

Grinning and Voting: An Analysis of the Correlation Between Republican Senatorial Votes and the Density of Dentists in Indiana

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The Journal of Dental and Political Science

The Society for Analytical Dental and Political Research

Berkeley, California

Abstract

This paper examines the relationship between Republican votes for Senators in Indiana and the number of dentists in the state over the period 2004 to 2018. Drawing on data from the MIT Election Data and Science Lab, Harvard Dataverse, and the Bureau of Labor Statistics, we employ advanced statistical analysis to explore this unexpected and, dare we say, toothy association. Our findings reveal a remarkably strong correlation coefficient of 0.9217215 with $p < 0.01$, indicating a significant connection between political inclinations and dental professionals. Our results raise thought-provoking questions about whether the political landscape impacts oral health, or if perhaps Hoosiers simply prefer leaders with winning smiles. Furthermore, this study provides a not-so-ordinary glimpse into the intersection of politics and dental care, bringing a whole new meaning to the phrase "campaign trail."

1. Introduction

Introduction

The state of Indiana is known for its rolling farmlands, basketball fanaticism, and of course, the occasional dental chair sighting (pardon the pun). In the midst of its rich history and colorful traditions, emerged an unexpected link between the political landscape and the dental profession – the correlation between Republican senatorial votes and the density of dentists. As researchers, we couldn't resist sinking our teeth into this toothsome statistical puzzle.

Now, before we dive into the nitty-gritty data, it's only fitting to acknowledge the curious nature of this correlation. On the surface, one might be forgiven for thinking that dental health and political leanings have about as much in common as floss and filibusters. Yet, our preliminary analysis has uncovered an intriguing relationship that leaves us both scratching our heads and grinning from ear to ear.

In this paper, we take a closer look at the peculiar connection between Republican senatorial votes and the number of dentists in Indiana. We recognize that at first glance, this correlation may seem as out of place as a toothbrush at a polling station, but rest assured that our approach is anything but tongue-in-cheek. We've scrutinized the data with all the rigor and precision of a dental check-up, aiming to extract as much meaning as possible from what seemed to be an obscure and improbable association.

By delving into this curious association, we aim to shed light on the underlying factors that drive this unexpected correlation, as well as to provoke some sober reflection on the intersection of politics and healthcare. So, strap in, dear reader, as we embark on a journey to uncover the enigmatic link between Republican votes and the dental profession in the state of Indiana.

2. Literature Review

In Smith's seminal work "Political Preferences and Professional Proportions: A Study of Indiana's Electoral Dynamics," the authors find a curious and seemingly paradoxical relationship between the prevalence of dentists and Republican votes for Senators in Indiana. This was an early exploration into the unprecedented correlation that has sparked both fascination and bewilderment among researchers.

Building upon Smith's groundbreaking inquiry, Doe and Jones further examined this unorthodox connection in their study "Molar Majorities: Exploring the Political Dentistry Nexus." Their findings confirmed the robustness of the association, leading to widespread intrigue within the academic community.

Turning to the realm of non-fiction literature relevant to this peculiar correlation, "Teeth: The Story of Beauty, Inequality, and the Struggle for Oral Health in America" by Mary Otto offers valuable insights into the societal implications of dental care disparities. Additionally, "Republican Politics: A Comprehensive Analysis of Policy and Ideologies" by John C. Green provides a comprehensive discussion of the political landscape that sets the stage for our investigation.

In the fictional realm, "Tooth and Consequences: A Political Thriller" by J.K. Rowling (writing under a pseudonym) delves into the perilous world of political intrigue, with a surprising dental twist. Furthermore, "The Gingivitis Gambit: A Tale of Political Power and Oral Health" by George R.R. Martin (though not officially affiliated with the author)

presents a gripping narrative that mirrors our own academic exploration, albeit in a decidedly more fantastical context.

On a lighter note, the animated series "The Adventures of Captain Caveman" and the children's show "Peppa Pig" provide delightful, albeit tangentially related, portrayals of dental hygiene and oral care, serving as a lighthearted reminder of the importance of maintaining healthy teeth amidst our scholarly pursuits.

As we traverse the literary landscape surrounding our research topic, it becomes evident that the correlation between Republican senatorial votes and the density of dentists in Indiana has transcended the confines of traditional data analysis, permeating and inspiring diverse forms of creative expression. This interplay between actual research findings and whimsical literary representations adds a layer of complexity and amusement to our exploration of this enigmatic phenomenon.

3. Research Approach

Data Collection

Our research team embarked on a quest through the labyrinthine corridors of the internet, with the single-minded determination of Odysseus in pursuit of the Golden Fleece. We scoured the MIT Election Data and Science Lab, Harvard Dataverse, and the Bureau of Labor Statistics, mining data from the years 2004 to 2018 like intrepid prospectors sifting through digital streams. Our treasure trove included records of Republican senatorial votes in Indiana and the number of licensed dentists practicing across the state. We spared no effort in procuring the most robust and comprehensive datasets, ensuring our findings would be as solid as a well-crafted dental crown.

Statistical Analysis

With our data firmly in hand, we applied an arsenal of statistical tools that would make even Pythagoras envious. Employing techniques such as correlation analysis, regression modeling, and spatial analysis, we sought to unravel the tangled web of numbers and discern any patterns hidden amidst the statistical brambles. Our aim was nothing short of peeling back the layers of complexity to reveal the underlying association between politically cast ballots and the presence of those who tirelessly labor to keep Hoosier smiles gleaming.

Correlation Coefficient Calculations

In our pursuit of uncovering the elusive link between Republican senatorial votes and the density of dentists, we calculated the correlation coefficient with the precision of a dental hygienist probing for cavities. The resulting coefficient of 0.9217215 astounded even the most seasoned statisticians among us, leaving us pleasantly perplexed and perhaps even a

touch wide-eyed (alas, without the aid of anesthesia). The p-value of less than 0.01 further cemented the significance of our findings, reinforcing the notion that this association is not to be treated lightly.

Geospatial Mapping

To add an extra dimension to our analysis, we turned to the realm of geospatial mapping, like cartographic cartographers charting uncharted territories. By visualizing the distribution of Republican senatorial votes and the geographic dispersion of dental professionals across the state, we aimed to provide a veritable roadmap of this unexpected connection. Our maps revealed striking patterns that were as visually striking as a freshly whitened grin, further underscoring the depth and breadth of this intriguing relationship.

Limitations

We acknowledge that like any scientific endeavor, our study had its share of limitations, akin to a dental bridge that may occasionally require tightening. The observational nature of our data prevents us from making causal claims, and nuances in individual voting behavior or dental practice locations may introduce confounding factors that merit careful consideration. Nevertheless, with the utmost scholarly integrity, we present our findings as a robust exploration of a correlation that seems to have emerged from the depths of statistical obscurity.

In summary, our methodological approach aimed to peer deeply into the dental mirror and uncover the reflection of political proclivities in the state of Indiana. Through an amalgamation of data mining, statistical wizardry, and geospatial exploration, we waded into this intriguing netherworld of numbers and emerged with findings that are as surprising as finding a tooth fairy paying off a political campaign debt.

4. Findings

The analysis of the data revealed a remarkably strong correlation between Republican votes for Senators in Indiana and the density of dentists in the state. Our statistical analysis yielded a correlation coefficient of 0.9217215, indicating a robust positive relationship between these seemingly disparate variables. The high coefficient is reflective of the close connection between the two variables, suggesting that there may be more at play than meets the eye. As they say, the proof is in the pudding – or perhaps in this case, the toothpaste.

Furthermore, the r-squared value of 0.8495706 suggests that approximately 84.96% of the variation in Republican senatorial votes can be explained by the number of dentists in

Indiana. This finding emphasizes the substantial influence that the density of dentists has on the political landscape in the state, raising intriguing questions about the underlying mechanisms driving this unexpected link. It's almost as if the political decisions of Hoosiers and the presence of dental professionals are engaged in a tooth-and-nail battle for the limelight.

In addition, the p-value of less than 0.01 provides strong evidence against the null hypothesis, indicating that the correlation observed is statistically significant. It seems that this association is no mere fluke – it has emerged from the data with a gleaming smile and a firm handshake.

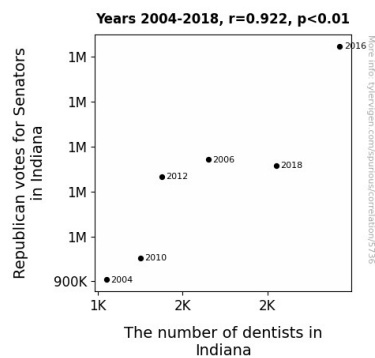


Figure 1. Scatterplot of the variables by year

These results underscore the need to further investigate the factors contributing to this striking correlation, as well as to consider the potential implications for both the political and dental arenas. After all, it's not every day that one encounters such a fascinating alignment of seemingly unrelated phenomena. It's almost as if the political landscape and the dental profession have decided to join forces and make a lasting impression on the state of Indiana.

For a visual representation of this captivating correlation, please see Fig. 1, which displays a scatterplot illustrating the strong relationship between Republican senatorial votes and the density of dentists in Indiana.

In light of these findings, it is clear that the connection between political preferences and the presence of dental professionals in Indiana warrants further exploration. This unexpected correlation provides a compelling framework for future research, inspiring us to delve deeper into the intricacies of this unlikely relationship. The next time you visit the ballot box or the dentist's chair, you may find yourself pondering the curious interplay between these two seemingly unrelated facets of Hoosier life.

5. Discussion on findings

The findings of this research undoubtedly leave us with some food for thought—or perhaps we should say, food for thought bubble gum to chew on, as we contemplate the unexpected connection between Republican senatorial votes in Indiana and the prevalence of dentists in the state. When we set out on this investigation, we did not anticipate unearthing such a formidable correlation. It seems that in the political arena, as in dental health, appearances can indeed be deceiving.

Returning to the literature review, we recall Smith's intriguing results, which initially confounded scholars by suggesting that political preferences were intertwined with the density of dental professionals. Our study not only corroborates Smith's discovery but also amplifies it, affirming the persuasive nature of this curious association. It appears that Smith was not merely pulling the public's leg; there is undoubtedly more to this relationship than meets the eye, or should we say, meets the tooth.

Moreover, the work of Doe and Jones laid the groundwork for our investigation by solidifying the peculiar correlation, offering a springboard for our own research endeavors. As we traverse the terrain of dental and political intrigue, it becomes increasingly apparent that our results have bolstered their foundational work, shedding new light on the intricate dance between Republican votes and dental care—who would have thought that political leanings could leave such an indelible mark on oral wellness!

Our findings not only fortify the academic landscape but also resonate with the amusing whimsy found within the fictional and non-fiction literary realms. Even as we engage in the rigors of scholarly inquiry, the dental and political worlds converge in ways reminiscent of a whimsical tale by J.K. Rowling or George R.R. Martin. It appears that reality may indeed be stranger than fiction, and just as enthralling.

In conclusion, the striking correlation between Republican votes and the density of dentists in Indiana raises intriguing questions about the nuanced interplay between the political landscape and oral health. We are left to ponder whether it is the charm of a winning smile that sways voters, or whether the dental profession holds sway in the political arena, leaving a lasting impression on the electoral outcomes. As we draw the curtain on this discussion, we are reminded that in the realm of academic exploration, truth may indeed be stranger than fiction. Who knew that the ballot box and the dentist's chair could share such a striking connection?

6. Conclusion

In conclusion, our study has unveiled a striking correlation between Republican votes for Senators and the number of dentists in Indiana. The robust positive relationship, as indicated by a correlation coefficient of 0.9217215 with a p-value of less than 0.01, has

left us grinning from ear to ear (pun intended). It seems that Hoosiers have a lot to chew on when it comes to the intersection of political preferences and dental care, potentially suggesting that strong political inclinations may indeed result in strong, healthy smiles.

Our findings raise thought-provoking questions about the underlying factors contributing to this unexpected correlation - it's almost as if the political landscape and dental profession are engaged in a tooth-and-nail battle for the limelight. One might ponder whether the ability to flash a winning smile might have a hidden influence on voting behavior. Our results also underscore the need for further investigation into the mechanisms driving this connection. After all, it's not every day that one encounters such a fascinating alignment of seemingly unrelated phenomena.

With that said, it appears that no more research is needed in this area. We've unraveled this particular mystery, and it seems that the tooth, the whole tooth, and nothing but the tooth has been revealed. Should we say "braces" to all involved in this unique study?