PUBLIC SENTIMENT ANALYSIS OF ROBINHOOD ACROSS THE GAMESTOP EPISODE

A Report on Twitter-Based Text Analytics to Examine User Emotions, Discourse Evolution, and Implications for Platform Trust

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Statement of the Problem

Robinhood, a mobile trading platform founded in 2013, aims to democratize finance by making investing accessible to first-time and retail investors. By early 2021, the platform had over thirteen million users, with half being first-time investors. Robinhood revolutionized the brokerage industry by offering commission-free trading, a user-friendly mobile app, and innovative features such as fractional shares, cryptocurrency trading, and options investing. Its "game-like" interface, combined with referral incentives and educational resources, attracted younger investors and created a highly engaged user base, positioning Robinhood as a leading platform for retail trading.

In *January 2021*, Robinhood became the central platform for retail investors participating in the unprecedented surge in **GameStop (GME)** stock. The spike in GME's share price was largely driven by a short squeeze orchestrated on Reddit by retail traders, which forced hedge funds like **Melvin Capital**, who had heavily shorted the stock, to incur substantial losses. The rapid price movements created extraordinary demand for trading on Robinhood, triggering liquidity and collateral constraints due to the settlement process managed by clearinghouses. To meet these requirements, Robinhood restricted purchases of GME and a few other volatile stocks on *January 28*, *2021*. This decision led to immediate backlash from users, criticism on social media, and public scrutiny from prominent figures, raising serious concerns about Robinhood's brand reputation, customer trust, and regulatory exposure.

The GME episode exposed multiple challenges for Robinhood. Users perceived the trading restrictions as favouring hedge funds over retail investors, which undermined the company's reputation and trust as a platform for democratized investing. The situation also attracted regulatory attention, with Congressional hearings highlighting potential compliance and oversight risks. Operational constraints related to collateral and liquidity requirements emphasized vulnerabilities in the company's settlement and trading infrastructure. In addition, the app's "game-like" features, while appealing to retail investors, raised concerns about investor safety and risky trading behaviours, as underscored by prior incidents such as the Alex Kearns tragedy.

To address these challenges, Robinhood is examining user sentiment, emotions, and themes from social media data, particularly ***Twitter***, which the company has already collected and categorized across three phases: **"Before"** the surge ***(January 12–21)***, **"During"** the peak short squeeze ***(January 22–February 1)***, and **"After"** the peak ***(February 1–11)***. Analysis of this data will enable the company to understand user reactions throughout the event, identify key topics and themes affecting public perception and regulatory concerns, and develop evidence-based strategies to manage communications, improve platform safety, and restore trust.

The critical questions guiding Robinhood's response include:

- How did user sentiments and emotions evolve across the "Before," "During," and "After" phases of the GME situation?
- What topics and themes dominate public conversations about Robinhood, and how should the company respond, especially in high-profile settings such as Congressional hearings?
- Based on user feedback and sentiment trends, should Robinhood focus on PR campaigns, app modifications, or a combination of strategies to rebuild trust and mitigate risk?
- How should Robinhood respond to online allegations or clarify operational processes such as Payment for Order Flow (PFOF) and trade settlement times to improve transparency and credibility?

By addressing these questions, Robinhood can develop a data-driven strategy to manage immediate fallout from the GME debacle, repair reputational damage, and strengthen long-term customer trust. Insights from social media sentiment and behaviour can guide proactive measures to prevent future crises, enhance platform design and investor education, and maintain Robinhood's role as a trusted, transparent platform for retail investors in a dynamic trading environment.

Analysis and Results:

To address the first research question, the analysis examines *Twitter* data related to Robinhood across the "Before," "During," and "After" phases of the GameStop debacle. The investigation employs multiple text analytics techniques, including ***word clouds***, ***sentiment analysis***, ***emotion detection***, and ***parts-of-speech tagging***, using the **Enginius Marketing Analytics** platform, to uncover trends in user discourse, emotions, and engagement. These insights provide a comprehensive understanding of public perception and behaviour throughout the event and form the basis for comparisons across phases.

Model Setup Phase 1 : "Before" – Preceding the GME Surge

To understand the baseline sentiment and discourse surrounding Robinhood prior to the GameStop surge, a model was configured using Twitter data collected from January 12 to January 21. Within the software setup, the **"Before"** data table was selected under sentiment data. Stop words were applied to reduce noise, including a default list of 851 words and a custom stop word entry for "Robinhood." Advanced options such as word co-occurrence analysis, RAKE, and topic modelling were enabled, with five topics specified to capture prevailing themes.

Model Output & Interpretation

The **word cloud** *(see Exhibit A1)*, generated without stemming to preserve hashtags, usernames, and trading-specific terms, visualized the most frequently used words in tweets. Key terms such as *"stock," "free," "join," "link," "traders," "stockstobuy,"* and *"stockstowatch"* indicated high engagement around stock promotions, watchlists, and community-driven sharing. Words like *"buy," "money," "account," "crypto,"* and *"bitcoin"* highlighted interest across multiple asset classes, while *"robinhoodtraders"* emphasized community identity. The absence of overtly negative terms suggested largely **positive** and promotional discourse.

Sentiment analysis *(see Exhibit A2.1)* categorized *4,998* posts into **positive *(58%)***, neutral *(24%)*, and negative *(18%)* valence. The valence histogram *(Exhibit A2.2)* clearly illustrates the predominance of positive sentiment, with green bars for positive, grey for neutral, and red for negative posts. The Emotion repartition *(Exhibit A3.1)* revealed **trust** as the dominant emotion *(24%)*, followed by anticipation *(16%)*, anger *(12%)*, joy (11%), sadness (10%), disgust (10%), fear (9%), and surprise (9%). These results, summarized in a pie chart *(Exhibit A3.2)*, indicated an overall positive and engaged user base, with minor negative emotions hinting at early concerns.

The **POS analysis** *(Parts-of-speech; Exhibit A5)* showed **nouns** *(~31%)* dominating the text, reflecting discussion about stocks, companies, accounts, and markets. Verbs *(~23%)* highlighted action-oriented discourse (buying, trading, investing), while pronouns and adpositions indicated user engagement. Adjectives and adverbs *(~8%)* added tone and emphasis. The high noun–verb ratio suggested a mix of informational and action-oriented communication, consistent with pre-event planning and recommendations.

Collectively, these exhibits establish a baseline understanding of Robinhood-related discourse prior to the GME surge. Users were generally **positive**, **engaged**, and **focused** on trading opportunities and community interaction. These insights provide a foundation for comparison with the "During" and "After" phases, allowing for detection of shifts in sentiment, emotion, and key topics as the GME debacle unfolded.

Model Setup Phase 2: "During" – Peak of the GME Short Squeeze

The setup for the "During" phase mirrors the "Before" phase, with the key change being the selection of the **"During"** data table under sentiment data. Stop words (default + custom "Robinhood") and

advanced options, including word co-occurrence analysis, RAKE, and topic modelling with five topics, were applied to capture prevalent themes during the peak of the trading frenzy.

Model Output & Interpretation

The **word cloud** *(Exhibit B1)*, highlights the most frequently used words in tweets during the GME surge. Prominent terms such as *"gme," "gamestop," "amc," "trading," "stock," "money,"* and *"people"* indicate intense discussion around the core stocks and broader market implications. Terms like *"suspend," "decided," "halt," "restrictions,"* and *"limited"* point to Robinhood's trading halt and ensuing controversy. Mentions of *"citadel," "hedge," "capital," "yellen,"* and *"ceo"* reflect speculation regarding institutional involvement, regulatory oversight, and leadership accountability. The appearance of **negative** slang and profanity signals heightened user **frustration** and **anger**. Compared to the "Before" phase, discourse shifted dramatically from promotional and investment-focused chatter to conflict, blame, and scrutiny of institutional actors.

Sentiment analysis *(Exhibit B2.1) categorized* 4,997 posts as ***negative (50%)***, neutral *(19%)*, and positive *(31%).* The valence histogram *(Exhibit B2.2)* visually demonstrates the surge in negative sentiment compared with the largely positive "Before" phase. Emotion repartition *(Exhibit B3.1),* summarized in pie charts *(Exhibit B3.2),* shows trust *(20%)* remaining significant, but **fear *(16%)*** and **anger *(14%)*** emerge prominently, reflecting heightened tension. Other emotions include anticipation *(13%),* sadness *(11%),* joy *(9%),* disgust *(9%),* and surprise *(8%).* This shift underscores the emotional volatility and intensity during the trading restrictions.

The **POS analysis** *(Parts-of-speech; Exhibit B5)* reveals nouns *(~31%)* still dominate, now tied to entities and actors (GME, AMC, Citadel, CEO, hedge funds). **Verbs** *(~23%)* convey active calls to action or accusations ("halt," "buy," "sell," "suspend"). Pronouns and adpositions indicate conversational exchanges and directed commentary. Adjectives and adverbs reflect heightened emotional tone, describing perceived unfairness or urgency. While the POS distribution is similar, the focus has shifted toward confrontation and institutional references.

Collectively, the exhibits illustrate a clear evolution in discourse from positive, community-focused engagement in the "Before" phase to conflict-driven, emotionally charged discussions in the "During" phase. This shift highlights the impact of Robinhood's trading restrictions on public sentiment, indicating increased **negative** perception, **frustration**, and scrutiny of institutional actors.

Model Setup Phase 3: "After" – Post-Peak of the GME Surge

The "After" phase setup mirrors the previous phases, with the key difference being the selection of the **"After"** data table under sentiment data. Stop words (default + custom "Robinhood") and advanced options, including word co-occurrence analysis, RAKE, and topic modelling with five topics, were applied to capture prevalent themes following the peak of the trading frenzy.

Model Output & Interpretation

The **word cloud** *(Exhibit C1)* highlights high-frequency terms like *"stock," "gamestop," "dogecoin," "free," "join," "link,"* and *"trading,"* showing continued discussion of trading activity. Notably, crypto-related mentions like *"doge," "dogecoin," "bitcoin," "musk"*, indicate a shift in attention toward alternative assets and trending markets. Terms such as *"restrictions," "limits," "suicide,"* and *"died"* reflect lingering negative sentiment and safety concerns, while mentions of *"wallstreetbets," "ceo," "citadel,"* and *"funds"* show ongoing discussion of institutional involvement and leadership accountability. Compared with the "During" phase, conversations diversify from GME outrage to a broader mix of **crypto hype**, **residual anger**, and **platform trust issues.**

Sentiment analysis *(Exhibit C2.1)* shows ***43%*** **positive**, *22%* neutral, and *34%* negative posts, visualized in *Exhibit C2.2*. Compared to the "During" phase, **negative** sentiment has decreased from *50%* to *34%,* while **positive** posts rebounded from *31%* to *43%*, suggesting partial recovery in user perception. Emotion repartition *(Exhibit C3.1, pie chart C3.2)* indicates **trust** *(23%)* remains the most prevalent emotion, followed by anticipation *(16%),* fear *(13%),* anger *(12%),* sadness *(12%),* joy *(9%),* disgust *(8%),* and surprise *(8%).* Compared with the "During" phase, fear and anger slightly decline, while **trust** and **anticipation** remain steady, signalling **cautious optimism**.

POS analysis *(Exhibit C5)* shows nouns (~31%) still dominate, now encompassing stocks, cryptocurrencies, companies, and people. Verbs (~23%) continue to indicate calls to action, while pronouns and adpositions reflect conversational and community-driven exchanges. A slightly higher share of **adjectives** and **adverbs** suggests a richer descriptive tone, as users reflect on past events and express stronger opinions. Overall, the grammatical pattern is consistent, but the topics have expanded beyond GME to include crypto and broader market discussions.

In Summary, the analysis across the three phases illustrates a clear evolution in user sentiment and discourse. In the "Before" phase, discussions were largely **positive** and **promotional**, focused on stock opportunities, community sharing, and engagement with Robinhood's platform. During the peak of the GME surge, sentiment shifted sharply toward **negativity**, with high levels of **anger** and **fear** as users reacted to trading restrictions, controversies, and institutional involvement. In the "After" phase, sentiment partially recovered, with **positive** discourse rising and **negative** sentiment declining, while conversations broadened to include crypto, other stocks, and ongoing concerns about platform safety and accountability. This evolution highlights how public perception can change rapidly during a crisis and provides Robinhood with valuable insights for managing communications, restoring trust, and refining platform policies.

Research Question 2 - Topics and Themes in Public Conversations About Robinhood:

To address the second research question regarding the dominant topics and concerns in public conversations about Robinhood, the **Topic Modelling** results from the "Before," "During," and "After" phases *(Exhibits A4, B4 & C4)* of the GameStop episode reveal a clear evolution in discourse, highlighting the main themes and keywords driving conversations at each phase.

In the **Before** phase *(Exhibits A4)*, conversations focused on general investing and community engagement. Dominant themes included buying and trading stocks *(Topic 1, Topic 2)*, trading tips such as "stocks to buy" or "stocks to watch" *(Topic 3),* investment discussions about markets, fintech, and companies *(Topic 4),* and cryptocurrency engagement, including Bitcoin and Dogecoin *(Topic 1).* Platform usability and comparisons were also discussed, including Robinhood, Coinbase, Webull, and referral programs *(Topic 5).* Sentiment was largely **positive** or **neutral**, emphasizing **opportunity-seeking** and **learning**.

During the **crisis** *(Exhibits B4)*, discourse shifted sharply to **anger** and **distrust**. Central themes included the GameStop and AMC trading frenzy *(Topic 3),* trading restrictions and perceived market manipulation *(Topic 4),* and criticism of institutional actors such as Citadel and hedge funds *(Topic 5).* Robinhood's leadership, particularly its CEO, was heavily scrutinized *(Topic 2),* with frequent mentions of investigations and regulatory attention. Users expressed **frustration** over restricted trades, using terms like "limit," "suspend," and "halt" *(Topic 1, Topic 4).*

In the **After** phase *(Exhibits C4)*, discussions **diversified** while retaining traces of **frustration**. Themes included cryptocurrency engagement and DogeArmy *(Topic 1)*, institutional accountability and user losses *(Topic 2),* ongoing trading restrictions and legal concerns *(Topic 3)*, community-driven investing via WallStreetBets *(Topic 4),* and scrutiny of Robinhood's leadership *(Topic 5).*

At the Congressional hearing, Robinhood should respond strategically across phases. For the Before phase, highlight efforts to enhance platform usability, investor education, and equitable market access. During the crisis, clearly explain trading restrictions, risk management decisions, and regulatory collaboration. In the After phase, address ongoing concerns about market fairness, legal compliance, platform improvements, and leadership accountability. Tailoring responses to each phase will help Robinhood rebuild trust, demonstrate responsibility, and reinforce its commitment to protecting investors.

Recommendations:

To address the strategy ***Robinhood*** should adopt in response to the issues revealed by the GME episode and the text and sentiment analysis *(Research Question 3),* it is recommended that the company pursue a combined approach of proactive communication and selective app improvements rather than simply "wait and watch." The analysis indicates that user concerns are multi-faceted, spanning trading restrictions, platform usability, and market fairness, and delaying action could further erode trust. Robinhood should implement targeted PR and educational campaigns emphasizing platform transparency, investor safety, and equitable market access. These campaigns could include clear guides on trading procedures, content addressing cryptocurrency volatility, and updates on platform improvements, deployed aggressively across social media channels to rebuild credibility and maintain engagement.

In parallel, select app modifications should address user concerns highlighted during the crisis and post-peak phases, such as trading alerts, enhanced notifications about restricted trades, clearer settlement timelines, and educational prompts for first-time investors. These changes should be phased strategically, monitored through user feedback, and communicated transparently as part of broader PR efforts. By combining communication with tangible improvements, Robinhood signals accountability and responsiveness while mitigating perceptions of bias toward institutional actors.

Regarding online allegations and clarification of operational processes *(Research Question 4)*, Robinhood should proactively provide clear explanations about Payment for Order Flow (PFOF) and trade settlement times to improve transparency and credibility. This can be achieved through accessible FAQs, in-app notifications, and public communications that explain how trades are processed and how user interests are protected. Social media sentiment should be monitored continuously to identify recurring misconceptions, and selective responses should correct misinformation without amplifying negativity. Establishing a dedicated transparency portal within the app or website can centralize information for users and regulators, reinforcing openness and accountability. In summary, by integrating strategic PR, app enhancements, and operational transparency, Robinhood can rebuild trust, mitigate reputational risk, and demonstrate a responsible, user-focused approach, ensuring long-term credibility and improved investor confidence.

Conclusion:

In conclusion, the analysis of *Twitter* discourse surrounding *Robinhood* across the *"Before," "During,"* and *"After"* phases of the GameStop episode demonstrates how public sentiment and themes evolved rapidly in response to platform actions and market events. Initially **positive** and **opportunity-focused** discussions shifted to **frustration**, **distrust**, and scrutiny during the crisis, before partially recovering while broadening to include cryptocurrency and ongoing platform concerns. Topic modelling, sentiment, and emotion analyses highlight the importance of transparency, user safety, and equitable market access in shaping public perception. Based on these insights, Robinhood can adopt a proactive strategy combining targeted PR, educational campaigns, selective app improvements, and clear communication of operational processes. By addressing both perception and functionality, the company can rebuild trust, strengthen investor confidence, and mitigate reputational and regulatory risks. This evidence-based approach positions Robinhood to manage future crises more effectively while sustaining its role as a leading platform for retail investors.

Exhibits:

Exhibit A1 *– Word Cloud of Most Frequent Terms (Before Phase).*

	Posts count	Relative posts count
Total	4 998	100%
negative	877	18%
neutral	1 216	24%
positive	2 905	58%

Exhibit A2.1 – Sentiment Distribution of Tweets (Before Phase).

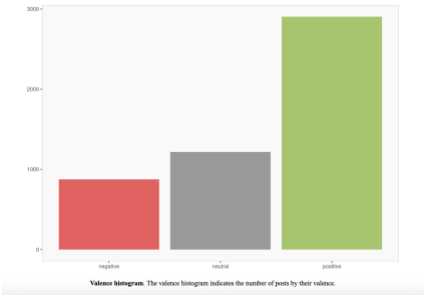


Exhibit A2.2 *– Valence Histogram of Tweets (Before Phase).*

	Posts count	Relative posts count
Total	4 998.00	100%
anger	588.64	12%
anticipation	786.8	16%
disgust	483.86	10%
fear	463.04	9%
joy	561.69	11%
sadness	484.97	10%
surprise	446.15	9%
trust	1 182.85	24%

Exhibit A3.1 *– Emotion Distribution of Tweets (Before Phase).*

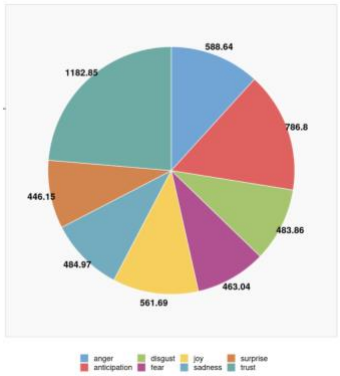


Exhibit A3.2 *– Emotion Breakdown (Pie Chart, Before Phase).*

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
1	buy	stock	trader	invest	stock
2	crypto	trade	robinhoodtrad	market	free
3	coinbas	money	stockstobuy	fintech	link
4	app	start	stockstowatch	investor	join
5	bitcoin	day	jimytwit	compani	sign
6	peopl	webul	account	walmart	referr
7	don	time	dont	year	freestock
8	dogecoin	today	check	startup	post
9	sell	share	jimyappofici	creat	wanna
10	platform	option	stimulus	firm	receiv
11	user	good	shit	bank	margin
12	call	great	custom	retail	xpev
13	watch	open	turn	feel	includ
14	learn	tsla	ill	bought	damn
15	big	lol	financi	appl	dont

Exhibit A4 *– Topic Model Results (Before Phase).*

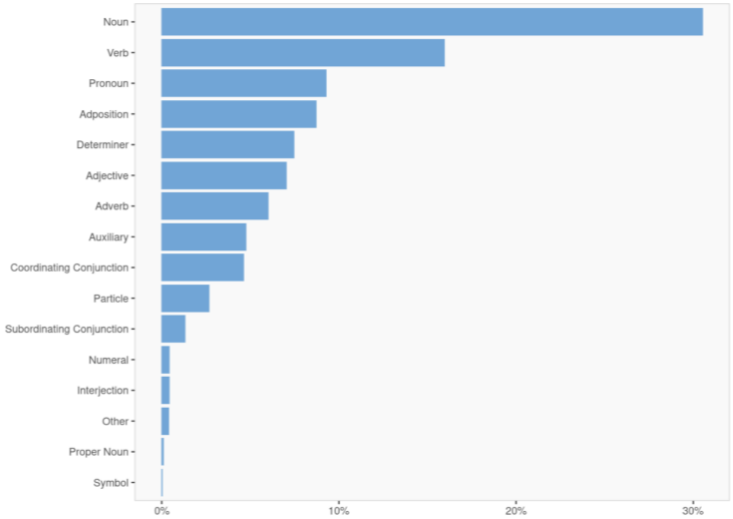


Exhibit A5 *– Parts of Speech Distribution (Before Phase).*

Exhibit B1 *– Word Cloud of Most Frequent Terms (During Phase).*

	Posts count	Relative posts count
Total	4 997	100%
negative	2 498	50%
neutral	941	19%
positive	1 558	31%

Exhibit B2.1 *– Sentiment Distribution of Tweets (During Phase).*

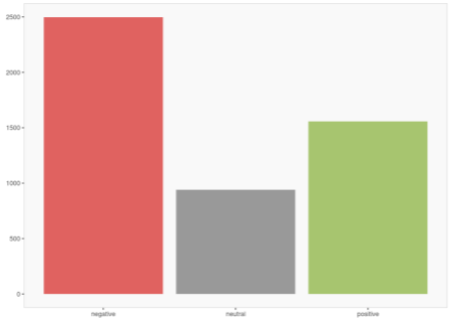


Exhibit B2.2 *– Valence Histogram of Tweets (During Phase).*

	Posts count	Relative posts count
Total	4 997.00	100%
anger	702.54	14%
anticipation	668.24	13%
disgust	466.33	9%
fear	782.34	16%
joy	444.02	9%
sadness	540.82	11%
surprise	410.01	8%
trust	982.69	20%

Exhibit B3.1 *– Emotion Distribution of Tweets (During Phase).*

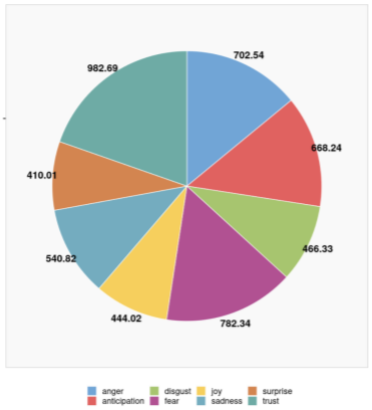


Exhibit B3.2 *– Emotion Breakdown (Pie Chart, During Phase).*

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
1	free	app	stock	trade	big
2	user	hood	buy	gamestop	wall
3	investig	ceo	amc	market	street
4	dogecoin	robin	gme	citadel	fund
5	limit	call	peopl	today	sell
6	allow	rich	money	restrict	short
7	webul	poor	morn	block	hedg
8	join	fuck	make	halt	investor
9	link	happen	suspend	manipul	action
10	hold	start	decid	yellen	day
11	doge	compani	regular	robinhood	tech
12	transfer	shit	nok	janet	reddit
13	invest	review	longer	fee	class
14	guy	dont	nokia	capit	gamestop
15	don	cuomo	nakd	hear	custom

Exhibit B4 *–Topic Model Results (During Phase).*

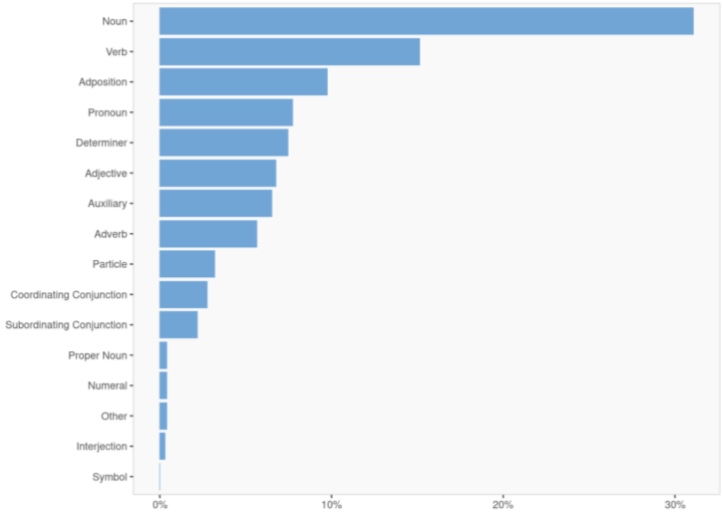


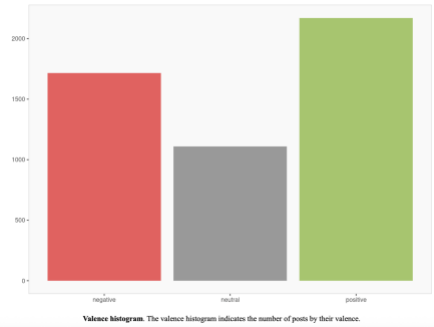
Exhibit B5 *– Parts of Speech Distribution (During Phase).*

Word cloud without stemming. The word cloud represents the most frequently used words inside the corpus of texts provided. The bigger a word appears, the larger the number of times it occurs in the text corpus.

Exhibit C1 – *Word Cloud of Most Frequent Terms (After Phase).*

	Posts count	Relative posts count
Total	4 996	100%
negative	1 717	34%
neutral	1 108	22%
positive	2 171	43%

Exhibit C2.*1 – Sentiment Distribution of Tweets (After Phase).*



Valence histogram. The valence histogram indicates the number of posts by their valence.

Exhibit C2.2 *– Sentiment Histogram of Tweets (After Phase).*

	Posts count	Relative posts count
Total	4 996.00	100%
anger	600.37	12%
anticipation	782.18	16%
disgust	406.24	8%
fear	628.5	13%
joy	452.38	9%
sadness	582	12%
surprise	396.87	8%
trust	1 147.47	23%

Exhibit C3.1 *– Emotion Distribution of Tweets (After Phase).*

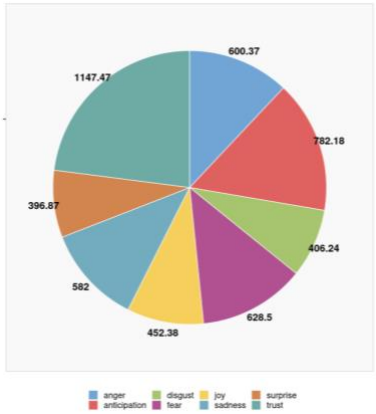


Exhibit C3.2 *– Emotion Breakdown (Pie Chart, After Phase).*

	Topic 1	Topic 2	Topic 3	Topic 4	Topic 5
1	buy	money	trade	stock	ceo
2	dogecoin	market	gamestop	free	account
3	doge	fund	gme	link	week
4	app	sell	amc	join	start
5	peopl	citadel	restrict	trader	day
6	time	custom	share	reddit	fuck
7	dogearmi	hedg	limit	wallstreetbet	dont
8	crypto	order	investor	invest	robinhood
9	allow	suicid	rais	robinhoodtrad	open
10	purchas	user	compani	webul	don
11	deposit	talk	chang	stockstobuy	wall
12	elon	famili	guy	stockstowatch	hous
13	instant	good	lawsuit	jimytwit	vlad
14	hold	busi	short	bitcoin	street
15	musk	die	rule	wsbmod	wait

Exhibit C4 *– Topic Model Results (After Phase).*

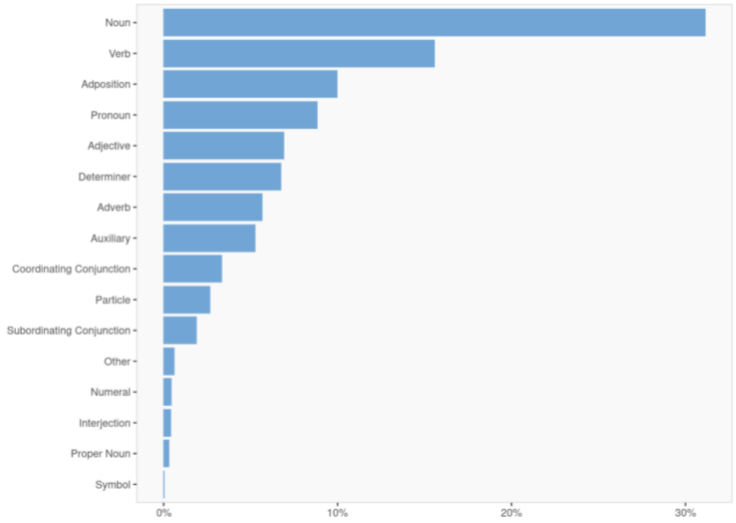


Exhibit C5 *– Parts of Speech Distribution (After Phase).*