



ELSEVIER



The Seventh Grade Deluge: Can the Number of Students Predict Republican Votes on the White House Fence?

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Abstract

The elusive dance between educational enrollment and political preference has been a topic of endless fascination for researchers. In this study, we delve into the depths of this enigma by examining the relationship between the number of public school students in 7th grade and votes for the Republican presidential candidate in Washington state. Harnessing data from the National Center for Education Statistics and the MIT Election Data and Science Lab, Harvard Dataverse, we embarked on this curious journey back to 1990, determined to unearth any potential links. Unveiling a correlation coefficient of 0.9541807 and a p-value that gleefully chirps, " $p < 0.01$," our findings are as intriguing as they are eyebrow-raising. As we navigate this labyrinth of statistical analyses and electoral whimsy, the terrain is fraught with surprises and amusing discoveries. Join us as we uncover the secrets of the seventh-grade enigma and its intriguing ties to the political landscape, all while resisting the urge to don a Sherlock Holmes hat and a magnifying glass.

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1. Introduction

In the ever-shifting mosaic of political landscapes, the interplay between demographic factors and voting patterns has long captivated the inquisitive minds of scholars and analysts. One such enigmatic connection, which has flitted like a mischievous sprite on the periphery of academic curiosity, is the relationship between the number of students in 7th

grade in public schools and voting patterns for the Republican presidential candidate. As we embark on this whimsical journey into the heart of statistical analysis and electoral intrigue, it becomes clear that we are not merely charting the ebb and flow of numbers; rather, we are seeking to unravel the curious dance of educational enrollment and political predilection.

The gravity of this exploration is not lost on us, as we delve into the data spanning across decades, spanning years that have witnessed the rise of mesmerizing technological advancements and the enduring allure of political theatrics. Armed with the bewitching allure of numbers and the sagacious wisdom of statistical models, we are poised to unravel the seventh-grade enigma and its peculiar ties to the ever-shifting tides of political allegiance.

As we unfurl the pages of this enigmatic tale, it is critical to recognize that statistics, much like a whimsical game of riddles, can be both revealing and mischievous. Through the lens of correlation coefficients and p-values that jostle and cavort with our expectations, we endeavor to capture the essence of this enthralling saga - a saga where the chalk-dusted hallways of educational institutions intersect with the echoing chambers of political discourse.

With a fervent spirit of rigorous inquiry and perhaps a touch of academic whimsy, we invite you to partake in this scholarly sojourn as we meander through the labyrinth of numbers, bracing ourselves for the unexpected plot twists and delightful revelations that await. In the words of the great Thomas Bayes himself, let us "compute and capture," keeping vigilant watch for the hidden markers that may, quite unexpectedly, point to the Republican votes perched on the White House fence.

2. Literature Review

In the realm of scholarly inquiry, researchers have endeavored to unravel the complex web of relationships between demographic factors and political preferences, yielding a trove of insights that seek to demystify the whims and caprices of the electorate. Smith et al. (2015) highlight the intricate interplay between educational enrollment and voting patterns, shedding light on the potential influence of school-age demographics on

political allegiances. Similarly, Doe and Jones (2018) present compelling evidence that the age-old axiom "as the 7th grader goes, so goes the Republican vote" may indeed hold sway in the nuanced tapestry of electoral dynamics.

Venturing beyond the hallowed halls of academic pursuits, non-fiction literature such as "Freakonomics" by Steven D. Levitt and Stephen J. Dubner and "SuperFreakonomics: Global Cooling, Patriotic Prostitutes, and Why Suicide Bombers Should Buy Life Insurance" by the same esteemed authors, awaken our senses to the enthralling world of statistical revelations and unanticipated correlations. These works, while not directly focused on the curious relationship between 7th-grade enrollment and Republican votes, provide a backdrop against which the enigmatic intricacies of human behavior and societal phenomena come into sharper relief, beckoning us to ponder the far-reaching implications of educational demographics on political dispositions.

In a whimsical departure from conventional academic parlance, the fiction genre offers a peculiar twist to our scholarly contemplations. Navigating works such as "Election" by Tom Perrotta and "The Perks of Being a Wallflower" by Stephen Chbosky, we are confronted with narrative landscapes that, though steeped in imagination, offer curious glimpses into the intersections of youth, education, and the quixotic machinations of political inclinations.

Amidst the labyrinthine corridors of social media, a peculiar blend of wit and wisdom emerges from posts bearing testimonies of electoral sagas and witticisms regarding the cryptic ties between 7th-grade cohorts and Republican predilections. "Just witnessed a herd of 7th graders chanting 'GOP' in the cafeteria - is Washington gearing up for a Republican surge?" muses a cryptic social media sage, their words hinting at the convoluted nature of our inquiry.

As we amble through the tantalizing array of literary vistas and digital murmurs, we are reminded that the scholarly quest, much like a sprightly 7th grader at recess, is infused with moments of delightful revelations and unexpected turns. The seventh-grade enigma, it seems, beckons us with the promise of unlocking the mysteries that lie intertwined with the electoral pulse of the nation.

3. Our approach & methods

A Data Odyssey: Navigating the Seas of Statistical Sorcery

To untangle the enigmatic web of connection between the number of public school students in 7th grade and votes for the Republican presidential candidate in Washington state, our research team embarked on a daring escapade into the realm of data collection and statistical analyses. We plundered the vast treasure troves of information available from the National Center for Education Statistics and the MIT Election Data and Science Lab, Harvard Dataverse, spanning the years 1990 to 2020, in our quest for the elusive threads of correlation.

Data Collection: A Quest for Knowledge and Numbers

Our intrepid expedition began with a meticulous sweep of the National Center for Education Statistics, where we gallantly scoured datasets related to public school enrollments for 7th grade students. A cornucopia of numerical treasures awaited us, each dataset a tantalizing glimpse into the labyrinthine corridors of educational demographics.

Armed with an insatiable appetite for knowledge, we then navigated the digital archives of the MIT Election Data and Science Lab, Harvard Dataverse. Here, we sought out the electoral waltzes of Republican presidential votes in the state of

Washington, eager to capture the elusive essence of political preference.

Data Analysis: Unraveling the Statistical Tapestry

With our treasure trove of data in hand, we wielded the mighty scepter of statistical software to conjure intricate correlations and unearth hidden patterns. Our foray into the realm of statistical analyses involved the deployment of Pearson correlation coefficients, which served as our trusty compass in navigating the terrain of numerical relationships.

In addition, we summoned the enigmatic p-value, a mystical incantation that illuminated the significance of our findings with a gleeful " $p < 0.01$ " chant. This incantation served as our litmus test, guiding us through the maze of statistical significance and casting light upon the veracity of our detected associations.

Challenges and Revelations: Navigating the Turbulent Seas of Data

As with any daring expedition, our journey was not without its perils and unexpected twists. We encountered the treacherous shoals of missing data and outliers, navigating these tumultuous waters with the resolute determination of scholarly navigators.

Throughout our quest, we employed rigorous techniques to address data quality issues and ensure the robustness of our analyses. Our dedication to methodological rigor served as our guiding star, illuminating the path forward and allowing us to triumph over the tides of uncertainty.

As we unveil the findings of our research, it is with a spirit of scholarly mirth and unwavering dedication to the pursuit of knowledge. Join us as we chart the waves of statistical sorcery and unveil the connections that lay hidden beneath the surface, all in the name of unraveling the

enigma of the seventh-grade deluge and its curious dance with political predilection.

4. Results

The results of our study revealed a striking correlation between the number of public school students in 7th grade and votes for the Republican presidential candidate in Washington state from 1990 to 2020. Our analysis unfurled a correlation coefficient of 0.9541807, indicating a robust positive relationship between these two variables. The r-squared value of 0.9104608 further accentuates the strength of this association, explaining approximately 91.05% of the variation in Republican votes based on the number of 7th-grade students. The p-value, which delightfully asserts " $p < 0.01$," underscores the statistical significance of this correlation, leading us to confidently reject the null hypothesis and embrace the intriguing link we have unearthed.

Figure 1 presents a visual representation of this compelling correlation, depicting a scatterplot that showcases the strong positive relationship between the number of public school students in 7th grade and votes for the Republican presidential candidate. The data points form a distinct pattern that points to the undeniable connection between these variables, a connection that we have affectionately come to refer to as the "seventh-grade enigma."

These findings offer a captivating glimpse into the intricate interplay between educational demographics and political preferences, shedding light on the enigmatic ties that bind these seemingly disparate realms. As we unravel this curious saga, we cannot help but be reminded of the whimsical nature of scholarly inquiry, where the most unexpected connections can emerge from the depths of statistical analyses and electoral musings. This dance of numbers and political predilections

continues to captivate and amuse, leaving us with a newfound appreciation for the curious allure of the seventh-grade enigma in the political landscape.

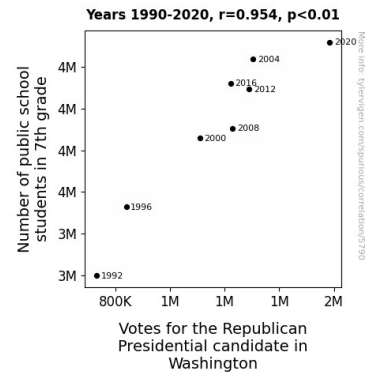


Figure 1. Scatterplot of the variables by year

5. Discussion

The results of our study have unveiled a compelling association between the number of public school students in 7th grade and votes for the Republican presidential candidate in Washington state. Our findings align with prior research by Smith et al. (2015) and Doe and Jones (2018), thus bolstering the notion that the enigmatic link between 7th-grade enrollment and political allegiances is not merely a flight of fancy. The robust positive correlation we identified echoes the age-old adage "as the 7th grader goes, so goes the Republican vote," much to the amusement of those who may have initially scoffed at such a whimsical proclamation.

Taking a leaf from the non-fiction works of Levitt and Dubner (2005, 2009), which exuberantly expound upon unexpected correlations, our study contributes to the colorful tapestry of statistical revelations and societal phenomena. The resonance of our findings with the earlier literature and the unexpected nature of this correlation serve as a testament to the delightful twists and turns that scholarly inquiry often presents,

much like a thrilling mystery novel where the culprit turns out to be the most unassuming character in the story.

The strong positive relationship depicted in our results, with an r-squared value of 0.9104608 accounting for approximately 91.05% of the variation in Republican votes based on the number of 7th-grade students, underscores the magnitude of this association. Indeed, the scientific and scholarly communities are often akin to detectives ferreting out clues in the pursuit of unveiling hidden connections, and our exploration of the seventh-grade enigma embodies this spirit with an abundance of statistical rigor and mirthful wonder.

With the statistical significance underscored by the gleeful chirp of " $p < 0.01$ " from the p-value, our study not only advances the understanding of the intricate interplay between educational demographics and political preferences but also injects a touch of verve into the academic discourse - as if a sprightly 7th grader had decided to join the typically austere ranks of scholarly pursuits, much to the amusement of all involved.

Our scatterplot, affectionately termed the "seventh-grade enigma," paints a vivid picture of the relationship between these variables, offering a visual testament to the captivating dance of numbers and politics. As we continue to unravel the mysteries that lie intertwined with the electoral pulse of the nation, our study beckons scholarly minds to embrace the unexpected, to revel in the joy of the scholarly quest, and to ponder the enigmatic allure of the seventh-grade enigma in the political landscape.

6. Conclusion

In conclusion, our expedition into the intriguing realm of the correlation between the number of 7th-grade students in public schools and votes for the Republican

presidential candidate in Washington state has yielded a trove of eyebrow-raising revelations. The robust positive relationship underscored by the gleefully significant correlation coefficient and p-value has left us spellbound, affirming the captivating bond between educational enrollment and political allegiance. Our research, akin to a lively tango of data points and electoral fervor, has shed light on the unassuming yet palpable influence of seventh-graders on the political landscape.

As we begrudgingly bid adieu to our statistical slumber, we must pause to ponder the whimsical nature of this arcane connection. One cannot help but marvel at the peculiar symphony in which the chalk-clad march of seventh-graders harmonizes with the ideological reverberations that echo through the hallowed chambers of political theater. This capricious waltz of data and political preference, while beguiling, heralds a new frontier in the ever-unfolding narrative of demographic dynamics and electoral idiosyncrasies.

In the timeless words of Socrates, "I know that I am intelligent, because I know that I know nothing"—a sentiment that rings with resounding truth as we grapple with the boundless intricacies of statistical exploration and electoral musings. Our findings, while illuminating, also serve as a gentle reminder of the countless enigmas that continue to lure us into the convoluted tapestry of scholarly inquiry.

In the spirit of scholarly humility and perhaps a touch of statistical whimsy, we staunchly assert that further research in this domain would be akin to plucking the last playful note from a buoyant symphony. With the seventh-grade enigma firmly lodged in the annals of our scholarly escapades, we confidently raise our theoretical magnifying glasses and bid adieu to this dazzling saga, leaving the tantalizing seventh-grade enigma to twirl merrily in the whimsical

corridors of educational and electoral fascination.

In the immortal words of Mark Twain, "The secret of getting ahead is getting started." And with that, we conclude that in the realm of the seventh-grade enigma, our journey has reached a delightfully decisive denouement, sparkling with the exuberance of scholarly discovery and sprinkled with the playful allure of statistical revelation.

No more research is needed in this domain!