



WALL STREET BETS

G A M E S T O P A N A L Y S I S

B Y

S T E F A N I A M E N I N I

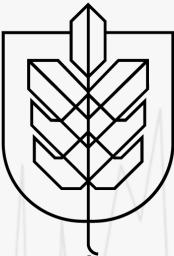




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THE ANALYSIS OBJECTIVE

Given WallStreetBets historical data, the objective of the present analysis is to identify any post linked to GameStop to properly investigate any early indication or signal of GameStop's ground advance, early symptom of an imminent move towards the short squeeze.



A POPULIST FAIRYTALE ?

Founded in Dallas in **1984**, GameStop Corp. is an American video game, consumer electronics, and gaming merchandise retailer.

Recently, GameStop has gained significant **media attention** due to a short squeeze arranged by WallStreetBets's users, which made the company's stock price skyrocketed.

As it is shown in the graph, the short squeeze resulted in a **1,500 percent increase in GameStop's share price**, which reached a record-breaking peak of **US\$347.51 on January 27, 2021**.



WALL STREET BETS

CRUSHING WALL STREET

WallStreetBets is a **Reddit community** of 9.3 million users, founded in 2012, dedicated to high-risk stock bets, comparable to gambling, where participants discuss stock and trading opportunities.

WallStreetBets has lately gained **unprecedented popularity** due to its aggressive trading strategies, which have generated losses on short positions in U.S. firms topping US\$70 billion in few days.



9.3
MILLION USERS
GAMBLING ON STOCKS



\$19.7
BILLION LOSS
FOR GAMESTOP SHORT
SELLERS



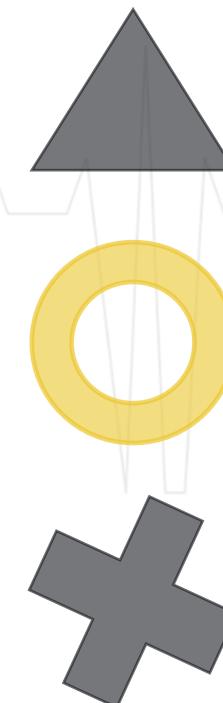
THE ANALYSIS

METHODOLOGY

A subset of the original WallStreetBets's dataset, called “**wsb_data**”, has been created to properly gather all posts' titles and comments published among the community **from the 1st to the 25th of January 2021.**

Also, **additional 4 subsets** have been created to deeply investigate WallStreetBets's users' **daily thoughts and emotions** right before the short squeeze.

Lastly, different **subsets' comparisons** on terms' frequencies, words' association, polarity, and sentiment will be performed **to gain insights** on any early evidence that GameStop was winning traction within the subreddit community.





THE ANALYSIS METHODOLOGY

MAIN DATASET'S SUBSETS

1 COMMENT_1_21

WallStreetBets's comments from the 1st to the 21st of January 2021, the timeframe with fewer comments.

2 COMMENT_22

WallStreetBets's comments of the 22nd of January 2021, where a high level of interaction have been detected.

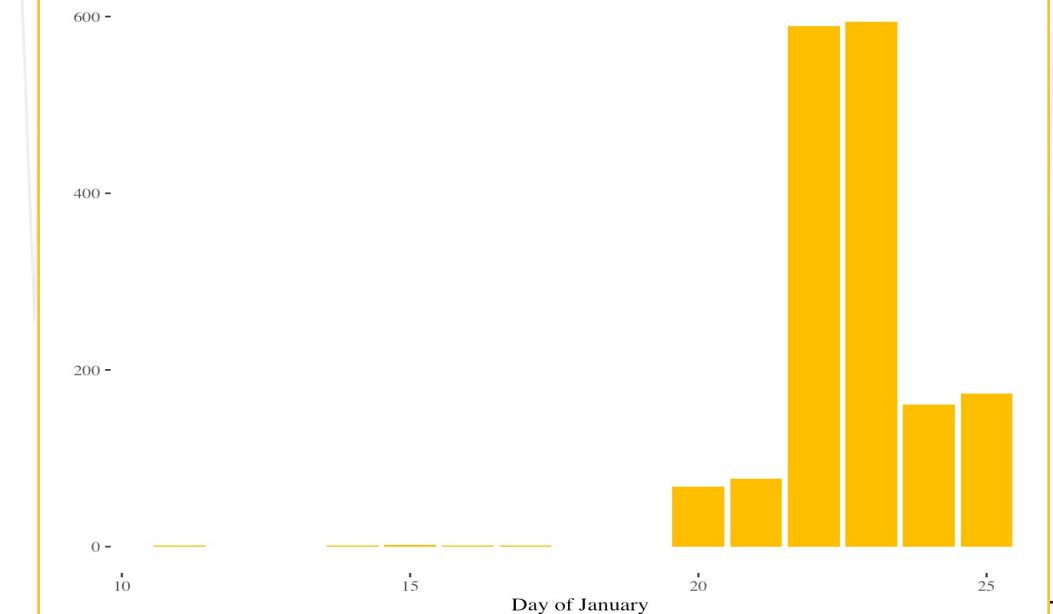
3 COMMENT_23

WallStreetBets's comments of the 23rd of January 2021, where the highest level of interaction have been detected.

4 COMMENT_24_25

WallStreetBets's comments from the 24th to the 25th of January 2021, having a low-medium level of interaction.

COMMENTS BEFORE THE SHORT SQUEEZE





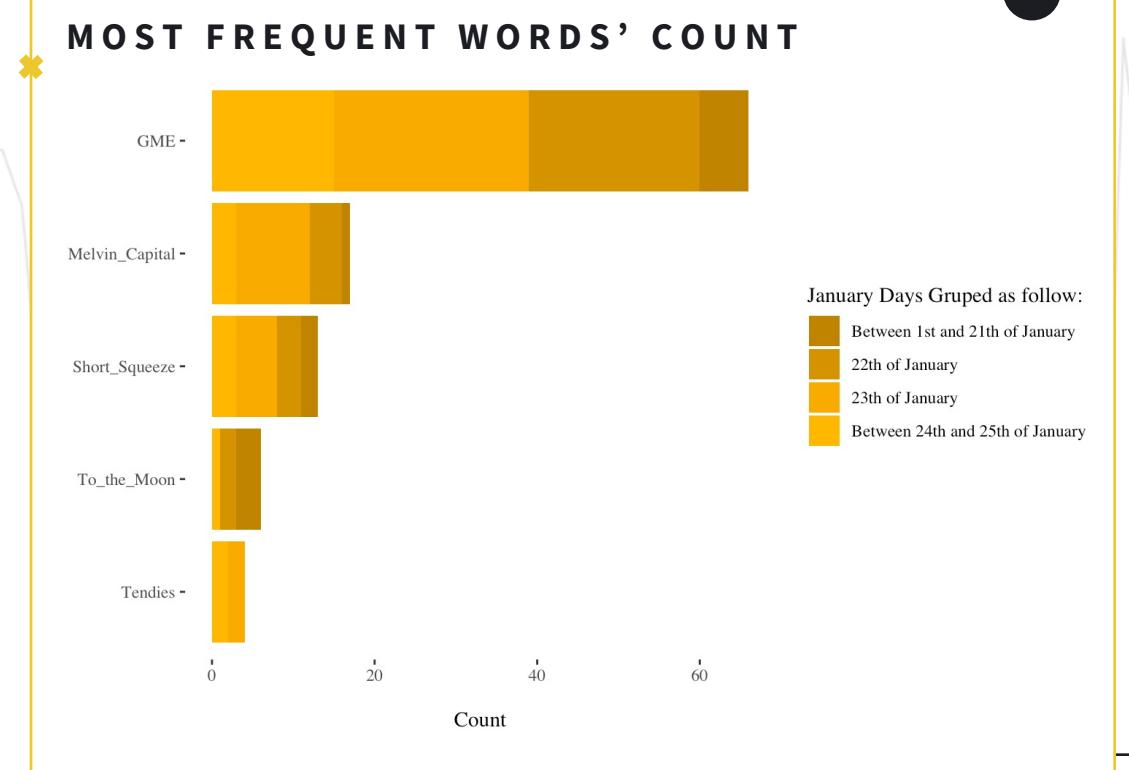
THE TEXT ANALYSIS

WORDS COUNT & MENTIONS' FREQUENCY

The word frequency analysis of some of the most well-known terms belonging to the **WallStreetBets' slang dictionary** has revealed the following frequencies for the period **from the 1st to the 25th of January**:

- ✖ *Melvin Capital*: **1.14%**
- ✖ *Short Squeeze*: **8.81%**
- ✖ *To the Moon*: **4.32%**
- ✖ *Tendies*: **2.52%**
- ✖ *GME*: **10.31%**

Secondly, the subsets' comparison on the terms' count has revealed that the **23rd of January** is the day where "*GME*", "*Short Squeeze*", and "*Melvin Capital*" have been mostly mentioned.



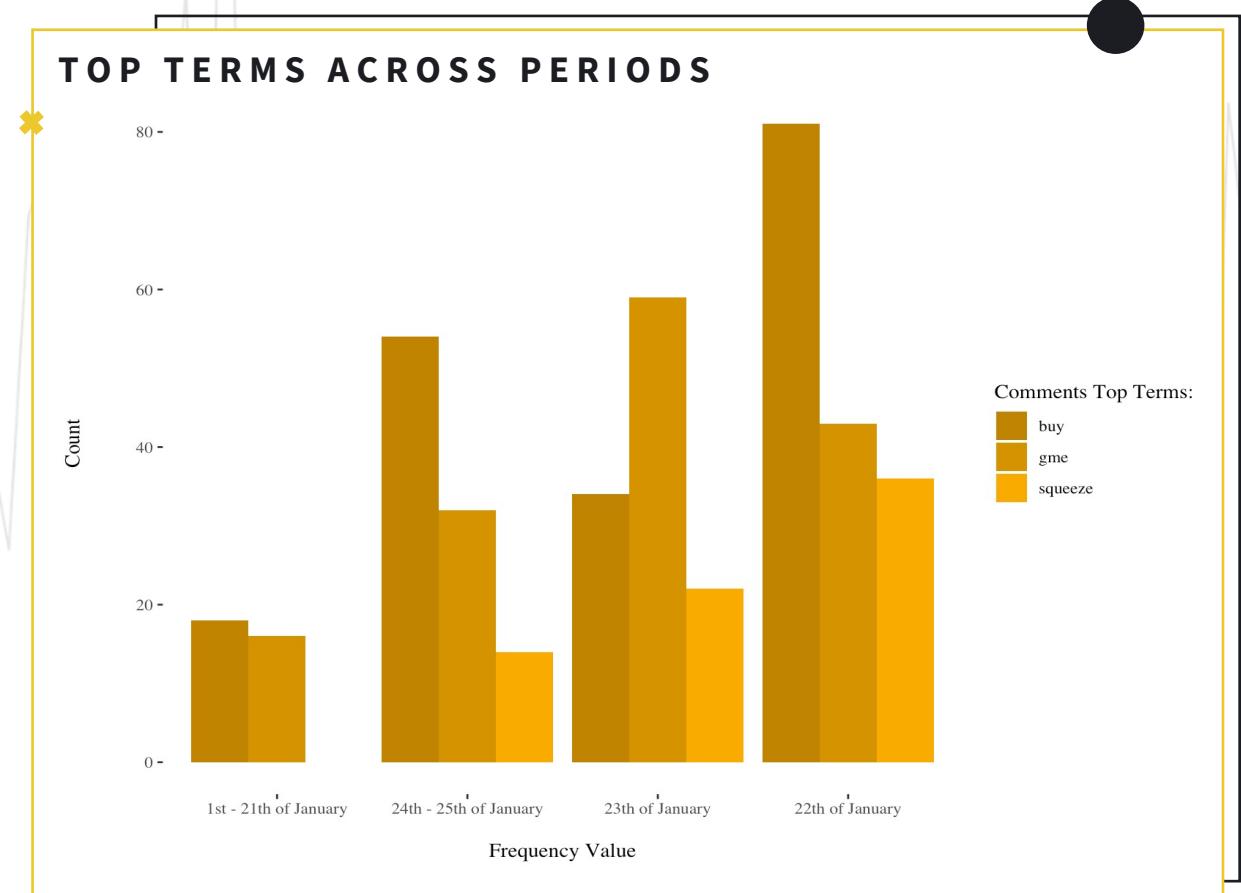


THE TEXT ANALYSIS

TOP TERMS ACROSS PERIODS

The subsets' top terms comparison has highlighted "**buy**" and "**gme**" as recurrent top terms in each analyzed period.

However, from the 22nd of January, the word "**squeeze**" has progressively gained ground within the following periods' rankings.

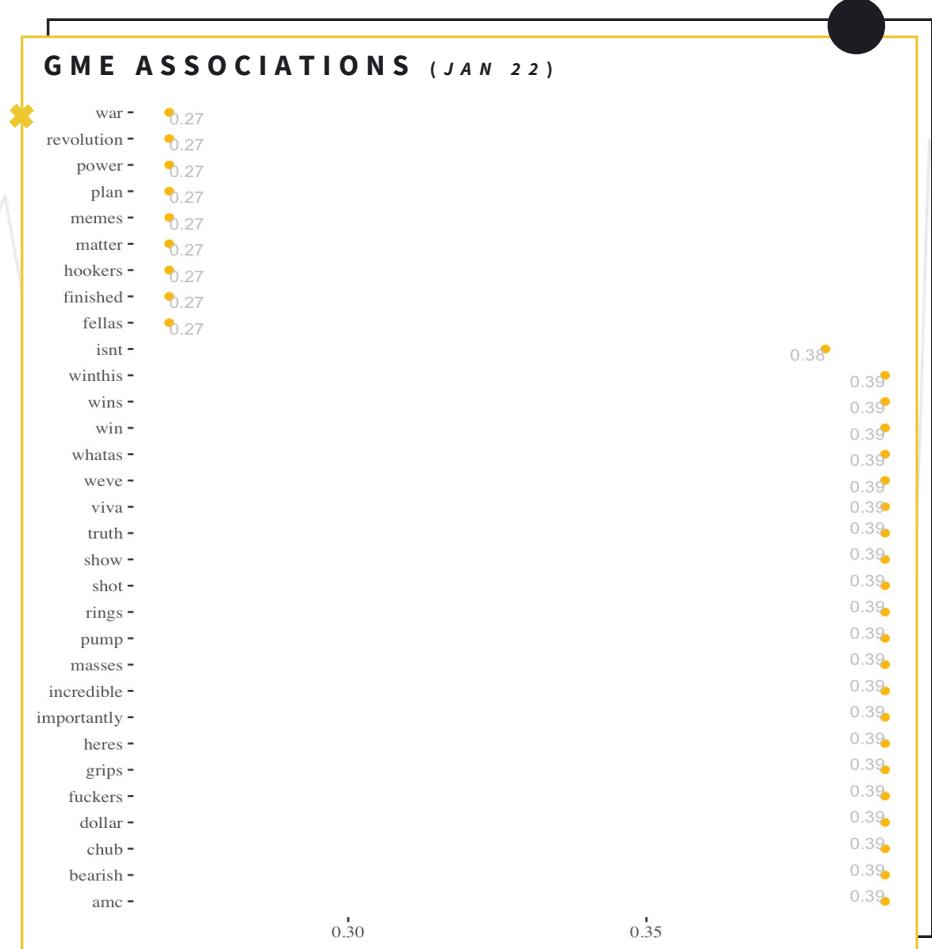




THE TEXT ANALYSIS ASSOCIATION ANALYSIS

According to the association analysis, the most insightful results have been detected on the **22nd of January 2021**.

Almost 4 days before GameStop's short squeeze, words that declare **revenge**, **revolution**, and **win** are largely used within the WallStreetBets community **in association with "gme"** as well as terms of **excitement**. This might suggest that something interesting was about to happen concerning GameStop.



THE ECHARTS 4R D3 VIZ COMPARISON ACROSS YEARS (BEI)

2021

inb hesitate comedy hurts combined hiding basket
calls retards trading
money core isn't irc ice list itm
yoloman week hip love hrs hes hod fbi hoax
people wtf kiss horns ass helpful fun hits color highs
act hot talk limit heel lill bet bro hears
bid lost tzu colluded talk barf fit lvl till heat
put fly left fyi risk runlit til hts live
kid beat dfv die hard hurrri god year dip
dfv die hard hurrri god year dip
die hard hurrri god year dip
hide heck
call sir
heaven honed
moon hop sad
back guys
you're combination
yall shorts edit
basis firm wait
find kills
part pro lac
play horse
basics
isa ittttt
day play
imagine
heroism comedies hidden
hesitant turn pay
end read top
hit ibk
herethank
solo
herethat guy
start
irish
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long
hurl
hestia half
half
hella
base ill hurt
hill sit jail con
ppl jan huh
bat
part pro lac
sell fuck

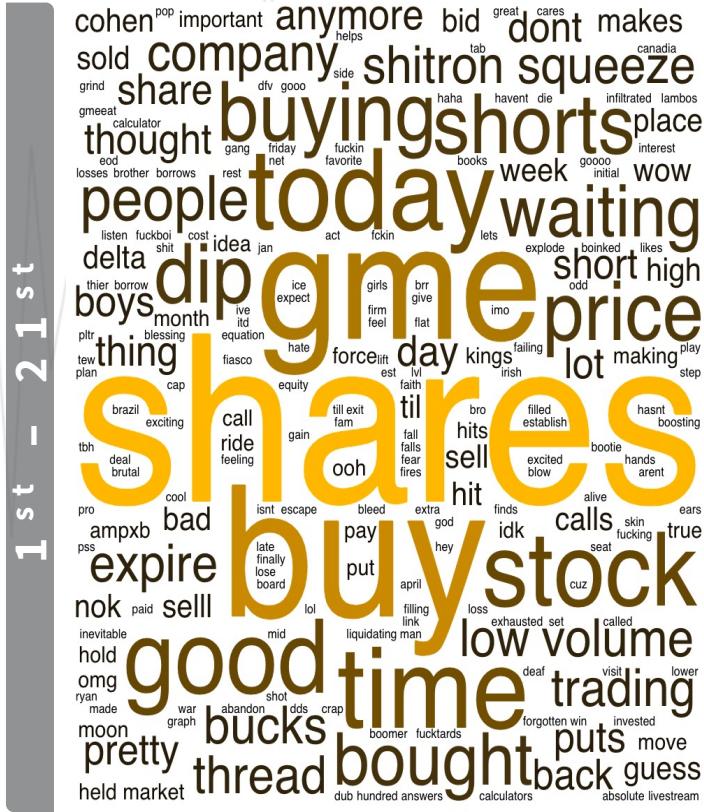


The yearly comparison
of Echarts4R D3 Viz has
revealed that, **between 2019**
and 2020, GameStop wasn't
yet amongst the top topics
discussed by the
WallStreetBets community.

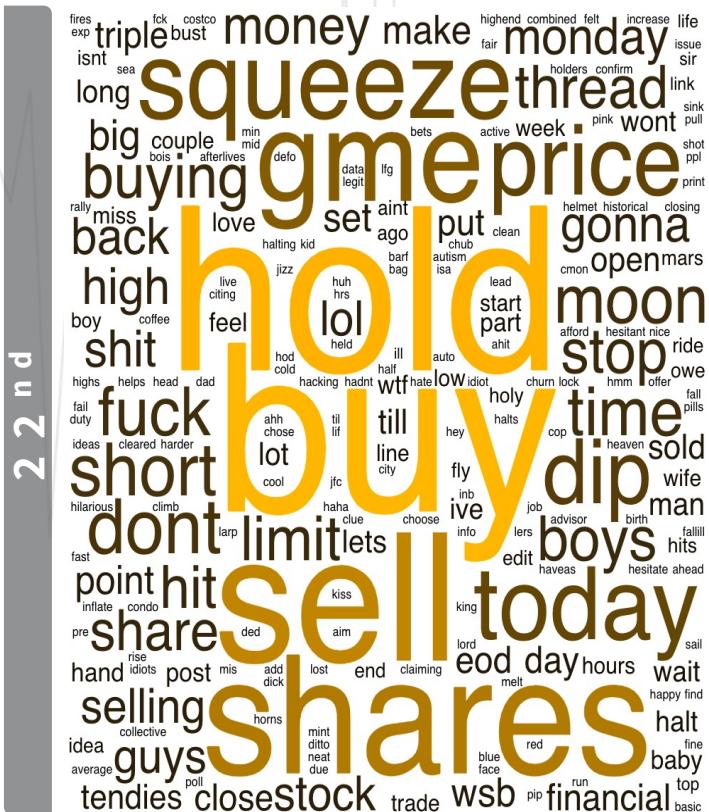
1

THE ECHARTS4R D3 VIZ COMPARISON ACROSS JANUAR

1 st = 21 st



22nd



The daily comparison of Echarts4R D3 Viz has revealed that, **between the 1st and the 21st of January**, the WallStreetBets community was moving towards the idea of “**buying gme shares**”.

From January 22nd, most of the daily Echarts4R D3 visualizations examined have shown the progressive presence not only of "gme" but also of "**squeeze**".

POLARITY ANALYSIS

ACROSS PERIODS

According to the polarity analysis, **from the 1st to the 25th of January**, the overall average polarity is **-0.19**.

Investigating deeper the polarity across periods, an average polarity of **0.029** registered **between the 1st and the 21st of January** has left the space to a negative polarity of **-0.023** registered on the **22nd**.

However, while the lowest average polarity has been reached on the **23rd of January** with a score of **-0.027**, from the **24th** it has started getting **closer to zero**.



vow native movie
means invested management
bubble behind haha
erday ahead premarket easy
comes putting welcome ~~s~~ daily
buddy rest grab orders ~~on~~ ask
~~o~~llarhours definitely ~~alone~~ excited
consider linkadvice control
threat death okay dds
ick idiots sell online boy
ve write sad group pure
gotten. fake false
enet institutions franklyentir
tldrblame dumped ratemiddle
generations constant
institution fool ice harassment fraud
wardly wealth opt dealing

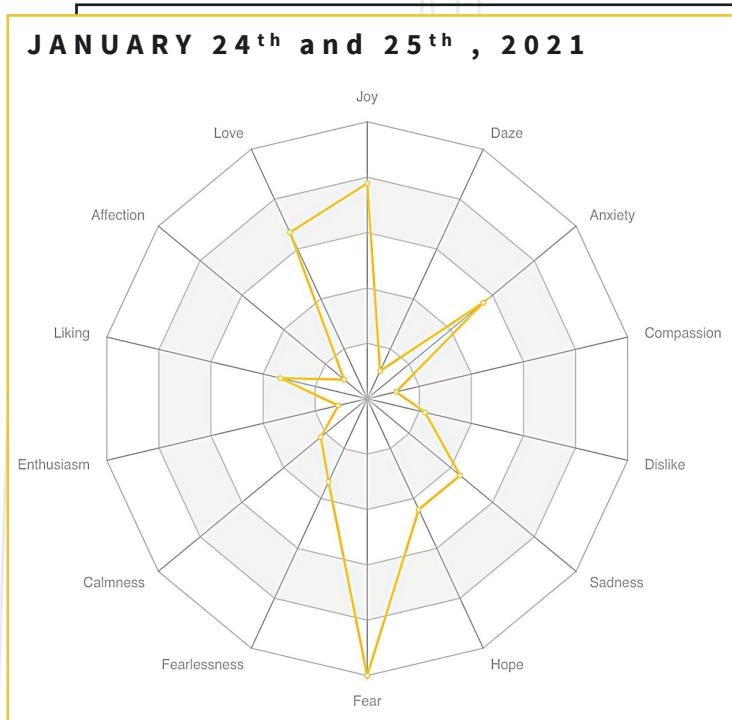
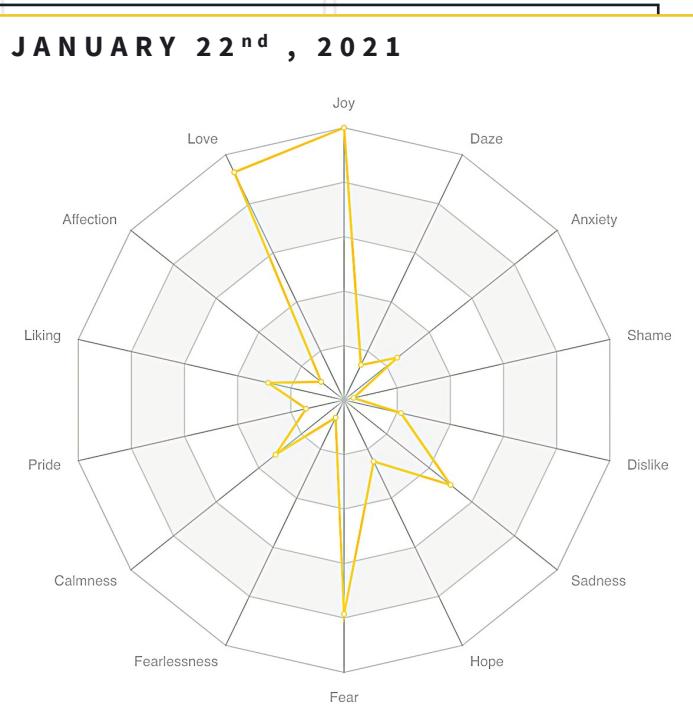
Positive

Negative



SENTIMENT ANALYSIS

WSB EMOTIONS ACROSS PERIODS



Conflicting emotions mark the month of January and, especially, the days preceding GameStop's short squeeze.

As the squeeze and the prompt media response approaches, "**anxiety**" and "**fear**" spread among the WallStreetBets community, while sentiments such as "**love**" and "**joy**" drop.



AN INVESTMENT THESIS ON THE MAIN INSIGHTS

1

According to the "echarts4R D3" and "wordcloud" visualizations, GameStop has **started gaining traction** within the WallStreetBets subreddit community in **January 2021**.

2

According to the text analysis performed on the community words' mentions and frequencies, most of the WallStreetBets' users started to be **poised to move** mainly **from the 22nd of January 2021**.

3

During the first three weeks of 2021, **no recurrent emotions have been detected** mainly due to frequent mood swings. However, "**love**" has been an **exception**. This result might have been caused by the frequent use of **emoticons or slang expressions** which might have led the sentiment analysis to **misleading results**.





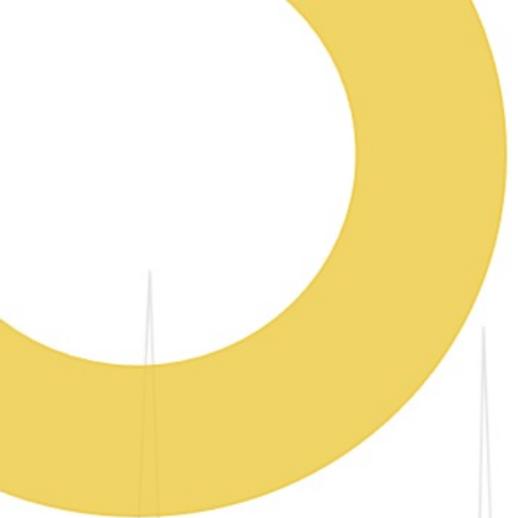
AN INVESTMENT THESIS

CONCLUSIONS

Natural language processing tools have been crucial to deeply investigate WallStreetBets users' interactions and discussions right before the GameStop's squeeze.

The careful adoption of tools such as word sentiment or frequency analysis has driven to the identification of where, among any ambiguous WallStreetBets' slang expression or emoticon, signals of early evidence might have been hidden. To conclude, the usage of NLP tools would have avoided or at least minimized hedge funds and short sellers' losses.





**THANK
YOU!**

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