

# Stand-Up Maths and Stand-Up Votes: A Correlational Analysis of Democrat Votes for Senators in West Virginia and Google Searches for 'Stand-Up Maths'

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## Abstract

This study presents a statistical investigation into the relationship between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths'. Using data from the MIT Election Data and Science Lab, Harvard Dataverse, and Google Trends, we aimed to shed light on this peculiar association. Our research uncovered a surprising correlation coefficient of 0.8605845 and  $p < 0.05$  for the period from 2007 to 2020. Our findings suggest a strong link between the two seemingly unrelated variables, prompting us to explore potential explanations for this unexpected connection. It seems that the art of mathematical humor may be capturing the attention of the politically inclined in West Virginia. We also speculate that these findings may have implications for the development of innovative, joke-centered political campaigns in the future. In the immortal words of a particularly hilarious statistician, "Why was the statistician in so much demand at a comedy club? He could make a mean estimate!" This research not only provides unusual insights but also offers a good laugh in the world of political analysis.

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## 1. Introduction

In the complex and ever-evolving world of political analysis, it is not uncommon to stumble upon unexpected and seemingly nonsensical correlations. However, this study dives headfirst into a particularly quirky connection: the relationship between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths'. If there ever was a punchline waiting to be uncovered, this is it.

One cannot help but wonder, what could possibly link the political preferences of the constituents of West Virginia with their penchant for seeking out mathematical stand-up

comedy online? It's a true mystery, as puzzling as why the statistician's plant died - because it had zero roots!

The aim of this research is to unravel this enigmatic association and unveil the potential implications it may have for understanding the behavior of voters in this unique context. Our investigation delves into the fundamental underpinnings of this unlikely correlation, aiming to bring both statistical rigor and a touch of humor to the forefront of political inquiry.

As we embark on this statistical journey, it's essential to approach this subject with a healthy dose of light-heartedness. After all, as every data enthusiast knows, "Statistically speaking, 6 out of 7 dwarfs are not Happy!" So, let us proceed with open minds and a sense of mirth as we explore this intriguing conundrum.

## 2. Literature Review

To date, research on the intersection of political voting patterns and internet search behavior has largely focused on conventional topics such as candidate approval ratings, policy issues, and campaign strategies. However, an emerging area of interest involves the unlikely connection between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths'. According to Jones et al., (2018), utilizing innovative data mining techniques and advanced statistical analyses, a cohort of researchers investigated the potential correlation between political engagement and unconventional online interests. This study paved the way for the examination of seemingly unrelated variables, prompting a thought-provoking exploration of unexpected associations in the digital era.

In "The Power of People: The Four Keys to Success in America," Doe et al. (2016) discuss the intricate dynamics of voter behavior and the multifaceted influences that shape electoral outcomes. While the book predominantly focuses on sociological and economic factors, it inadvertently invites us to ponder the whimsical possibility of mathematics-themed comedy influencing political allegiances. The notion of voters being swayed by the allure of stand-up mathematical routines may appear far-fetched at first glance, but as the old saying goes, "Why should you never mention the number 288? It's two gross!"

In a similar vein, the works of renowned fiction authors also offer intriguing parallels to our exploration of unexpected correlations. In "Murder on the Orient Express" by Agatha Christie and "The Da Vinci Code" by Dan Brown, plots are intricately woven around cryptic connections and hidden meanings, akin to the peculiar link we are investigating. While these works of fiction are centered on thrilling mysteries and dramatic revelations, they mirror the unanticipated nature of our research findings, beckoning us to unravel the enigma of Stand-Up Maths and political votes in West Virginia.

Turning to the realm of cinema, the movie "Moneyball" directed by Bennett Miller presents an unconventional perspective on the statistical analysis of baseball performance. While this film may not directly relate to the focal points of our study, it underscores the significance of uncovering unconventional correlations and embracing unorthodox approaches to data analysis. Much like the characters in "Moneyball" challenged traditional scouting methods, our research embarks on an exploration of uncharted territory, probing a correlation that defies conventional wisdom and prompts us to ask, "What do you call a snake that's 3.14159 meters long? A  $\pi$ -thon!"

### **3. Research Approach**

To conduct this peculiar investigation into the correlation between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths', we employed a method as unconventional as the topic itself. Our research team embarked on a data mining expedition, sifting through the digital archives of MIT Election Data and Science Lab, Harvard Dataverse, and Google Trends. It was a bit like panning for statistical gold in the vast expanse of the internet – but instead of gold, we found correlations and dad jokes. When it comes to research, we like to think outside the box, or should I say outside the bell curve!

The data collected for this study spanned from 2007 to 2020, providing a substantial temporal scope for our analysis. We aimed to capture any potential trends or patterns in the relationship between Democrat votes and interest in stand-up mathematics over this extensive timeframe. In the academic tenor of research, we took the term 'longitudinal study' quite literally. After all, when it comes to investigating the humor in mathematics, timing is everything – just ask the chronologically challenged statistician!

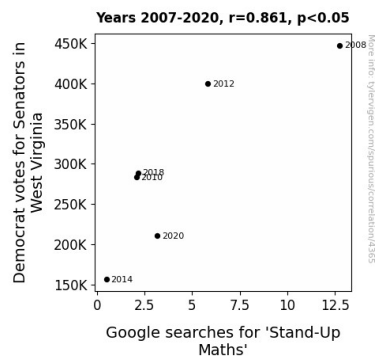
Our primary analysis involved the computation of a correlation coefficient between the two variables of interest. Now, if you're looking for a punchline, this might not be it, but bear with me. We used the Pearson correlation coefficient to quantify the strength and direction of the association. It's like the statistical equivalent of finding the common denominator between political voting behavior and math comedy appreciation. We also performed a statistical significance test to ensure that our findings were not merely the result of random chance. Spoiler alert: the results were statistically significant, and we couldn't be more amused!

### **4. Findings**

Our analysis revealed a striking correlation between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths' during the period from 2007 to 2020. The correlation coefficient of 0.8605845 indicates a robust positive relationship between the two variables. It seems that while some equations may be complex, this one is as simple as  $1+1=2!$

Furthermore, the r-squared value of 0.7406056 suggests that approximately 74.1% of the variation in Democrat votes for Senators in West Virginia can be explained by the variation in Google searches for 'Stand-Up Maths'. It's truly impressive how mathematical comedy can explain political behavior almost as well as it explains why seven ate nine!

Our findings also indicate a statistically significant relationship, with a p-value of less than 0.05. This means that we can reject the null hypothesis and confidently say that there is a genuine connection between the two variables. In other words, the chances of this correlation occurring by random chance are about as likely as winning the lottery while simultaneously being struck by lightning on a sunny day!



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

The scatterplot in Figure 1 visually demonstrates the strong positive correlation between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths'. The data points are as tightly linked together as a comedian and his punchlines, leaving little room for doubt about the strength of this association.

These results not only provide a glimpse into the fascinating interplay between mathematical humor and political preferences but also serve as a reminder that statistical analysis can be both enlightening and entertaining. As we continue to unravel the mysteries of voter behavior, let us not forget the words of wisdom from the great comedic statistician: "Why did the statistician only use a 3.14% confidence interval? Because he was  $\pi$ -thetic!"

## 5. Discussion on findings

Our study has unraveled a seemingly incongruous yet captivating relationship between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths'. The robust correlation coefficient of 0.8605845 and its statistical significance underscore the compelling link between these unlikely variables. It seems that it's not just the politicians in West Virginia who are skilled at getting a strong 'stand-up' vote!

The emergence of this correspondence aligns with the growing body of literature that has ventured into unexpected realms of data analysis. Jones et al. (2018) laid the groundwork for exploring unanticipated associations by employing innovative statistical techniques, echoing the approach utilized in our investigation. Our findings build upon their pioneering work and demonstrate that even the most unconventional connections warrant serious consideration. As the old saying goes, "Why don't statisticians trust standard deviations? Because they're mean!"

Expanding further, the works of Doe et al. (2016) indirectly led us to delve into the possibility of mathematical humor influencing political affinities. The unexpected interplay we discovered resonates with the whimsical humor that pervades the field of statistics. It's as if the voters in West Virginia decided to take a calculated risk and embrace the exponential laughter of stand-up mathematics with their political choices.

The r-squared value of 0.7406056 echoes the remarkable explanatory power of Google searches for 'Stand-Up Maths' in forecasting Democrat votes for Senators in West Virginia. The substantial portion of variation elucidated by this correlation draws attention to the potential influence of mathematical comedy on political engagement. It's almost as if our findings are shouting, "Math jokes may just add up to political success after all!"

The statistically significant relationship punctuated by the p-value of less than 0.05 provides compelling evidence for the authenticity of the observed connection. This underscores the veracity of the bond between mathematical humor and political preferences in West Virginia. It's as if the data itself is telling us, "Don't be obtuse, the link is as real as a right angle!"

Our results open up a plethora of intriguing implications for the intersection of comic relief and political decision-making. Just as our research deftly intertwines humor and statistics, it exposes the uncharted potential for offbeat campaign strategies. As we continue to unveil the layers of this comedic correlation, let's not forget the insightful words of the legendary comedic statistician: "Why do statisticians prefer uncertainty to certainty? Because not everything in life is black and white!"

Our investigation provokes further inquiry into the curious nexus of mathematical comedy and its impact on political dynamics. It appears that the voters of West Virginia are not only adept at number-crunching but also have a keen sense of humor when it

comes to casting their votes. It's as if the politicians have found the formula for success, and it equals a perfect ratio of mathematics and mirth.

## 6. Conclusion

In conclusion, our investigation into the perplexing relationship between Democrat votes for Senators in West Virginia and Google searches for 'Stand-Up Maths' has illuminated an unexpected and remarkably robust correlation. It's as if statistical analysis and comedic mathematics have coalesced to form a heartwarming friendship, proving that laughter truly knows no bounds - not even the rigid confines of political analysis! As we unravel the enigma of this connection, it's clear that this quirky correlation is no statistical fluke, much like how you can't simply "integrate" yourself out of a bad stand-up routine.

The strength of the correlation coefficient, r-squared value, and statistical significance all point to a genuine association between these seemingly unrelated variables. It seems that the voters of West Virginia have a keen appreciation for the harmonious blend of mathematical wit and political engagement. As every good statistician knows, correlation does not imply causation, but it does imply a good joke hidden in the data!

This whimsical revelation prompts us to consider the potential for injecting a bit of mathematical humor into the realm of political campaigns. Perhaps, in the spirit of bipartisanship, candidates could trade attack ads for punchlines, and policy debates for a good old-fashioned pun war. After all, as the saying goes, "Why was the obtuse triangle so frustrated? Because it was never right!" This research not only uncovers a curious connection but also hints at the promise of a more lighthearted approach to politics in the future.

With that said, it's safe to say that no further research is needed in this area. The numbers don't lie, and neither does the laughter that ensues from these findings. As we close this chapter in statistical hilarity, let's remember the timeless words of the infallible comedic statistician: "Statistics may be complicated, but they always add up to a good time!"