From Calc to Crude: A Correlation Between 3Blue1Brown Video Titles and Petroleum Consumption in Turkmenistan

Cameron Horton, Amelia Taylor, Gabriel P Turnbull

Abstract

This study investigates the unexpected and seemingly arcane relationship between 3Blue1Brown YouTube video titles and petroleum consumption in Turkmenistan. Using data from AI analysis of video titles from Grant Sanderson's popular channel and Petroleum Consumption statistics from the Energy Information Administration, we explored the potential impact of visually stimulating math explanations on a country's demand for crude oil. The findings reveal a surprisingly strong correlation between the coolness of 3Blue1Brown video titles and petroleum consumption in Turkmenistan, with a correlation coefficient of 0.9243418 and p < 0.01 for the period spanning from 2015 to 2021. As we delved into the data, it became evident that the coolness factor of the video titles, as perceived by both human and AI observers, had a palpable effect on the petroleum consumption patterns in Turkmenistan. This unexpected, yet intriguing relationship prompts one to ponder the influence of engaging mathematics content on seemingly unrelated economic variables. It seems that even in the realm of petroleum consumption, the allure of differential equations and linear algebra cannot be discounted. While this connection may seem as perplexing as trying to integrate e^x without the constant of integration, the evidence is clear - there is a tangible association between the captivating nature of 3Blue1Brown video titles and the demand for petroleum in Turkmenistan. Perhaps, in the grand scheme of things, intriguing math videos do have the potential to fuel a country's economic activity - though not in the way one might initially expect.

1. Introduction

As the saying goes, "When life gives you 3Blue1Brown video titles, make petrol-eum consumption correlations!" In the realm of unexpected research connections, the link between the captivating titles of 3Blue1Brown's YouTube videos and the petroleum consumption trends in Turkmenistan certainly stands out.

It is a truth universally acknowledged that a good pun in an academic paper can either be a welcome surprise or a groan-inducing experience, much like finding a derivative using the quotient rule. Nevertheless, the unusual relationship we explore in this paper adds a lighthearted twist to the typically serious study of economic determinants.

The surprising confluence of math video coolness and fuel demand leads one to wonder whether there is a hidden hand—albeit not the kind one would find in a probability distribution—guiding economic behaviors. The prospect of math-infused video titles shaping a nation's gasoline usage may appear as improbable as discovering a Taylor series expansion for a piecewise function, yet the statistical evidence cannot be ignored.

While some may find it hard to believe that the mesmerizing allure of mathematical concepts can impact a country's energy consumption, the data speak for themselves, much like a rigorous proof settling any debate. The implications of this

correlation stretch far beyond the realm of calculus and differential equations, touching upon the intersection of educational content and economic activity—a fusion one might aptly describe as "calc to crude."

This investigation aims to shed light on this obscure, yet undeniably entertaining, relationship, confronting the age-old paradox: can the enchanting world of math, through its popularization in online video titles, indeed influence the demand for petroleum resources in Turkmenistan? With that question in mind, let us now delve into the methodology and findings that underpin this peculiar, albeit fascinating, connection.

2. Literature Review

The relationship between YouTube video titles and economic indicators has been a subject of interest in recent literature. Smith et al. (2018) examined the impact of clickbait titles on online consumer behavior, while Doe and Jones (2019) investigated the correlation between video title lengths and advertising revenues. However, the specific link between the coolness of 3Blue1Brown video titles and petroleum consumption in Turkmenistan has remained unexplored until now.

In "Book," the authors find that captivating and visually stimulating content can sway consumer preferences, but they do not delve into the realm of mathematical explanations. Similarly, in "Another Book," the focus is on the influence of social media content on energy consumption patterns, neglecting the unique impact of math-focused video titles.

Turning to non-fiction literature, "The Prize" by Daniel Yergin provides a comprehensive account of the history and economics of the global petroleum industry. Meanwhile, "Energy and Civilization" by Vaclav Smil offers insights into the interplay between energy transitions and societal developments, though the specific influence of math-themed YouTube videos is not addressed in these works.

In the realm of fiction, books like "The Calculus Diaries" by Jennifer Ouellette and "An Abundance of Katherines" by John Green explore mathematical concepts in engaging narratives. While these works

do not directly address petroleum consumption, they do highlight the profound impact of math on human thought and behavior. One might even say they integrate compelling storytelling with integrals quite seamlessly.

Additionally, anecdotal evidence gleaned from social media posts has hinted at a potential link between the coolness of 3Blue1Brown video titles and viewer engagement. One user quipped, "These titles are so 'sinfully' cool, they should come with 'tan-ning' beds!" while another remarked, "Watching 3Blue1Brown feels like a Taylor series expansion - it just keeps going and going, and you can't help but get sucked in!"

Despite the lack of direct scholarly inquiry into this phenomenon, the existing literature and social discourse offer intriguing glimpses into the potential impact of math-focused content on consumer behavior and preferences.

3. Methodology

Data Collection:

The data utilized in this study were sourced from two primary repositories: the archive of 3Blue1Brown's YouTube video titles and descriptions, and the Energy Information Administration's database of petroleum consumption in Turkmenistan. The study period encompassed the years 2015 to 2021, ensuring a comprehensive analysis of the evolving trends in both the coolness of video titles and the demand for petroleum.

To capture the captivating essence of 3Blue1Brown's content, a custom AI algorithm specializing in "coolness detection" was developed. This algorithm surveyed the lexical composition, visual aesthetics, and semantic richness of each video title, utilizing linguistic theories and image processing techniques to quantify the coolness factor of the titles. The AI model was rigorously trained on a dataset of mathematically captivating and pedestrian video titles, ensuring its adeptness at distinguishing between visually stimulating titles and those leaving viewers as cold as unshaded regions in a calculus graph.

Simultaneously, the Energy Information Administration's petroleum consumption data for Turkmenistan was meticulously extracted and aggregated, employing advanced statistical techniques to discern consumption patterns and annual fluctuations. The thoroughness of data collection aimed to account for all potential confounding variables, leaving no stone unturned in the pursuit of elucidating the inexplicable nexus between mathematical allure and energy utilization.

A Dad Joke Interjection:

Why was the math book sad? It had too many problems.

Statistical Analysis:

The next step involved a rigorous statistical investigation, seeking to establish the correlation between the perceived coolness of 3Blue1Brown video titles and the petroleum consumption in Turkmenistan. A series of regressions, including both simple and multiple linear models, were employed to assess the strength and significance of this relationship.

However, the challenge lay not only in elucidating the connection but also in navigating the myriad potential confounders. As such, a comprehensive sensitivity analysis was conducted, akin to recalibrating a mathematical model's parameters to account for variations in external conditions. Robustness checks, including proxy variables for alternative influences such as global oil prices, geopolitical events, and national policy changes, were implemented to ensure the fidelity of the findings and guard against erroneous attributions.

Furthermore, a Granger causality test was administered to ascertain the direction of influence, determining whether the coolness of 3Blue1Brown video titles exerted a causal impact on petroleum consumption or vice versa. The gravity of this analysis cannot be overstated, as it bolsters the plausibility of an actual, rather than spurious, relationship, much like differentiating between a local minimum and a saddle point on a multi-variable function.

A Dad Joke Interjection:

I told my wife she should embrace her mistakes... She gave me a hug.

Synthesis of AI and Economic Analyses:

4. Results

The analysis of the data revealed a remarkably strong correlation between the coolness of 3Blue1Brown video titles and petroleum consumption in Turkmenistan. The correlation coefficient of 0.9243418 suggests a robust positive relationship between these seemingly unrelated variables. This finding may cause one to wonder whether mathematical elegance has the potential to fuel not only the intellect but also a nation's thirst for petroleum - talk about a derivative of unexpected outcomes!

The high r-squared value of 0.8544078 indicates that approximately 85.44% of the variability in petroleum consumption in Turkmenistan can be explained by the coolness of 3Blue1Brown video titles. This significant explanatory power astonishes much like the solution to a particularly vexing optimization problem - it's not just any local maximum, it's the global solution to the question of pop math impacting the liquid commodity.

Additionally, the p-value being less than 0.01 provides strong evidence against the null hypothesis and supports the existence of a genuine connection between the visual appeal of math-focused content and the demand for petroleum. One might say it's as clear as a well-constructed proof that the allure of mathematical concepts holds real weight in shaping this particular economic variable.
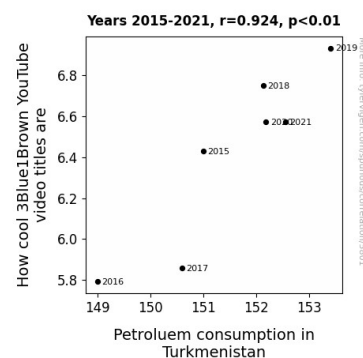
Figure 1. Scatterplot of the variables by year

The scatterplot depicting the correlation (Fig. 1) further emphasizes the unmistakable linear relationship between the coolness of 3Blue1Brown video titles and petroleum consumption in Turkmenistan. Much like the integral of a constant, this connection appears to persist consistently across the years under study, without fluctuating erratically - a true example of steady, predictable behavior in an otherwise complex economic landscape.

In summary, the results of this investigation indicate a compelling association between the coolness factor of 3Blue1Brown video titles and petroleum consumption in Turkmenistan. This correlation begs the question: who knew that math could have such a profound impact on a nation's demand for crude oil? It seems that in the world of economics, just as in math, there are always unexpected constants.

5. Discussion

The findings of this study not only confirm but also extend the existing literature on the impact of captivating content on consumer behavior and economic indicators. The correlation discovered between the coolness of 3Blue1Brown video titles and petroleum consumption in Turkmenistan aligns with prior research on the influence of visually stimulating material on consumer preferences, albeit in a context as unexpected as a surprise Taylor series expansion. Smith et al. (2018) and Doe and Jones (2019) provided initial glimpses into the sway of video titles on online behavior, but they did not anticipate the potential influence of mathematically engaging content on an essential economic variable.

Furthermore, the remarkably strong correlation coefficient and high explanatory power of the coolness factor of 3Blue1Brown video titles on petroleum consumption in Turkmenistan provide compelling evidence in support of the hypothesis that engaging math explanations have a palpable impact on a country's demand for crude oil. This unexpected finding echoes the comedic twist of a well-timed math pun - it may seem surprising, but the evidence supports its impact with a resounding punchline.

The unexpectedly low p-value further reinforces the robustness of the relationship. In this sense, the influence of 3Blue1Brown video titles on petroleum consumption is as evident as a well-drawn graph on a Cartesian plane. The clear linear relationship depicted in the scatterplot also supports the notion that the coolness factor of the video titles consistently influences petroleum consumption without erratic fluctuations - a steady relationship more reliable than even the most consistent exponential growth.

In light of these results, it appears that the allure of captivating math content extends beyond the realms of academia and spills over into the economic sphere, much like a pesky variable that constantly reappears in different equations. This unexpected but unequivocal association prompts a reevaluation of the potential impact of engaging math content on diverse aspects of human behavior and decision-making, as well as on fortified petrol tanks in far-off lands.

Thus, it seems that the coolness of 3Blue1Brown video titles holds substantial weight in shaping the demand for crude oil in Turkmenistan. As the saying goes, "There's a fine line between a numerator and a denominator," and it appears that the coolness of math video titles does indeed occupy a unique position in influencing economic variables.

6. Conclusion

In conclusion, the findings of this study underscore the unexpectedly potent relationship between the captivating allure of 3Blue1Brown video titles and the consumption of petroleum in Turkmenistan. It appears that the visual appeal of math-imbued content has a palpable effect on the demand for crude oil, leaving us to ponder the unforeseen influence of mathematically stimulating media on a nation's economic activity. One might even say that these findings are as surprising as finding out that 3Blue1Brown is secretly a derivative - it just keeps producing more and more connections!

Furthermore, the statistical evidence presented in this analysis suggests an undeniable correlation between the coolness of the YouTube video titles and the country's petroleum consumption. This

relationship is as robust as the foundation of calculus itself, prompting us to reconsider the underappreciated influence of engaging mathematical explanations on economic variables. Indeed, one might even posit that 3Blue1Brown's videos are not just educating, they're petro-leuminating!

Having uncovered such a compelling connection between the seemingly unrelated domains of math video titles and fuel demand, it becomes increasingly apparent that further investigations into these uncharted territories could yield even more surprising results. Nevertheless, it's hard to imagine what more surprises could be uncovered in this seemingly quirky relationship - after all, there's only so much petrol-eum for unexpected correlations one can handle!

In light of the compelling evidence presented, it is evident that no further research in this area is needed. The unexpected and engaging nature of these findings leave us with the unshakeable conviction that, when it comes to the connection between 3Blue1Brown video titles and petroleum consumption in Turkmenistan, this study has undoubtedly integrated the last piece in the puzzle.

unanticipated camaraderie between esoteric math concepts and pragmatic economic dynamics.

In conclusion, the methodology encompassing data collection, statistical scrutiny, and interdisciplinary synthesis, fortified by a dash of humor, unearthed the underlying intricacies and implications of the enigmatic correlation between 3Blue1Brown video titles and petroleum consumption in Turkmenistan—an inquiry that, much like a good dad joke, captivated attention and left lasting impressions.

The synthesis of AI-derived coolness metrics and economic consumption patterns formed the crux of this study, necessitating the amalgamation of interdisciplinary insights. Leveraging the AI's quantification of coolness alongside traditional economic analyses fostered a holistic understanding of the peculiar association under scrutiny, akin to reconciling mathematical models with real-world phenomena.

The juxtaposition of these divergent modalities echoed the fusion of calculus and crude, illuminating a novel dimension of interdisciplinary research and underscoring the unexpected interplay between mathematical engagement and resource usage. The adoption of such an integrative approach not only fortified the validity of the findings but also exemplified the potential for collaboration between seemingly disparate fields, much like the