# The Jet Set: Exploring the Connection Between Libertarian Votes in Michigan and Jet Fuel Consumption in Cambodia

Chloe Harris, Addison Tanner, Gloria P Tillman

Chapel Hill, North Carolina

This paper investigates the seemingly unrelated yet curiously intertwined relationship between the level of Libertarian votes for Senators in Michigan and the amount of jet fuel used in Cambodia. By utilizing data from MIT Election Data and Science Lab, Harvard Dataverse, and the Energy Information Administration, we applied statistical analysis to scrutinize this curious connection. Our findings revealed a striking correlation coefficient of 0.9359837 with a significance level of p < 0.01 for the period spanning 1995 to 2014. The unexpected entanglement of these variables prompts a closer examination, shedding light on the vibrant and unpredictable nature of political and environmental data. This study underscores the need for interdisciplinary exploration, recognizing that statistical relationships can bring unexpected surprises akin to uncovering a hidden treasure trove.

Anecdotal connections often bewilder researchers, akin to finding a match in a haystack, or perhaps, a jet in a haystack. Against this backdrop, we aim to delve into the curious correlation between Libertarian votes for Senators in Michigan and the consumption of jet fuel in Cambodia. While on the surface, these variables may appear as disparate as a Republican in a sea of Democrats, our preliminary analysis has unveiled an unexpected link that is as surprising as discovering a statistical unicorn.

As researchers, we are constantly urged to meaningful relationships unearth amidst the labyrinth of data, akin to deciphering a P-value puzzle or untangling a covariate conundrum. With the aid of data from MIT Election Data and Science Lab, Harvard Dataverse, and the Energy Information Administration, we have embarked on a statistical voyage to discern the entwined nature of these unforeseen bedfellows. Our endeavor is akin to being detectives of data, seeking to untangle the

web of statistical intrigue that has cast its spell on these seemingly incongruous variables.

The symmetry between electoral choices in the Great Lakes State and the consumption of aviation fuel in Southeast Asia prompts a medley of curious questions and eyebrow-raising interpretations, akin to a rollercoaster ride through a statistical carnival. This investigation, therefore, promises to be as enlightening as uncovering a hidden dataset gem, and as intriguing as stumbling upon a statistical eureka moment.

Together, we embark on this academic journey to highlight the capricious and capacious nature of data relationships, recognizing that within the statistical sea of variables, unexpected connections can emerge like undiscovered scientific species. This study serves as a testament to the serendipitous wonders of statistical exploration, where the threads of correlation weave a compelling narrative, akin to uncovering a random forest amidst the empirical undergrowth.

## LITERATURE REVIEW

A multiplicity of studies have delved into the realm of political behavior and environmental impact, though few have ventured into the intriguing territory that lies at the intersection of Libertarian votes in Michigan and jet fuel consumption in Cambodia. Smith et al. (2012) explored the sociopolitical dynamics of voting patterns in the Great Lakes region, while Doe (2014) investigated the nuances of energy consumption in Southeast Asia. Jones and colleagues (2017) delved into the economic implications of third-party votes in U.S. Senate elections, providing a foundation for understanding the political landscape in which the Libertarian Party operates.

As we venture deeper into the literature on unrelated and obscure correlations, it is prudent to consider the wider expanse of knowledge that may bear upon our seemingly peculiar inquiry. In "Liberty and Energy: The Unlikely Affair" (2015), the authors draw parallels between political ideologies and environmental policy, offering a poignant analysis of the interplay between libertarian values and energy usage. "The Air and the Unfettered Mind" (2016) provides а philosophical reflection on the impact of air travel on human consciousness, presenting a series of metaphors that may offer insights into the enigmatic relationship between senatorial votes and jet fuel.

Addendum to the discourse encompasses fictitious narratives that, nonetheless, convey a semblance of relevance to our esoteric pursuit. In "Wings of Political Liberty" (2000), the protagonist navigates a world where political affiliations determine access to aviation fuel, capturing the essence of our investigation in an allegorical tapestry. Similarly, "The Cambodian Candidate" (2012) weaves a tale of electoral intrigue amid a backdrop of international fossil fuel trade, offering a fictive representation of the enigmatic relationship manifest in our statistical foray. Moreover, the broader cultural landscape has not been void of cinematic expressions that, while not directly addressing our research question, bear semblance to the tangential themes therein. "Flying High: Detroit to Phnom Penh" (1999) offers a cinematic interpretation of the unexplored web of transcontinental travel, as seen through the lens of interpersonal connections rooted in the political ethos of the times. Similarly, "The Libertarian Jet Set" (2013) provides a satirical perspective on the intersecting worlds of political agency and global aviation, underscoring the humorous undertones that often accompany the seemingly juxtaposed subjects of our inquiry.

In the reflective pursuit of understanding the perplexing association between seemingly unrelated variables, it is imperative to recognize the broader scholarly and creative milieu, which, by virtue of its diversity, brings to light unexpected resonances and idiosyncrasies. Thus, as we lay the groundwork for further explorations, we recognize the potential for interdisciplinary engagement in untangling the obscure, the unexpected, and the statistically peculiar.

## METHODOLOGY

The methodology for this investigation involved a kaleidoscope of statistical techniques and data analysis methods, akin to peering through the lens of a research microscope, with curiosity as our guide and statistical significance as our compass. To begin this scientific odyssey, we embarked on a quest for data from the MIT Election Data and Science Lab, Harvard Dataverse, and the Energy Information Administration, akin to navigating a labyrinth in search of the lost city of R-squared.

Our first step, akin to the stepping stones of a statistical river, involved the collection of electoral data regarding Libertarian votes for Senators in Michigan from the chasms of the internet. Simultaneously, we extracted the voluminous information on jet fuel consumption in Cambodia from the Energy Information Administration, a task resembling deciphering hieroglyphics from the statistical pyramids of data repositories.

Once these datasets were compiled, we embarked on a statistical voyage, akin to navigating treacherous statistical waters with the statistical stars as our guide, towards the harbor of correlation. Utilizing the time series analysis approach, we sought to encapsulate the temporal dynamics of both the electoral choices in Michigan and the consumption of jet fuel in Cambodia, peppering our statistical arsenal with autoregressive integrated moving average (ARIMA) models, a statistical savoir-faire that can untangle the enigmatic dance of time series data.

To further enrich our statistical landscape, we employed Granger causality tests, a potent tool in unlocking the causal relationship between the two variables, akin to uncovering the elusive key to a statistical treasure chest. We meticulously scrutinized the statistical significance of the findings, mindful of the potential pitfalls lurking within the statistical matrix, akin to tiptoeing through a statistical minefield.

Moreover, we augmented our analysis with a crossspectral coherence examination, a method resembling a symphonic performance where the harmonious statistical melodies of Libertarian votes and jet fuel consumption intertwined, culminating in a statistically-charged symphony of unanticipated correlation.

In parallel, we conducted a state-space modeling analysis, akin to navigating through the statistical cosmos, capturing the latent states of these variables and the complex interplay between Michigan's political milieu and Cambodia's jet fuel demands. This approach allowed us to unravel the hidden narrative woven within the statistical tapestry, akin to decrypting statistical hieroglyphs etched on the walls of empirical temples.

Finally, we validated the robustness of our findings through Monte Carlo simulations, a statistical ensemble of fictional journeys through a simulated landscape, guiding us through the labyrinth of statistical truth. This comprehensive methodology ensured that our exploration of the connection between Libertarian votes in Michigan and jet fuel consumption in Cambodia was anchored in robust statistical rigour, akin to constructing a statistical lighthouse to illuminate the murky waters of variable entwinement.

## RESULTS

In our quest to unravel the mystical entanglement between Libertarian votes for Senators in Michigan and jet fuel consumption in Cambodia, we discovered a remarkable correlation coefficient of 0.9359837, with an r-squared of 0.8760655, and a p-value of less than 0.01. This robust correlation emerged as quite the statistical jackpot, akin to stumbling upon a treasure trove of data amidst the statistical wilderness.

The sheer strength of the relationship between these seemingly disparate variables is as surprising as finding a needle in a haystack made entirely of statistical significance. It's as if the Statistical Fairy waved her magic wand over these data points, producing a remarkable dance of correlation that leaves even the most seasoned statisticians bewildered.

To visually encapsulate the extraordinary connection we unearthed, we provide Figure 1, a scatterplot that graphically portrays the strong and undeniable relationship between the level of Libertarian votes in Michigan and iet fuel Cambodia. consumption in This visual representation serves as a compelling testament to the unanticipated alignment of these variables, much like uncovering a rare and remarkable statistical gem within the vast expanse of data landscapes.



**Figure 1.** Scatterplot of the variables by year

The serendipitous findings of this investigation underscore the unpredictability and revelry hidden within the realm of statistical exploration. Just as a cryptic crossword puzzle can lead to unexpected revelations, so too does this exploration of the improbable correlation between political choices and environmental fuel consumption shed light on the delightful mysteries that lurk within the numerical undergrowth of statistical analysis.

## DISCUSSION

The revelatory expedition into the interconnected realms of political choices and environmental fuel consumption has yielded intriguing findings that beckon us to reassess our preconceptions and embark on a whimsical journey through the labyrinth of statistical inquiry. Our study, akin to stepping into a veritable forest of data where the trees of statistical significance hide in plain sight, not only verified but also augmented the existing discourse on the junction between Libertarian votes in Michigan and jet fuel usage in Cambodia.

Our results stand as a testament to the remarkable resilience and vibrant unpredictability of statistical relationships, much like a treasure map leading us through the uncharted territories of improbable correlation. The robust correlation coefficient we unearthed mirrors the awe-inducing marvel of stumbling upon a rare and exquisite gemstone in the midst of statistical rough terrain. Though initially perplexing, our findings resonate with the parallel discourse presented in "Wings of Political Liberty" (2000), where the protagonist ventures through a world where political inclinations hold sway over access to aviation fuel. This parallel narrative, though fictional, bears an uncanny resemblance to the reality unearthed by our statistical delving.

The affable dance of correlation between Libertarian votes in Michigan and jet fuel consumption in Cambodia, portrayed vividly in our scatterplot akin to a dazzling performance by statistical virtuosos, extends an invitation to set forth on further explorations into unanticipated resonances and peculiar anomalies within the tapestry of obscure statistical associations. It is as if the statistics deities themselves orchestrated this captivating liaison between variables, inviting us to marvel at the dazzling spectacle of statistical serendipity.

In conclusion, this investigation serves as a captivating whimsy testament to the that accompanies delving into the arcane recesses of statistical exploration. Much like embarking on an unexpected voyage to uncover hidden treasures, our foray into the world of seemingly unrelated variables has unraveled a tale of spellbinding interconnection. As we navigate through the uncharted waters of statistical wonder, we are compelled to embrace the delightful mysteries that lurk within the numerical undergrowth, reminding us that statistical exploration is not merely a pursuit of knowledge, but a grand, unpredictable adventure.

## CONCLUSION

In conclusion, our investigation into the seemingly fanciful yet surprisingly robust correlation between the level of Libertarian votes for Senators in Michigan and the consumption of jet fuel in Cambodia has unveiled an unexpected intertwining of these variables. The remarkable correlation coefficient of 0.9359837, coupled with a minuscule p-value, showcases a statistical marvel akin to witnessing a unicorn trotting across a scatterplot.

Much like stumbling upon an improbable equation or discovering an anomalous outlier, this study has demonstrated the enigmatic and capricious nature of statistical relationships. The unexpected coherence between political preferences in the American Midwest and jet fuel consumption in the heart of Southeast Asia serves as a compelling reminder that within the intricate tapestry of statistical data, surprises and mysteries abound.

As researchers, we are no strangers to unearthing statistical treasures amidst the empirical undergrowth, and the correlation uncovered in this study stands as a testament to the serendipitous wonders of interdisciplinary exploration. It is akin to encountering a statistical quirk that elicits both bewilderment and scholarly delight, reminiscent of uncovering a hidden dataset gem within the expansive terrain of empirical inquiry.

With these findings, we assert that further exploration into this beguiling connection between political choices and environmental factors may yield diminishing returns, much like a diminishing marginal utility curve in economic theory. Therefore, we cautiously conclude that the unexpected coherence observed in this study may stand as a statistical curiosity without necessitating further research.