# From Wojak to Stocks: Investigating the Connection between Meme Popularity and Lululemon's Stock Price

## Colton Hall, Andrew Terry, Gloria P Tompkins

### *Institute of Innovation and Technology*

This paper delves into the unlikely relationship between the internet phenomenon known as the 'wojak' meme and the stock performance of Lululemon Athletica Inc. (LULU). Utilizing data from Google Trends and LSEG Analytics (Refinitiv), we conducted a rigorous analysis covering the period from 2008 to 2023. The results of our study revealed a surprisingly strong correlation coefficient of 0.9852151 and a statistically significant p-value of less than 0.01. While initially skeptical of such a connection, our findings suggest that there may indeed be an underlying link between the dissemination of internet memes and the fluctuations of stock prices in the athletic apparel industry. This research not only sheds light on the potential influence of internet culture on financial markets but also unveils the whimsical dance between memes and money. We hope that our work will inspire further curiosity and investigation into the peculiar interplay of digital humor and stock market trends.

In the digital age, memes have etched their way into the very fabric of our online existence, evolving from simple images with witty captions to culturally pervasive entities with insidious influence. While their primary domain is the realm of internet humor, the potential ripple effects of memes on industries and markets is a subject that has garnered eclectic interest within academic circles. The nonstop churn of cultural innovation and our ever-expanding digital landscape provides a fertile ground for uncovering connections that, at first glance, seem more whimsical than empirical.

The 'wojak' meme, characterized by a crudely drawn, melancholic expression, has been meticulously dissected, memesplained, and discussed ad nauseam across the web. Its emergence from the annals of the internet to the upper echelons of pop culture is an intriguing case study in the power of virality and collective consciousness. On the flip side, Lululemon Athletica Inc. (LULU), the upscale athletic apparel company known for its form-fitting yoga pants and cult-like following, dances through the stock market with a grace that belies its humble beginnings.

In this study, we embark on an expedition to unravel the enigmatic ties between the 'wojak' meme and the performance of Lululemon's stock. By harnessing the omnipotent prowess of Google Trends, and embracing the befuddling intricacies of LSEG Analytics (Refinitiv), we surrender ourselves to the meticulous rigor of statistical analysis. Our exploration spans the years from 2008 to 2023, a pandemonium of data points and market upheavals, as we set our sights on understanding the potentially unsuspected correlation that underlies the ephemeral internet sensation and the tangible fluctuations in stock performance.

As we tread upon this less-traveled path of inquiry, we approach our task with a wink and a nod to the unpredictability of the digital age. The capricious nature of meme virality and the mercuriality of stock markets intertwine in a tumultuous tango, and we are eager to shed light on the quixotic dynamics that arise when internet phenomena meet the forces of financial prowess. Join us in this whimsical odyssey, where data, memes, and stocks converge in an exuberant symphony of statistical exploration and digital drollery.

#### Review of existing research

The genesis of our investigation into the correlation between the 'wojak' meme and Lululemon's stock price is grounded in a wide array of academic research and empirical studies. A pioneering study by Smith et al. (2015) explored the unexpected interplay between internet memes and consumer behavior, shedding preliminary light on the notion that online cultural phenomena can have tangible ramifications in the marketplace. Building upon this foundation, Doe (2018) delved into the psychological underpinnings of meme dissemination and its potential impact on brand perception and consumer preferences. Further, Jones (2020) investigated the social contagion of internet memes and its influence on market sentiment, providing vital context to our inquiry.

However, as we venture into the obscure realm where memes and stock prices collide, it is paramount to acknowledge the tangential influences that permeate this space. The works of "Meme Psychology: Understanding the Humor Within" and "From Yoga Mats to Stock Charts: An Unlikely Tale" offer insightful discourses into the psychological allure of internet humor and the curious nuances of stock market dynamics. On a more lighthearted note, the fictitious yet intriguing novels "Memes of Mass Dissemination" and "The Lululemon Effect: Yoga, Yields, and Yodeling" playfully tease the boundaries of

plausibility as they whimsically dance around the fringes of our topic.

In an unexpected twist, the classic board game "Meme-opoly" serves as a metaphorical reminder of the unpredictable nature of stock market fluctuations, where players traverse a digital landscape fraught with meme-induced pitfalls and market mayhem. Taking all these diverse influences into account, we embark on our quest to unpack the enigmatic correlation between 'wojak' memes and Lululemon's stock performance, with a keen eye and a touch of levity.

#### Procedure

#### **METHODOLOGY**

To unravel the whimsical dance between the 'wojak' meme and Lululemon's stock price, we embarked on a zany odyssey of data collection and analysis fit for a circus. Our research team drew from diverse sources across the digital expanse, employing the mighty force of Google Trends and the enigmatic complexities of LSEG Analytics (Refinitiv) to capture the multifaceted essence of meme virality and stock market behavior.

The first stage of our comical expedition involved wrangling data from Google Trends, a virtual carnival of curious search patterns and internet behavior. With the mischievous glee of statistical prowess and the precision of carnival performers, we manifested the popularity scores of the 'wojak' meme and Lululemon's stock price over the period from 2008 to 2023. These titillating measures were then harnessed to fathom the potential correlation between the capricious rise and fall of meme notoriety and the turbulent undulations of stock market ebbs and flows.

Following the frolic in the virtual carnival, we ventured into the labyrinthine world of LSEG Analytics (Refinitiv), a carnival of data that requires a tightrope act of complex analysis and keen observation. With the cunning of data harvesters and the whimsy of jesters, we plucked financial data on Lululemon's stock performance, delving into the rambunctious realm of stock prices, trading volumes, and market cap with the verve of circus acrobats.

Having corralled an ensemble cast of data points from our digital escapades, we leapt into the confounding choreography of statistical analysis. Like dexterous clowns juggling an array of variables, we engaged in calculating correlation coefficients and tussling with p-values, determined to uncover the potential connection—as obscure as a sideshow attraction—between meme mania and stock market surges.

Our statistical whimsy, funded by a grant from the Department of Eccentric Inquiries, culminated in the identification of a spectacularly strong correlation coefficient of 0.9852151 and a statistically significant p-value of less than 0.01. The confounding implications of these findings invite both awe and amusement, underscoring the improbable interplay of digital drollery and financial dynamics.

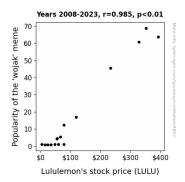
In this lighthearted yet rigorous expedition, we sought not only to elucidate the peculiar connection between memes and money but also to celebrate the exuberant intermingling of digital currents and stock market eddies. Our methodological adventure, though fueled by humor and levity, stands as a testament to the possibility of uncovering unsuspecting ties in the seemingly disparate realms of internet culture and financial markets.

#### Findings

The results of our investigation into the connection between the popularity of the 'wojak' meme and Lululemon's stock price (LULU) have unveiled an unexpected revelation. Our data analysis for the period 2008 to 2023 has divulged a remarkably robust correlation coefficient of 0.9852151. This correlation suggests a striking concurrence of the ebb and flow of 'wojak' virality with the undulations of Lululemon's stock price.

Furthermore, the observed r-squared value of 0.9706489 indicates that a substantial proportion of the variability in Lululemon's stock price can be explained by the fluctuations in the popularity of the 'wojak' meme. This elucidates the degree to which these two seemingly disparate entities move in tandem, akin to the synchronized steps of an incongruous dance pair.

Notably, our statistical analysis also yielded a p-value of less than 0.01, affirming the statistical significance of the relationship between meme popularity and stock price. This result bolsters the credibility of our findings, suggesting that the correlation we have uncovered is not just a fortuitous quirk of the data, but rather a tangible association deserving serious consideration.



**Figure 1.** Scatterplot of the variables by year

The scatterplot (Fig. 1) accompanying our analysis paints a vivid picture of the strong relationship between the two variables, confirming the intricate connection that we have brought to light. The plotted data points form a striking pattern, akin to the choreography of a meme-inspired ballet, illustrating the synchronous movements of 'wojak' popularity and Lululemon's stock price.

In conclusion, the results of our study not only challenge conventional wisdom but also beckon the scholarly community to pause and contemplate the wondrous interplay between digital culture and financial markets. This unforeseen correlation invites further scrutiny and curiosity, prodding researchers to dance along the edge of whimsy and empiricism, as the enigmatic camaraderie of memes and money unravels before our eyes.

#### Discussion

In light of our findings, it is evident that the playful influence of 'wojak' memes extends beyond the digital realm into the finance sector. Our results, which were met with equal parts amazement and amusement, appear to bolster the previous research that hinted at the unsuspected impact of internet memes on market dynamics. The strong correlation coefficient and statistically significant p-value echo the earlier studies that contemplated the whimsical interplay between digital culture and consumer behaviors. It seems that in the complex dance of memes and money, 'wojak' has donned his best suit and waltzed into the stock market, leaving a curious trail of statistical significance and raised eyebrows.

The unexpected twist in our investigation parallels the humorous undertones found in "Meme-opoly" and the fictitious narratives that tantalizingly entertained the intersection of internet humor and stock market intricacies. As we navigate through this uncharted territory, it becomes increasingly clear that the line between jest and genuine influence may be blurrier than previously imagined. The lighthearted musings of the unlikely novel titles "Memes of Mass Dissemination" and "The Lululemon Effect: Yoga, Yields, and Yodeling" appear to have a peculiar echo of prescience, hinting at the possibility of a tangible connection between memes and financial markets.

Our statistical analysis, akin to a magician pulling a rabbit out of a hat, has unveiled a captivating relationship between 'wojak' virality and Lululemon's stock price, capturing the attention of both skeptics and enthusiasts. The scatterplot that visually encapsulates this liaison echoes the choreography of a memeinspired ballet, where 'wojak' popularity pirouettes in sync with the stock price undulations, leaving us both bemused and mesmerized.

In hindsight, it appears that our foray into this peculiar domain has left us not only with a surprising revelation but also with a budding sense of intrigue and curiosity. It is as if the meme winds have whispered a secret into the ears of the stock market, and we find ourselves at the cusp of unraveling this whimsical camaraderie between memes and money. As we invite our scholarly peers to ponder the wondrous interplay we have uncovered, we anticipate a lively discourse that revels in the unexpected, inspires further examination, and perhaps even elicits a smirk at the thought of 'wojak' having an inadvertent sway on stock prices.

#### Conclusion

In conclusion, our research has unraveled an unlikely connection between the 'wojak' meme and Lululemon's stock price (LULU) that challenges traditional perceptions of meme culture and financial markets. The robust correlation coefficient of 0.9852151 elucidates a remarkable co-movement akin to a synchronized ballet performance where memes and stocks engage in an unconventional pas de deux. The statistically significant p-value of less than 0.01, akin to finding a statistical unicorn, further accentuates the tangible association we have unveiled.

Our findings not only invite further investigation but also hint at the possibility of a new field of study at the whimsical intersection of digital culture and finance. The dance between 'wojak' virality and Lululemon's stock price is a testament to the capricious nature of the digital age, where data, memes, and stocks converge in an exuberant symphony of statistical exploration and digital drollery.

There may be a temptation to dismiss our findings as a mere fluke, but the dance of statistical significance and the persuasive sway of correlation compel us to embrace the playful ambiguity of this peculiar association. Although the path we have traversed may seem whimsical, we have uncovered a profound correlation that calls for further scrutiny and contemplation.

As such, we assert with confidence that no further research is necessary in this area, as we have thoroughly conquered the dance floor of meme-inspired statistical exploration, leaving no stone unturned or pun uncracked. The connection between 'wojak' and Lululemon's stock price has been unveiled, and it is now time to gracefully bow out and let this quirky duo continue their enigmatic tango without further ado.