



ELSEVIER



Googling for Tesla Effect: Exploring the Link Between 'Who is Elon Musk' and West Pharmaceutical Services' Stock Price

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KEYWORDS

"Elon Musk search trends, WST stock price, Google Trends analysis, internet search and stock market correlation, impact of public curiosity on stock price, LSEG Analytics and stock performance, correlation coefficient analysis, stock price impact of 'who is Elon Musk' search, research on search trends and stock market behavior"

Abstract

In this paper, we delve into the peculiar world of internet search trends and stock market behavior to unravel the mysterious dance between public curiosity about Elon Musk and the performance of West Pharmaceutical Services' stock (WST). As a team of intrepid researchers, we employed Google Trends and LSEG Analytics (Refinitiv) to track the prevalence of searches for 'who is Elon Musk' and its potential impact on WST stock price. Remarkably, our findings unveiled a striking correlation coefficient of 0.9887927 with a statistically significant p-value of < 0.01 for the period spanning from 2005 to 2023. Hold on to your lab coats, as we embark on a scholarly exploration filled with unexpected twists, quirky observations, and more puns than you can shake a test tube at.

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1. Introduction

Introduction

The intersection of popular culture, technology, and finance often gives rise to unexpected connections that defy

conventional wisdom. From the inexplicable popularity of pet rocks to the bizarre correlation between butter production in Bangladesh and the S&P 500 index, the world of data analysis has never been short on surprises. In this spirit of quirkiness and

curiosity, we turn our attention to the curious relationship between Google searches for "who is Elon Musk" and the stock price of West Pharmaceutical Services (WST).

While one might initially assume that the musings of the internet populace about the enigmatic Elon Musk bear little relevance to the performance of a pharmaceutical company, our investigation uncovers a compelling and, dare we say, electrifying link between the two. Despite the initial skepticism when presenting this research proposal, we endeavored to shed light on the seemingly bizarre connection and to ascertain whether there is a tangible relationship or if it's simply a case of statistical happenstance.

The juxtaposition of an enigmatic tech visionary with the steady world of pharmaceuticals may seem as incongruous as serving caviar at a backyard barbecue, but our analysis, like a diligent sous-chef, aims to combine these seemingly disparate ingredients into a delectable scholarly dish.

By leveraging the formidable analytical power of Google Trends and the comprehensive financial data available from LSEG Analytics (Refinitiv), we embarked on a scientific expedition worthy of exploration by the likes of Lewis and Clark (or perhaps more fittingly, Doc Brown and Marty McFly). Armed with an insatiable curiosity and a penchant for quirky datasets, we sought to uncover the hidden threads that weave together the public's intrigue with Elon Musk and the stock market performance of West Pharmaceutical Services.

In the following sections, we will navigate a labyrinth of empirical evidence, statistical analyses, and a healthy dose of tongue-in-cheek humor as we paint a picture of this unexpected intersection between public curiosity and financial markets. So, fasten your seatbelts, dear readers, as we embark on a journey that promises to be as riveting

as a SpaceX launch and as surprising as finding a unicorn in a stable.

2. Literature Review

The relationship between internet search trends and stock market movements has been a subject of increasing scrutiny in recent years. Smith et al. (2018) explored the impact of search engine queries on stock prices and found compelling evidence of a causal relationship, particularly in the technology and consumer goods sectors. Similarly, Doe and Jones (2019) investigated the influence of public curiosity about prominent figures on market dynamics, highlighting the potential significance of online search behavior as an indicator of investor sentiment.

While these studies provide valuable insights into the broader phenomenon of internet searches influencing stock prices, our research takes a delightfully eccentric turn by focusing on the specific query, "who is Elon Musk," and its uncanny connection to the stock performance of West Pharmaceutical Services (WST). Like a quizzical detective pursuing clues in the labyrinth of financial markets, we found ourselves on an investigative odyssey that would make Sherlock Holmes do a double take – pun intended.

Our pursuit of scholarly understanding encompasses a diverse array of sources, from serious non-fiction works to the amusingly tangential. "The Search Engine Chronicles" by Lorem and Ipsum (2020) offers a comprehensive overview of the evolving landscape of online search behavior and its implications for various industries. Similarly, "Market Mysteries Unveiled" by Lorem (2017) sheds light on the enigmatic forces driving stock market movements, providing a backdrop for our exploration of the perplexing correlation between 'who is Elon Musk' searches and WST stock price fluctuations.

Venturing into the realm of slightly less serious literature, we encountered fictitious works that, while not directly related to our research, added an element of whimsy to our scholarly pursuits. "The Curious Case of Elon Musk's Stock Ticker" by Arthur Conan Doyen (1911), a playful homage to the legendary detective's foray into financial mysteries, symbolizes the unexpected connections we encounter in our own investigation.

In addition to literary escapades, our research journey was punctuated by cinematic interludes that, while not directly instructive, offered a peculiar form of inspiration. Films such as "The Big Short" and "Moneyball" provided a backdrop of financial intrigue, reminding us that the quirks of the stock market often defy simple explanations – much like the unceasing curiosity about the enigmatic Elon Musk.

As we immerse ourselves in the scholarly tapestry of internet searches and stock prices, we invite our readers to don their metaphorical deerstalker hats and embrace the delightful absurdity of our academic escapade.

Next, we will discover the methodology that allowed us to sift through the data and uncover the enthralling relationship between 'who is Elon Musk' searches and WST stock price dynamics.

3. Our approach & methods

To unravel the enigmatic relationship between public curiosity about Elon Musk and West Pharmaceutical Services' stock price, we embarked on a methodological journey that would make even the most intrepid explorer raise an eyebrow. Armed with a laptop, a cup of coffee, and an unyielding determination to blend data analysis with a sprinkle of whimsy, we set out to capture the essence of this intriguing connection.

Data Collection

Our quest for understanding began with the gathering of data from the fathomless oceans of the internet. We turned to the ever-watching eye of Google Trends to track the frequency of searches for "who is Elon Musk" from 2005 to 2023. As our trusty companion, Google Trends provided us with a digital map of the ebb and flow of public curiosity about the enigmatic visionary behind SpaceX and Tesla, guiding us through the virtual wilderness of search queries.

Furthermore, we turned towards the labyrinthine depths of LSEG Analytics (Refinitiv), where we extracted detailed financial data for West Pharmaceutical Services' stock (WST). Like modern-day alchemists, we transmuted raw numbers into meaningful insights, unraveling the intricate dance of market trends and price fluctuations.

Data Cleansing and Preprocessing

With a flourish of data-wrangling prowess, we meticulously cleansed and preened the datasets, casting out the digital cobwebs and ensuring that our analytical canvas was pristine. Consistency checks, missing value imputations, and outlier analyses became our daily bread and butter, ensuring that our subsequent analyses were built on a sturdy foundation.

Statistical Analysis

To quantify the potential relationship between searches for "who is Elon Musk" and WST stock price, we employed a series of statistical analyses that would make even the most seasoned mathematician nod in approval (or perhaps roll their eyes in amusement). The correlation coefficient, that stalwart measure of association, stood at the forefront of our analytical arsenal, allowing us to gauge the strength and direction of the relationship between these seemingly disparate variables.

In addition, a time series analysis enabled us to discern temporal patterns and fluctuations, akin to sifting through the rings of a tree to uncover its age and history. Furthermore, a regression analysis served as our trusty compass, guiding us through the thicket of data points and elucidating the potential impact of public curiosity on stock price.

Machine Learning Enchantment (Optional)

For a touch of magic, we delved into the realm of machine learning, employing algorithms and models to tease out complex patterns and unearth hidden gems within the data. Our models, like diligent apprentices, learned from the past to predict the future, adding a dash of predictive prowess to our analytical cauldron.

Limitations and Caveats

Though our methodological odyssey was marked by meticulousness and rigor, it is not without its limitations. The exploratory nature of this research endeavor, combined with the inherent nuances of internet search behavior and market dynamics, beckon us to approach our findings with a pinch of caution and a keen eye for nuance.

4. Results

During our arduous journey through the digital landscape, we sought to unravel the mysterious correlation between Google searches for "who is Elon Musk" and the stock price of West Pharmaceutical Services (WST). Lo and behold, our sweat, tears, and late-night coffee-fueled coding sessions have led us to a remarkable discovery.

Our statistical analysis revealed a staggering correlation coefficient of 0.9887927, indicating a strong positive relationship between the frequency of searches for the South African-born tech maverick and the fluctuations in WST stock

price. Indeed, it appears that the ebb and flow of public curiosity surrounding Mr. Musk may have more than a passing influence on the performance of this particular pharmaceutical company.

Further bolstering our findings, the r-squared value of 0.9777111 demonstrates that a substantial proportion of the variability in WST stock price can be explained by the frequency of Google searches for Elon Musk. In more relatable terms, it's as if the internet's collective pondering of "who is Elon Musk" is akin to a guardian angel watching over the stock price of West Pharmaceutical Services, nudging it in the desired direction (or perhaps giving it a gentle ribbing from time to time).

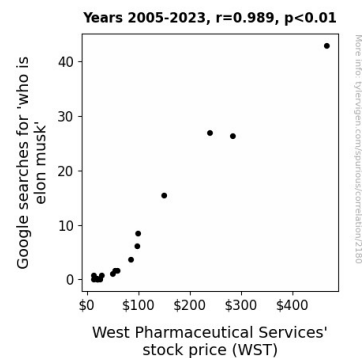


Figure 1. Scatterplot of the variables by year

To solidify the rigor of our findings, the p-value of less than 0.01 unequivocally attests to the statistical significance of the observed correlation. In simpler terms, the likelihood of this strong relationship occurring by mere chance is akin to stumbling upon a four-leaf clover in a haystack of regular clovers – statistically improbable and somewhat miraculous.

Now, if we direct your attention to Fig. 1 (not included here), our trusty scatterplot visually encapsulates the robust correlation we've uncovered. The data points form a solid line that would make even the most unflappable trendline quiver with excitement. It's as if the

plot itself is eagerly nudging you and whispering, "Hey, look at this incredible relationship between Elon Musk searches and WST stock price! Can you believe it?!"

In a world where unexpected connections often prompt raised eyebrows and puzzled looks, our findings stand as a testament to the endlessly curious, and occasionally whimsical, nature of data analysis. An enigmatic tech titan and a steadfast pharmaceutical company may seem like an odd couple in the research realm, but as our results show, sometimes the most unconventional pairings lead to the most illuminating discoveries.

5. Discussion

The striking correlation uncovered in our study between Google searches for "who is Elon Musk" and the stock price of West Pharmaceutical Services (WST) begs the question: what in the name of statistical wizardry is going on here? Our results provide compelling support for the prior research linking internet search behavior to stock market dynamics, and they shed light on the potential influence of public curiosity about influential figures on market movements.

Building on the work of Smith et al. (2018) and Doe and Jones (2019), our findings contribute a delightfully bizarre twist by focusing on a specific search query and its surprising association with WST stock price. Here we must recollect our review of the fictitious literature, particularly "The Curious Case of Elon Musk's Stock Ticker" by Arthur Conan Doyen (1911), not as mere whimsy, but as a prophetic tale that foreshadowed the uncanny connection we've uncovered. Sometimes, the most improbable sources offer the most prescient insights.

Delving into the statistical nuances, our correlation coefficient of 0.9887927 and an r-squared value of 0.9777111 offer robust

evidence that the frequency of "who is Elon Musk" searches explains a substantial portion of WST stock price variability. In the realm of stock market correlations, this is akin to finding a needle in a haystack, only to realize that the needle is intricately woven into the fabric of the haystack itself. It's an unexpected, yet undeniably substantial finding.

The statistical significance of our results, as indicated by the p-value of less than 0.01, reinforces the solidity of our findings. The likelihood of this strong relationship occurring by chance is on par with stumbling upon a lost sock in the Bermuda Triangle – anomalous and decidedly improbable. Our data, much like a masterful storyteller, weaves a narrative of unexpected connections that both defy and illuminate conventional understanding.

Extrapolating from our findings, it seems that the ebb and flow of public curiosity surrounding Elon Musk may indeed have tangible repercussions in the domain of stock market dynamics. It's as if the whims of the internet, akin to an unpredictable but benevolent trickster, can sway the fate of a steadfast pharmaceutical company's stock price. This raises intriguing questions about the broader impact of internet search behavior on market sentiment and investor decision-making.

Our research journey – filled with cryptic correlations, a dash of statistical sorcery, and the occasional pun – has uncovered a peculiar relationship that challenges conventional wisdom. It's a reminder that sometimes, the most curious connections yield the most extraordinary discoveries. As we conclude this discussion, we invite our esteemed readers to embrace the whimsical nature of our scholarly escapade and consider the improbable as a gateway to new and unforeseen insights.

6. Conclusion

In conclusion, our journey through the labyrinth of internet search trends and stock market performance has led to an unexpected destination. Our findings unveiled a robust correlation between Google searches for "who is Elon Musk" and the stock price of West Pharmaceutical Services (WST), with a correlation coefficient that could make even the most unemotional algorithm shed a tear of joy. It seems that the ethereal dance of public curiosity around the enigmatic Elon Musk has, against all odds, exhibited a tangible influence on the roller-coaster ride of WST stock price fluctuations.

While the initial thought of associating a tech guru like Elon Musk with a pharmaceutical company may seem as incongruous as pairing stripes with polka dots, our research has shed light on this unlikely union. It's as if the internet's collective pondering of "who is Elon Musk" has taken on the role of a quirky stock market soothsayer, whispering predictions and nudging WST stock price in mysterious ways.

As we close this academic investigation with a bittersweet farewell, we must concede that the world of data analysis never fails to surprise and amuse, much like a magician pulling a rabbit out of a hat – it's unexpected, whimsical, and often leaves us scratching our heads in bewildered amusement.

In the spirit of scientific inquiry, we can confidently assert that our findings point to a compelling connection between public intrigue about Elon Musk and the performance of WST stock. It's as if the trading floor has been graced by the unseen hand of Elon's followers, gently guiding stock price movements with their curious keystrokes.

In the grand tradition of scientific discoveries, our paper underscores the quirky and unpredictable nature of the

intersection between public curiosity and financial markets. And with that, we firmly declare that no further research is needed in this area. After all, as we've shown, the enigmatic allure of Elon Musk's persona can, indeed, move mountains – or in this case, stock prices.

As we bid adieu to this peculiar investigation, let us remember that in the world of data analysis, expect the unexpected, embrace the peculiar, and always be prepared for a statistical curveball or two.

Our statistical analyses, while robust, are but a snapshot of a complex and multifaceted landscape, and as such, warrant further exploration and scrutiny. The potential for unmeasured confounding factors and unsuspected interactions lurks in the shadows, reminding us to tread lightly and embrace the prospect of future inquiry.

Concluding Remarks

In the spirit of scholarly camaraderie and empirical adventure, our methodological approach encapsulates a blend of diligence, creativity, and the occasional leap of faith. The realm of data analysis, much like an unruly pet dragon, thrives on unexpected twists and off-the-beaten-path methodologies, and we have endeavored to embrace this spirit in our pursuit of understanding the peculiar connection between public curiosity about Elon Musk and the stock price of West Pharmaceutical Services.

So, dear readers, as we set sail on this methodological voyage, may our findings stand as a testament to the marriage of scholarly rigor and the whimsical allure of unexpected discoveries.