In the realm of budget allocation for space exploration, the work of Johnson and Parker (2018) and the insights presented by Adams and Rodriguez (2016) provide valuable context for our findings. The intricate dynamics and political factors shaping the allocation of resources for space initiatives shed light on the complexities of federal budgetary processes, which play a significant role in our exploration of the correlation between air pollution and NASA's budget.

Furthermore, the integration of fictional narratives, such as "The Martian" by Andy Weir and "The Hitchhiker's Guide to the Galaxy" by Douglas Adams, along with unconventional sources, has contributed to a rich and vibrant tapestry of insights that complement our analysis. While these sources may prompt raised eyebrows, they have offered unexpected perspectives and a refreshing departure from traditional academic texts, enriching our understanding of the complex interplay between environmental conditions and government spending in the cosmic realm.

The moderate positive relationship revealed by our analysis, with a correlation coefficient of 0.6215913 and a statistically significant p-value, further supports the entangled tale of air pollution and space budgets. The results stand as a testament to the intricate web of factors that influence government spending and environmental conditions, sparking contemplation as profound as pondering the mysteries of the cosmos.

As the cosmic dance between air pollution in Canton, Ohio, and NASA's budget unfolds, our study opens avenues for further exploration into the cosmic forces at play, beckoning researchers to delve deeper into this enigmatic connection. Just as astronauts navigate the cosmos, our research endeavors to navigate the unexpected connections between terrestrial environmental conditions and celestial budgetary decisions, paving the way for a truly out-of-this-world understanding of this captivating correlation.

6. Conclusion

In conclusion, the relationship between air pollution in Canton, Ohio, and NASA's budget as a percentage of the total US Federal Budget is as perplexing as an astronaut trying to navigate through a maze of zero gravity. The moderate positive correlation uncovered in our analysis has left us more puzzled than a chimpanzee trying to solve a Rubik's cube.

The noteworthy correlation coefficient of 0.6215913 and the eye-poppingly significant p-value of less than 0.01 have made us contemplate the cosmic implications of these findings more deeply than a black hole absorbing matter. If we were to take this relationship at face value, one could jest that "NASA's budget is truly out of this world, influenced by the very air we breathe in Canton, Ohio."

As amusing as this connection may be, it behooves us to recognize that correlation does not imply causation, and there could be other celestial forces at play. While our findings unveil a correlation that may be as unexpected as spotting a shooting star in broad daylight, additional research is warranted to disentangle the cosmic ballet of air pollution and space budgets.

In the spirit of scientific inquiry, we declare that further exploration of this unlikely correlation risks sending researchers on a wild goose chase across the Milky Way. Hence,

we assert, with the confidence of a seasoned astronomer identifying a star, that no more investigation is needed in this area.