# Searchin' for Musk: Investigating the Impact of Google Searches on QUALCOMM's Stock Price

# Charlotte Hamilton, Anthony Tanner, Gavin P Truman

# Advanced Engineering Institute

This paper delves into the intriguing correlation between Google searches for 'who is Elon Musk' and QUALCOMM's stock price, a connection often overlooked in the realm of finance and technology. Leveraging data from Google Trends and LSEG Analytics (Refinitiv), our research team meticulously scrutinized the patterns of these Google searches and the corresponding fluctuations in QUALCOMM's stock price from 2005 to 2023. Remarkably, our analysis revealed a robust correlation coefficient of 0.9467784 with p < 0.01, shedding light on the previously unexplored influence of the public's curiosity about Elon Musk on the market dynamics of QUALCOMM. As we unravel the enigmatic relationship between internet queries and stock performance, this study seeks to spark engaging discussions and, quite possibly, raise a few eyebrows among financial analysts and technology enthusiasts alike.

# INTRODUCTION

The enigmatic world of finance and technology often presents researchers with unexpected connections and correlations that bewilder even the most seasoned analysts. In this context, our study embarks on an investigation to unravel one such uncanny relationship – the impact of Google searches for 'who is Elon Musk' on the stock price of QUALCOMM. While the query might elicit a chuckle or two about the curiosity of the masses, the ramifications of such internet searches on stock performance are nothing short of extraordinary.

With the proliferation of digital information and the ceaseless buzzing of search engines, the public's inquisitiveness towards prominent figures like Elon Musk has become a subject of both fascination and bemusement. Yet, as we dig deeper into this seemingly lighthearted pursuit of knowledge, we unveil the potential influence it exerts on the intricate web of financial market dynamics.

Our endeavor to examine this intriguing correlation serves as a testament to the inquisitive spirit of scientific inquiry – an irresistible urge to shed light on the unseen forces that govern the ebb and flow of stock prices. Admittedly, as we ventured into this research, we found ourselves grappling not only with statistical analyses but also with the sheer whimsy of the human psyche, as demonstrated by these searches. The juxtaposition of the seemingly mundane query with the weighty consequences it may bear on the stock market is indeed a testament to the unpredictability of the world we aim to decipher.

Thus, amidst the sea of charts, graphs, and economic jargon, our study is not merely an exploration of data points and financial indices; it is a foray into the capricious wonders of human curiosity and the ever-surprising dance of market movements. In this murky labyrinth of numbers and algorithms, we strive to bring a glimmer of levity and wit, infused in the pages of our findings, for after all, what is research without a touch of human folly and irony?

As we embark on this journey through the interplay of search queries and stock prices, the reader will come to appreciate not only the statistical rigor of academic inquiry, but also the wry smiles that may accompany the unveiling of our findings. On that note, let us delve into the whimsical world of internet searches and stock market fluctuations, where even the most unassuming questions may hold the key to deciphering the enigmatic mechanics of market forces.

## Review of existing research

The influence of internet searches on stock performance has long been a subject of intrigue and speculation within financial and academic circles. In their seminal work, Smith and Doe (2009) examined the effects of online keyword searches on stock volatility, laying the groundwork for subsequent studies on the intersection of digital footprints and market dynamics. Similarly, Jones et al. (2015) delved into the relationship between social media mentions of prominent tech figures and the valuation of tech companies, providing valuable insights into the impact of online conversations on investor sentiment and stock prices.

Expanding beyond the traditional scope of economic and financial analyses, the intersection of technology and finance has sparked interest in a myriad of interdisciplinary studies. In "The Age of Surveillance Capitalism" by Shoshana Zuboff, the author expounds on the ways in which technology giants leverage user data to drive market strategies, offering thoughtprovoking perspectives on the influence of digital footprints on corporate profitability. Similarly, "The Innovators" by Walter Isaacson sheds light on the intertwining paths of technological innovation and financial success, encapsulating the dynamic nature of the tech industry and its profound implications on market movements.

Delving into the realm of fiction, "The Circle" by Dave Eggers presents a satirical take on the implications of a powerful tech conglomerate's influence on public opinion and financial markets, offering a whimsical yet thought-provoking narrative on the potential ramifications of pervasive online influence. Furthermore, in the classic tale "The Hitchhiker's Guide to the Galaxy" by Douglas Adams, the journey of exploration and discovery mirrors the endeavor to unravel the cryptic relationship between seemingly inconsequential internet searches and stock price fluctuations, providing a lighthearted perspective on the enigmatic forces at play.

In a similar vein, cinematic renditions such as "The Social Network" and "The Big Short" serve as captivating portrayals of the intertwining realms of technology, finance, and human behavior, offering entertaining yet insightful commentary on the unpredictable nature of market dynamics and the role of digital phenomena in shaping investment decisions.

As we traverse the landscape of literature and media, it becomes evident that the connection between digital queries and stock performance resonates not only within the confines of economic discourse but also in the playful narratives of fiction and the captivating visuals of cinema. Thus, our inquiry into the relationship between Google searches for 'who is Elon Musk' and QUALCOMM's stock price serves as a compelling addition to the tapestry of scholarly exploration and a delightful romp through the whimsical nuances of interconnected phenomena.

# Procedure

#### METHODOLOGY

# Data Collection:

To embark on our quest to unravel the clandestine relationship between Google searches for 'who is Elon Musk' and the stock performance of QUALCOMM, we diligently gathered and synthesized an extensive dataset. Leveraging the omnipresent omniscience of Google Trends – the digital oracle of our times – we meticulously tracked the worldwide search interest for the enigmatic Elon Musk from 2005 to 2023. Harnessing the power of LSEG Analytics (Refinitiv), we sourced QUALCOMM's historical stock prices and diligently sieved through the labyrinth of market data to extract the temporal patterns of its stock performance. This entailed navigating through a terrain teeming with financial metrics, where even the slyest of stock price fluctuations sought to elude our vigilant scrutiny.

# Data Analysis:

With the prodigious amalgamation of Google search trends and stock prices at our disposal, we propelled ourselves into the realm of statistical analyses. Employing sophisticated econometric models and time series analyses, our intrepid research team endeavored to tease out the subtle interplay between the spikes and dips in public intrigue about Elon Musk and the quixotic undulations of QUALCOMM's stock price. Like intrepid explorers dissecting the enigmatic engravings on an ancient parchment, we meticulously subjected our data to the rigors of correlation and regression analysis, striving to unearth the hidden signals amidst the cacophony of internet curiosity and market dynamics.

#### Control Variables:

Beyond the esoteric world of logarithmic transformations and autoregressive integrated moving average models, we conscientiously considered various control variables that could potentially confound our findings. Recognizing the capricious capers of confounding variables, we harnessed our heuristic prowess to mitigate the entangling influences of extraneous factors that might potentially obfuscate the true nature of the relationship under investigation. From market volatility to macroeconomic indicators, we meticulously warred against the whims of these variables, ensuring that our endeavor to illuminate the nexus of Google searches and stock prices remained impervious to their insidious charms.

## Ethical Considerations:

While navigating the tumultuous realms of data and analyses, we remained steadfast in upholding the sanctity of ethical research practices. Our pursuit of knowledge was undergirded by an unwavering commitment to integrity, ensuring the judicious handling of sensitive market data and the conscientious dissemination of our findings. With hearts as light as the feathers of a curious question and minds as focused as a laser beam tracing market movements, we strove to navigate the perilous pitfalls of academic inquiry with the utmost ethical rectitude.

Intriguingly, as we traversed the convoluted corridors of data collection and analysis, we were not merely the intrepid researchers deciphering the statistical tapestry of stock prices and search queries. No, we were the purveyors of wit and whimsy, infusing the otherwise dour methodology section with a dash of levity and boundless curiosity. After all, what is a research journey without a hint of audacious charm and intellectual panache?

### Findings

The fervent curiosity surrounding the enigmatic figure of Elon Musk has long been a subject of fascination, and our investigation into the potential impact of the "who is Elon Musk" Google searches on QUALCOMM's stock price has yielded intriguing results. Our analysis of the data from 2005 to 2023 revealed a remarkably strong correlation coefficient of 0.9467784, signifying a robust positive relationship between the frequency of these internet queries and the fluctuations in QUALCOMM's stock price. The goodness of fit, as indicated by the r-squared value of 0.8963893, underscores the substantial proportion of variability in the stock price that can be explained by the corresponding variations in the Google searches for 'who is Elon Musk'. Additionally, the p-value of less than 0.01 further bolsters the statistical significance of this relationship.

Figure 1 presents a scatterplot depicting the conspicuous alignment between the occurrences of Google searches for 'who

is Elon Musk' and the oscillations in QUALCOMM's stock price. The unmistakable pattern revealed in this visual representation echoes the underlying statistical findings, emphasizing the coherent association between these seemingly disparate variables.

The implications of these findings extend beyond the confines of traditional financial analyses. It is worthwhile to note that the widespread interest in Elon Musk, as evidenced by these search queries, appears to resonate with discernible movements in the stock price of a technology company such as QUALCOMM. We are confronted with the intriguing prospect that the ebb and flow of market sentiment, as mirrored in these internet searches, may exert discernible effects on stock price dynamics.



Figure 1. Scatterplot of the variables by year

The robustness of the observed correlation between Google searches for 'who is Elon Musk' and QUALCOMM's stock price, while initially surprising, provides a glimpse into the complex and often perplexing interplay of digital curiosity and financial market dynamics. As we navigate the labyrinthine pathways of this correlation, it becomes increasingly evident that the whims of the collective online consciousness may ripple through the intricate tapestry of market forces, serving as a reminder of the capricious nature of human behavior and its influence on economic outcomes.

In summary, our investigation has unearthed a substantial relationship between Google searches for 'who is Elon Musk' and the movements in QUALCOMM's stock price, shedding light on an unconventional yet compelling interconnection between internet queries and market behavior. These findings prompt us to reevaluate the conventional boundaries of financial analyses and to consider the unanticipated ramifications of digital curiosity on the ever-evolving landscape of stock prices.

#### Discussion

The results of our investigation have brought to light a noteworthy association between Google searches for 'who is Elon Musk' and the fluctuations in QUALCOMM's stock price, adding a layer of complexity to the intricate web of market dynamics. While our inquiry may have initially elicited a raised eyebrow or two, the robustness of the correlation uncovered

aligns with prior research that hints at the profound implications of digital phenomena on stock performance.

Drawing upon the findings of Smith and Doe (2009), who delved into the effects of online keyword searches on stock volatility, our study echoes their exploration of the influence of digital footprints on market behavior. The considerable correlation coefficient observed in our analysis underscores the potential impact of online curiosity on stock price movements, mirroring the implications of earlier research and affirming the relevance of digital inquiries in shaping market sentiment.

In a similar vein, the work of Shoshana Zuboff in "The Age of Surveillance Capitalism" offers a thought-provoking perspective on the influence of user data on corporate strategies, highlighting the intricate relationship between digital footprints and market dynamics. Our findings further underscore the relevance of such insights, as the widespread intrigue surrounding Elon Musk, as reflected in Google searches, appears to resonate with tangible movements in the stock price of QUALCOMM, illustrating the intricate interplay between online curiosity and market forces.

Furthermore, the lighthearted yet thought-provoking narrative presented in "The Circle" by Dave Eggers and the whimsically insightful journey in "The Hitchhiker's Guide to the Galaxy" by Douglas Adams resonate with our exploration of the interplay between seemingly inconsequential internet searches and stock price fluctuations, offering compelling parallels that underscore the nuances of this relationship.

This investigation enriches the interdisciplinary tapestry of scholarly exploration, offering a lighthearted romp through the whimsical nuances of interconnected phenomena. The conspicuous alignment between the occurrences of Google searches for 'who is Elon Musk' and the oscillations in QUALCOMM's stock price serves as a delightful addition to the intrigue of market dynamics, infusing a touch of whimsy into the realm of financial and technological analyses.

As we navigate the labyrinthine pathways of this correlation, it becomes increasingly evident that the whims of the collective online consciousness may indeed ripple through the intricate tapestry of market forces, serving as a reminder of the capricious nature of human behavior and its influence on economic outcomes. These findings prompt us to reconsider the conventional boundaries of financial analyses and to delight in the unanticipated ramifications of digital curiosity on the everevolving landscape of stock prices.

#### Conclusion

In conclusion, our research has peeled back the layers of the seemingly random and whimsical world of Google searches to reveal a surprising connection to the stock price movements of QUALCOMM. The robust correlation coefficient of 0.9467784, with a p-value of less than 0.01, unequivocally demonstrates the substantial relationship between the frequency of 'who is Elon Musk' searches and the oscillations in QUALCOMM's stock price. It is indeed remarkable how the curiosity about a visionary technocrat can manifest in the financial sphere, almost

as if the market is being steered by the collective musings of the online populace.

As we ponder the implications of these findings, one can't help but marvel at the wonder of human curiosity and its unforeseen influence on the stoic world of stock markets. It's as if the mere contemplation of Elon Musk's achievements and enigmatic persona sends ripples through the fabric of market dynamics, suggesting that perhaps, in the vast expanse of economic theories, the whimsy of human behavior still reigns supreme.

Therefore, in the spirit of scientific inquiry, we assert with a touch of irony that no further research is needed in this area. For it seems that the inexplicable connection between internet searches for a certain visionary and the stock price of a technology company has been unveiled, offering a subtle reminder that in the labyrinth of market forces, the human touch prevails, even in the most unexpected of ways.