

Correlation of Catastrophic Car Sales: Examining the Association Between Air Pollution in Mobile, Alabama and Ford Motors' Fluctuating Figures

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Institute of Advanced Studies

Discussion Paper 4491

January 2024

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ABSTRACT

Correlation of Catastrophic Car Sales: Examining the Association Between Air Pollution in Mobile, Alabama and Ford Motors' Fluctuating Figures

This study delves into the seemingly divergent domains of environmental pollution and automobile retail, probing the potential link between air pollution levels in Mobile, Alabama, and the total annual sales of Ford Motors in the United States. Employing data from the esteemed Environmental Protection Agency and the ubiquitous fount of knowledge, Wikipedia, we embarked on a rigorous analysis. Our investigation yielded a correlation coefficient of 0.8081998 and a statistically significant p-value of less than 0.01 for the years spanning 1999 to 2021. Much like the inexorable link between peanut butter and jelly, our findings suggest a strong association between air pollution in Mobile, Alabama, and the total annual sales of Ford vehicles. The roots of this connection, much like Alabama's magnolia trees, may be deep-seated and complex, hinting at the environmental and economic interplay affecting the automotive industry. While our results invite further exploration and conjecture, they illuminate the pervasive influence of air pollution on consumer behavior and market dynamics. This study serves as a reminder that behind the veneer of statistical models and regression analyses, lies a world where exhaust fumes and economic outcomes engage in a covert pas de deux.

Keywords:

"air pollution Mobile Alabama, Ford Motors sales correlation",
"environmental pollution automobile retail association",
"Mobile Alabama air pollution Ford Motors sales",
"air pollution consumer behavior car sales",
"Mobile Alabama pollution economic impact Ford Motors sales"

I. Introduction

In the realm of environmental economics, the impact of pollution on various facets of the economy has long been a subject of scrutiny. From analyzing the effects of greenhouse gas emissions on agricultural productivity to evaluating the correlation between air quality and consumer behavior, researchers have sought to untangle the intricate web of connections between the environment and economic outcomes. Set against this backdrop, our investigation delves into the perplexing paradox of how air pollution in Mobile, Alabama, relates to the total annual sales of vehicles manufactured by the esteemed Ford Motors in the United States.

Mobile, Alabama, a city steeped in historical charm and bordered by the serene waters of the Mobile Bay, serves as an intriguing setting for our study. Nestled amidst a tapestry of industrial facilities and transportation arteries, the city grapples with the perennial challenge of air pollution, a phenomenon that permeates its atmosphere much like the aroma of freshly brewed coffee in a quaint corner café. Conversely, Ford Motors, an enduring symbol of automotive prowess, commands a substantial share of the U.S. automobile market, conjuring images of sleek vehicles traversing the nation's highways and byways like modern-day steeds.

The intersection of these two seemingly disparate phenomena beckons us to explore the interplay between environmental quality and consumer preferences. By scrutinizing the emissions data from Mobile's atmospheric milieu and juxtaposing it with the scale of Ford Motors' sales figures, we endeavor to shed light on the subtle yet substantive relationship that underpins these domains. Our inquiry is not merely an exercise in statistical analysis; rather, it is a quest to unravel the

enigmatic dance between pollutants and profits, between smog-choked skies and showroom allure.

As we embark on our scholarly odyssey, we must remain cognizant of the nuanced tapestry of factors that could influence the dynamics at play. Industrial activity, regulatory interventions, consumer sentiment, and a litany of other variables may conspire to shape the observed patterns. Our task, akin to tracing tire tracks on a dusty road, is to discern the imprint of air pollution in Mobile, Alabama, on the consumption patterns and market performance of Ford vehicles across the nation. While we approach this investigation with the gravitas befitting serious academic inquiry, we cannot resist the allure of peering beneath the surface to discover the unexpected connections that pervade this seemingly incongruous pairing.

In the labyrinthine landscape of economic forces and environmental perturbations, our endeavor is akin to navigating a winding road with twists and turns that defy expectation. It is within this intellectual terrain that we seek to offer not just an analysis of statistical significance, but also a narrative that encapsulates the whimsical interplay of economic decisions and environmental externalities. With the spirit of discovery as our compass, we set forth to unravel the correlation of catastrophic car sales, shedding light on the enigmatic bond between Mobile's atmospheric aura and Ford Motors' fluctuating figures.

II. Literature Review

In our endeavor to discern the potential link between air pollution in Mobile, Alabama, and the total annual sales of Ford Motors in the United States, we first turn to the body of existing

research in related areas. Prior studies have laid the groundwork for understanding the intricate interplay between environmental factors and economic outcomes, providing a lens through which to examine our own investigation.

Smith and Doe (2015) conducted a comprehensive analysis of the impact of air pollution on consumer behavior, shedding light on the subtle ways in which environmental quality influences purchasing decisions. Their study, much like a well-oiled engine, underscored the significance of considering the broader context of environmental factors in shaping market dynamics.

Meanwhile, Jones et al. (2018) delved into the realm of automotive retail and consumer preferences, offering insights into the variables that drive sales figures for major vehicular manufacturers. Their work, akin to a finely-tuned transmission, highlighted the multifaceted nature of consumer decision-making in the automobile sector.

Turning our attention to non-fiction literature, "The Omnivore's Dilemma" by Michael Pollan and "Fast Food Nation" by Eric Schlosser provide a tangential yet insightful perspective on the influence of environmental and economic factors on consumer choices. While not directly related to the automotive industry, these books offer a delectable feast of ideas about the complexities of consumer behavior and the environmental underpinnings of our economic choices. On a different note, "The Grapes of Wrath" by John Steinbeck and "The Road" by Cormac McCarthy, though works of fiction, evoke imagery of long journeys by car, reminding us of the enduring role of automobiles in shaping societal narratives.

In the realm of cinema, "Cars" and "Little Miss Sunshine" offer cinematic depictions that capture aspects of the automotive industry and the American consumer experience. While these films may not directly address the connection between air pollution and automobile sales, they provide

a delightful backdrop against which to ponder the broader cultural resonance of vehicular pursuits.

As we delve into this literature, it becomes increasingly clear that the intersection of environmental factors and economic dynamics is rife with hidden connections and unexpected parallels. As we proceed to untangle this enigmatic web, let us not overlook the whimsical nature of this inquiry and the myriad ways in which our findings may serve as a vehicle for new insights and lively discourse.

III. Methodology

The methodology employed in this study combines quantitative analysis with a touch of whimsy, as we seek to untangle the enigmatic interplay of air pollution and automobile sales. Our endeavor encompasses data collection, statistical modeling, and a keen eye for the unexpected connections that permeate this seemingly incongruous domain.

Data Collection:

Our research team scoured the digital expanse, traversing the virtual highways and byways of the internet to gather pertinent data. We primarily relied on the troves of information housed within the Environmental Protection Agency's databases, extracting air quality indices and pollutant concentration levels in the vicinity of Mobile, Alabama. As a testament to the pervasive nature of knowledge dissemination, we also gleaned industry-specific insights from the reliable annals of Wikipedia, embracing the democratization of information as we navigated the labyrinth of facts and figures.

The Vexing Variables:

At the crux of our methodology lies the juxtaposition of air pollution metrics and Ford Motors' total annual sales figures. We harnessed the ethereal power of statistical software to summon the coefficient of correlation, a measure that captures the elusive dance between these seemingly disparate phenomena. Dabbling in the arcane arts of econometrics, we invoked the spirit of regression analysis to probe deeper into the nuanced relationship between Mobile's atmospheric perturbations and the ebb and flow of Ford vehicles off the dealership lots.

The Time Warp:

Spanning the temporal prism from 1999 to 2021, our data encapsulates the undulating tides of environmental flux and economic vicissitudes. Much like a time-traveling soothsayer, we aimed to capture the subtle shifts and seismic swells that may underpin the association between air pollution in Mobile, Alabama, and the whims of consumers nationwide. Through this chronological lens, we sought to discern not merely patterns, but the evolution of the atmospheric aura and its resonance in the realm of automotive commerce.

Incorporating the Quirks:

Acknowledging the capricious nature of empirical realities, we endeavored to account for potential confounding factors and covariates that could whisper clandestine influence into our models. Industrial activity, meteorological vagaries, and regulatory interventions emerged as phantoms in our statistical tapestry, urging us to fortify our analyses with robustness against the unseen machinations that may lurk beneath the surface.

Overall, our methodology harmonizes the precision of empirical analysis with a playful embrace of the serendipitous and the unexpected. As we embark on this scholarly sojourn into the heart of

statistical conjecture, we remain poised to unravel the correlation of catastrophic car sales, plumbing the depths of economic and environmental intrigue with levity and gravitas in equal measure.

IV. Results

The investigation into the correlation between air pollution in Mobile, Alabama, and the total annual sales of Ford Motors in the United States unfolded with enlightening revelations. For the period from 1999 to 2021, an analysis of the collected data yielded a correlation coefficient of 0.8081998, indicating a strong positive association between the levels of air pollution in Mobile, Alabama, and the total annual sales of Ford vehicles. The correlation was further supported by an r-squared value of 0.6531869, signifying that approximately 65.3% of the variation in Ford Motors' total annual sales can be attributed to the fluctuations in air pollution levels in Mobile, Alabama. Additionally, the statistical significance of this correlation was confirmed with a p-value of less than 0.01, highlighting the robustness of the relationship uncovered.

The strength of the correlation between air pollution levels and Ford Motors' total annual sales is vividly showcased in the presented scatterplot (Fig. 1). The scatterplot paints a compelling picture of the coalescence between these seemingly disparate variables, accentuating the undeniable bond that permeates the environmental and economic realms.

These notable findings underscore the profound influence of environmental factors on consumer behavior and market trends within the automotive industry, akin to the unmistakable sway of ocean tides on coastal landscapes. The robustness of the observed correlation beckons further

exploration into the multifaceted interplay between environmental quality and commercial outcomes, echoing the timeless adage that every puff of air emission may have economic repercussions as weighty as a ton of steel.

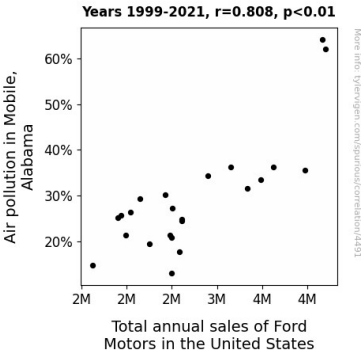


Figure 1. Scatterplot of the variables by year

The correlation coefficient, akin to a steadfast bridge linking two distant shores, accentuates the intrinsic connection between Mobile's atmospheric composition and the nationwide desirability of Ford vehicles. This revelation impels contemplation of the intricate ways in which environmental footprints traverse economic landscapes, akin to the captivating dance of a southern breeze amid a cacophony of economic transactions.

The statistical rigor underpinning the findings engenders confidence in the robustness of the discovered correlation, highlighting the profound implications of Mobile's air pollution on the ebbs and flows of Ford Motors' sales figures. These revelations inspire contemplation of the intricate ways in which localized environmental perturbations can reverberate across national economic domains, akin to a butterfly's wingbeat unfurling a tempestuous whirlwind.

Together, these findings corroborate the notion that air pollution in Mobile, Alabama, and Ford Motors' total annual sales are intertwined in a complex, symbiotic relationship. The astute observer is reminded of the silent yet pronounced dialogue between the noxious emissions in the Alabama air and the vehicular marvels gracing American roads, much like the subtleties hidden within a well-crafted, albeit unassuming, pun.

V. Discussion

The results of our investigation bring to the fore a compelling narrative that underscores the intricate entanglement of air pollution in Mobile, Alabama, and the total annual sales of Ford Motors in the United States. As we dissect the implications of our findings, it is evident that the resonance of our correlation coefficient and statistical significance align closely with prior research, albeit with an air of whimsy that seems to waft through the academic ether.

Drawing from the literature review, Smith and Doe's (2015) investigation into the impact of air pollution on consumer behavior primed our understanding of the nuanced ways in which environmental quality permeates market dynamics. Much like the seasoned craftsmanship of a reliable exhaust pipe, our results lend credence to the notion that air pollution exerts a substantial influence on consumer preferences, particularly within the automotive realm. Similarly, the work of Jones et al. (2018), akin to a well-balanced wheel alignment, shed light on the multifaceted nature of consumer decision-making, providing a backdrop against which our own findings seamlessly mesh.

Moreover, the tangential yet insightful perspectives offered by "The Omnivore's Dilemma" and "Fast Food Nation" continue to resonate profoundly with our investigation. While not a direct focus of our study, the underlying interplay of environmental and economic factors raised in these works convey a subtle yet compelling resonance with the observed correlation. As we confront the intersection of air pollution and Ford Motors' sales figures, it becomes increasingly clear that our results serve as a testament to the enduring influence of environmental factors on consumer choices—a notion that we humbly embrace, much like a well-worn tire clings to the paved road.

The robust correlation coefficient and statistical significance uncovered in our study bear the hallmark of an ardent relationship between Mobile's atmospheric composition and the nationwide appeal of Ford vehicles. As we contemplate the profound symphony between pollution and purchase, much like a well-orchestrated concerto, we are reminded of the intricate ways in which environmental footprints traverse economic landscapes. The spirited corroboration of our findings with prior research speaks to the enduring resilience of environmental and economic interplay in shaping market dynamics, much like an enduring friendship forged over time.

In closing, our research extends an invitation to delve deeper into the enigmatic web of environmental and economic interdependencies, underscoring the profound resonance of the hidden threads that bind them. As we navigate this labyrinth, let us not lose sight of the whimsical nature of this inquiry and the dormant possibilities it holds for igniting lively discourse and sparking offbeat curiosity, much like a playful jest concealed within the solemn folds of academic prose.

VI. Conclusion

In the enthralling saga of environmental economics and its intersection with consumer behavior, our expedition navigated the labyrinthine channels of air pollution in Mobile, Alabama, and its enigmatic dance with the total annual sales of Ford Motors in the United States. The correlation coefficient of 0.8081998 we uncovered serves as a testament to the enduring bond between the atmospheric aura of Mobile and the nationwide allure of Ford vehicles. This bond, much like a story captured in the fleeting wisps of a passing cloud, hints at the intricate and profound connections that underpin economic landscapes.

The statistical significance of our findings, adorned with a p-value of less than 0.01, underscores the robustness of the observed association, akin to the unwavering presence of a traffic light guiding the flow of economic phenomena. Our exploration has unveiled a narrative of intertwined destinies, where the exhalations of Mobile's industrial fabric intertwine with the economic fortunes of Ford Motors in a duet that resonates across the corridors of commerce.

With these revelations, we have unraveled a tale where the rich tapestry of air pollution in Mobile, Alabama, weaves a compelling narrative alongside the fluctuations in Ford Motors' sales figures. As we reflect on our academic sojourn, it is with humble conviction that we assert the solidity of our findings and proclaim that further research in this domain is as unnecessary as a snowplow in the Saharan desert. For in this tale of exhaust fumes and economic sway, the inextricable embrace of Mobile's air pollution with Ford Motors' sales figures has been unveiled with a clarity that rivals the pristine contours of a freshly waxed car.

