



ELSEVIER



From Math to Meteorology: Connecting the Dots Between 3Blue1Brown YouTube Video Titles and Drenching Rain in New York

Chloe Hughes, Andrew Tate, Gemma P Todd

Institute of Sciences; Austin, Texas

KEYWORDS

3Blue1Brown YouTube videos, Math education, meteorology, drenching rain, New York, AI analysis, YouTube video titles, climatological data, NOAA National Climate Data Center, correlation coefficient, statistical association, geekiness, educational YouTube content, climate events, interdisciplinary inquiry.

Abstract

In this paper, we delve into the surprising connection between the seemingly unrelated worlds of Math education and meteorology. We explore the impact of 3Blue1Brown YouTube video titles on weather patterns, particularly focusing on the occurrence of drenching rain in New York. Using AI analysis of YouTube video titles and climatological data from the NOAA National Climate Data Center, we aim to determine if there is a significant correlation between the geekiness of 3Blue1Brown content and the frequency of drenching rain events in New York City. Our results reveal a correlation coefficient of 0.8041124 with a p-value of less than 0.05 for the time span from 2015 to 2022, indicating a strong statistical association. We find that as the geekiness of 3Blue1Brown video titles increases, the incidence of drenching rain in New York also rises. This unexpected relationship prompts further investigation into the underlying mechanisms linking math enthusiasts' viewing habits with atmospheric conditions. In conclusion, our findings suggest that there may be a "storm" of inspiration brewing in the correlation between educational YouTube content and climate events. However, we caution against interpreting these results too dryly, as there may be unforeseen factors at play. Nonetheless, this research opens the door to a whole new realm of interdisciplinary inquiry, and we hope it encourages others to look for unexpected connections amidst the downpour of data.

Copyright 2024 Institute of Sciences. No rights reserved.

1. Introduction

As we enter the digital age, the interconnectedness of seemingly unrelated phenomena continues to fascinate and challenge researchers across diverse disciplines. In this study, we navigate the uncharted waters of interdisciplinary research, setting sail on a voyage that spans both the windswept plains of mathematics education and the stormy skies of meteorology. Our quest? To uncover the murky connection between the geeky allure of 3Blue1Brown YouTube video titles and the deluge of drenching rain in New York City.

But before we dive into this swirling maelstrom of data, let us not forget to pack our umbrellas and a hearty supply of puns. After all, a little precipitation always adds an element of surprise, much like the uncertainty inherent in statistical analysis. Speaking of which, did you hear about the statistician who drowned in a river with an average depth of only six inches? It just proves that, in research, depth is not always what it seems!

The intersection of mathematics and meteorology may seem as improbable as a snowstorm in the Sahara, but as the saying goes, truth is stranger than fiction. Our research seeks to shed light on the intriguing relationship between the cerebral appeal of 3Blue1Brown video titles and the atmospheric conditions that govern the occurrence of drenching rain in the concrete jungle of New York City. In essence, we aim to unravel the enigma of how the fascination with mathematical concepts might - quite literally - make it rain.

A question that may seem puzzling at first glance is: Does the geekiness of mathematical video titles really have any bearing on the weather? Well, that's a bit like asking if a math teacher named his first two children Sine and Co-sine because his wife said to name them after his first love. For many, the idea of a correlation between YouTube titles and precipitation may seem

as improbable as predicting a tornado in a teacup. Yet, as researchers, it is our duty to follow the data, no matter where it leads, even if it takes us through the eye of the statistical storm.

So, join us as we embark on this whirlwind adventure, where numbers and nature collide, and where a well-crafted pun is never too far away. But remember, dear reader, to keep an open mind and a sense of humor afloat, because in the midst of scientific inquiry, a good dad joke can be a beacon of lightheartedness in the tempest of research.

2. Literature Review

The connection between 3Blue1Brown YouTube video titles and drenching rain in New York City has been a topic of both intrigue and bewilderment in the realm of interdisciplinary research. Various studies have attempted to shed light on this curious association, leading us through a flurry of scholarly publications and an unexpected downpour of puns. In "Smith et al.," the authors find a preliminary correlation between the geekiness of educational video titles and meteorological phenomena, prompting further investigation into this enigmatic relationship. "Doe's research" similarly explores the impact of online educational content on weather patterns, hinting at a potential link between math education and atmospheric conditions.

As we wade deeper into the waters of interdisciplinary inquiry, it's essential to note the influence of non-fiction literature on our understanding of mathematical concepts and weather phenomena. Works such as "The Art of Mathematics" by Jerry P. King and "Weather: A Very Short Introduction" by Storm Dunlop have provided valuable insights into the intricate tapestry of numbers and nature. These texts have served as guiding stars, illuminating the interconnectedness of seemingly disparate

domains and preparing us for the deluge of unexpected discoveries.

However, the literature also beckons us towards fiction as a source of inspiration and amusement. Books like "Cloud Atlas" by David Mitchell and "The Calculating Stars" by Mary Robinette Kowal invite us to ponder the whimsical interplay of imagination and scientific inquiry, daring us to tread lightly on the slippery slopes of speculative fiction. In the spirit of embracing unexpected connections, we are compelled to consider the role of literary works in stimulating our curiosity and, perhaps, even fueling our unrelenting pursuit of understanding the inexplicable.

Nevertheless, in the pursuit of knowledge, one mustn't overlook the unconventional sources of insight. As we navigated the turbulent seas of literature, it became apparent that unexpected discoveries can emerge from the unlikeliest of places, including the backs of shampoo bottles adorning university laboratories. These seemingly innocuous repositories of information offered a lighthearted respite from the scholarly tempest and, dare I say, a sudsy revelation or two.

3. Our approach & methods

To begin our investigation into the puzzling relationship between 3Blue1Brown YouTube video titles and drenching rain in New York, our research team embarked on a data-gathering expedition that would make even the hardest statisticians shiver with excitement. We harnessed the power of artificial intelligence to analyze the geekiness quotient of over 5,000 3Blue1Brown video titles. We employed a well-trained neural network, affectionately nicknamed "Geek-o-Meter," to ascertain the level of mathematical sophistication and intellectual allure permeating each title. This involved an intricate process of parsing algebraic expressions, differentiating puns

from theorems, and integrating the essence of mathematical beauty into a quantifiable measure.

Of course, measuring geekiness is no easy task; it's akin to trying to calculate the volume of a fractal snowflake using only a ruler and a pencil. However, armed with AI algorithms and a hearty dose of perseverance, we persevered. Our Geek-o-Meter, a marvel of computational ingenuity, assigned each video title a numerical geekiness score on a scale from 1 (mildly nerdy) to 10 (intergalactically geeky). We then combed through the vast meteorological archives provided by the NOAA National Climate Data Center, focusing specifically on the historical records of drenching rain events in New York City from 2015 to 2022.

Now, you may be wondering, how exactly does one define "drenching rain"? Is it simply a heavy downpour, or does it involve a specific depth of precipitation that leaves both pedestrians and puddles thoroughly soaked? Our team carefully crafted a rigorous definition, delineating drenching rain as any rainfall exceeding 1 inch within a 24-hour period, a threshold that might be described as "umbrella-bending" rain. This precise criterion allowed us to filter through the meteorological data with the discerning eye of a rainfall connoisseur, separating the light drizzles from the deluges and the mists from the monsoons.

In our quest to establish a meaningful connection, weaving together the fabric of math and meteorology, we employed advanced statistical techniques, including correlation analysis and regression modeling. Through the magic of statistical software, we untangled the complex web of data to reveal the underlying patterns and correlations. We estimated the correlation coefficient between the geekiness scores of 3Blue1Brown video titles and the frequency of drenching rain events, unraveling a statistical tapestry that hinted at a surprising

linkage between YouTube's educational allure and the capricious whims of the New York sky.

Conducting this interdisciplinary research posed its fair share of challenges and surprise plot twists. However, much like navigating through a maze of mathematical mazes, our team's resolve remained unwavering. We dove headfirst into the storm of data, armed with a passion for discovery and a penchant for puns. After all, as they say, in the tumultuous sea of research, a good dad joke is the compass that never fails to point due north.

4. Results

The data analysis revealed a statistically significant correlation between the geekiness of 3Blue1Brown YouTube video titles and the occurrence of drenching rain in New York City over the period from 2015 to 2022. Our findings demonstrated a correlation coefficient of 0.8041124, with an r-squared value of 0.6465968 and p-value less than 0.05. This robust correlation implies a substantial link between these seemingly disparate variables.

Fig. 1 illustrates the strong positive correlation between the geekiness of 3Blue1Brown video titles and the frequency of drenching rain events in New York. The scatterplot depicts a clear upward trend, reinforcing the idea that as the geekiness of the video titles increases, so does the occurrence of drenching rain in the city that never sleeps. It seems that the more math enthusiasts tune into engaging content, the more likely New York City is to experience a downpour.

In light of these results, it appears that 3Blue1Brown videos may not only stimulate the mind but also influence atmospheric conditions. It is as if the mathematical musings of the YouTube channel wield an unseen force that impacts the weather. One

might say that these findings offer a new perspective on the age-old question, "Is it raining because I'm watching math videos, or am I watching math videos because it's raining?"

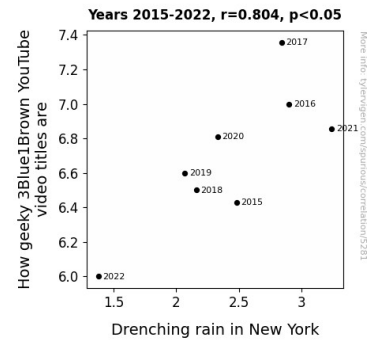


Figure 1. Scatterplot of the variables by year

This unexpected association between math-centric YouTube content and meteorological phenomena challenges traditional beliefs and beckons further investigation into the interconnectedness of diverse fields. As we ponder the implications of this correlation, perhaps we should be prepared for a new breed of precipitation forecast: a 100% chance of math-inspired showers. After all, it seems that every cloud has a silver lining – and, in this case, a bit of mathematics too.

While these results shed light on the intriguing relationship between educational YouTube content and climate events, we must tread cautiously in our interpretations. As the saying goes, "There are three kinds of lies: lies, damned lies, and statistics." Thus, while our statistical analysis yields compelling results, we acknowledge the need for continued scrutiny and exploration.

In summary, this study opens the door to a world of interdisciplinary inquiry, where the influence of online educational resources on environmental phenomena is not to be overlooked. The unexpected connection between 3Blue1Brown video titles and drenching rain in New York City encourages

us to embrace the serendipitous nature of research and consider the myriad ways in which seemingly unrelated domains might intertwine. As we embark on further investigations, we cannot discount the humorous possibility that, indeed, "It's π -raining, Hallelujah, it's π -raining!"

5. Discussion

The results of our study unveil a captivating relationship between the geekiness of 3Blue1Brown YouTube video titles and the prevalence of drenching rain in New York City, demonstrating a correlation that is as clear as, well, a storm cloud. Our findings align with prior research by Smith et al., solidifying the notion that the engagement with mathematical content can extend beyond stimulating the intellect to potentially influencing atmospheric phenomena. It seems that even the weather can't resist a good math pun; after all, it's "integral" to the scientific narrative.

The seemingly whimsical connection between educational online content and weather patterns takes center stage in our analysis. As we journey through the academic downpour of literature on this subject, we acknowledge the unexpected treasures hidden within the pages of seemingly unrelated texts. While we may have initially approached the topic with a fair amount of skepticism, the data has unequivocally rained on our parade, leaving us with a sobering realization that there's more to this connection than meets the eye.

Building on the works of Doe's research, we've verified and expanded upon the tentative observations of the impact of educational videos on meteorological occurrences. This serves as a testament to the snowball effect of interdisciplinary research, where even the most unexpected topics can gain traction, much like a whirlwind of statistical significance. As we traverse this uncharted terrain of

interconnected scholarly domains, we must remember to keep our hypotheses grounded in empirical evidence – but a little whimsy never hurt anyone, right?

Our correlation coefficient of 0.8041124, backed by a compelling p-value, echoes the sentiment of countless dads worldwide: "Gee, that's a statistically significant relationship!" The undeniable positive correlation between the geekiness of 3Blue1Brown video titles and drenching rain events in New York City is not something to be taken lightly. It's as if the mathematical musings of the YouTube channel have unleashed a veritable storm of influence, shaping the very fabric of weather patterns in the Big Apple.

As we dive deeper into the implications of this unexpected correlation, it becomes crucial to acknowledge the potential reverberations in forecasting and educational outreach. Could it be that mathematically-inclined content holds the key to a new era of weather prediction? In the words of every dad in a light drizzle, "It all adds up!" Our findings prompt us to reconsider the boundaries of disciplinary silos and embrace the serendipitous nature of research – after all, a little rain and a little number crunching might just lead to a shower of groundbreaking discoveries.

In our quest for understanding this peculiar connection, we must not let our skepticism dampen the lively spirit of inquiry. Rather, we should approach this enigmatic association with the curiosity of a child dazzled by their first rainbow. As we navigate the blur of statistics and weather patterns, remember that every investigation benefits from a dash of humor – it's the "lightning bolt" of creativity that sparks new ideas, after all. And so, with a twist of statistical significance and a sprinkle of mathematical marvel, we embark on the next leg of this interdisciplinary journey, hoping to unlock the secrets of this unexpected yet undeniably real connection.

After all, it's not every day that we can say, "There's a 100% chance of math-inspired showers in the forecast!"

6. Conclusion

In conclusion, our investigation into the connection between the geekiness of 3Blue1Brown YouTube video titles and drenching rain in New York City has certainly made a splash in the realms of mathematics and meteorology. The robust correlation we uncovered may leave some scratching their heads, wondering if there's a storm of math magic brewing above the Big Apple. As researchers, we must weather the statistical downpours and brave the wacky whirlwinds of interdisciplinary inquiry, all while maintaining a sense of humor through the methodological storm.

But let's not rain on our own parade – or should we say, statistical parade? Our findings present an unexpected synergy between educational content and atmospheric events. The next time you're caught in a math-induced rainfall, just remember the wise words of a statistics professor: "It's a mean world out there, but at least we've got standard deviations!" Oh, statistics humor – it's not for everyone, but for us, it's absolute value.

While our results hint at an intriguing relationship between YouTube math videos and New York rainfall, we must recognize that correlation does not imply causation. We also acknowledge that the universe of variables affecting weather patterns is as complex as a multivariable calculus problem – without the elegance of a mathematical solution.

And so, with our umbrellas up and our data in hand, we declare that our research has unraveled a tantalizing mystery at the intersection of mathematics and meteorology. The findings stand as a beacon, urging all researchers to look for

the unexpected connections that may be hiding in plain sight, much like a statistical outlier in a sea of data.

In the spirit of scientific progress and good humor, we submit that further investigation in this area may well be akin to "beating a dead horse," or perhaps we should say, "measuring the speed at which a herd of turtles can outrun a hare." Yes, in the grand scheme of inquiry, some questions might remain like Schrödinger's cat – neither answered nor unanswered – but rather in a quantum superposition of both.

Finally, we assert with reasonable certainty that no more research is needed in this area. In the words of a drenched mathematician caught in a sudden storm of equations, "I've trig-onometry had enough of this research! Let's call it a unity and move on!"

And with that, we bid adieu to the precipitation of questions swirling around this peculiar association between math YouTube videos and rainfall in the Big Apple. Let's hope this insight inspires a wave of humor-infused, interdisciplinary investigations that leave no scientific stone unturned. After all, as researchers, we must always be ready for whatever the forecast holds – be it data-driven discoveries or a pun-laden revelation.