

Sentimental Analysis and Emotional Labels of Gamers' User Behavior

- take Genshin Impact as case

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INFO301 Data Visualization Final Project - Group 4

Dataset: 1000 comments each for top viewed 50 videos by API + codes; Find out users with certain stickiness, and exclude users with less than 3 comments by counting.

CONCLUSION:
From this data, we can conclude that while a wide array of emotions is expressed in relation to Genshin Impact, positive emotions like approval and pride have a strong and consistent presence. This points towards a community that, despite the natural ebb and flow of sentiment and varying emotional reactions, has a significant portion of the user base that feels positively about their experience.

Main Topic: In-depth analysis of user comments and discussions on Youtube about the game.

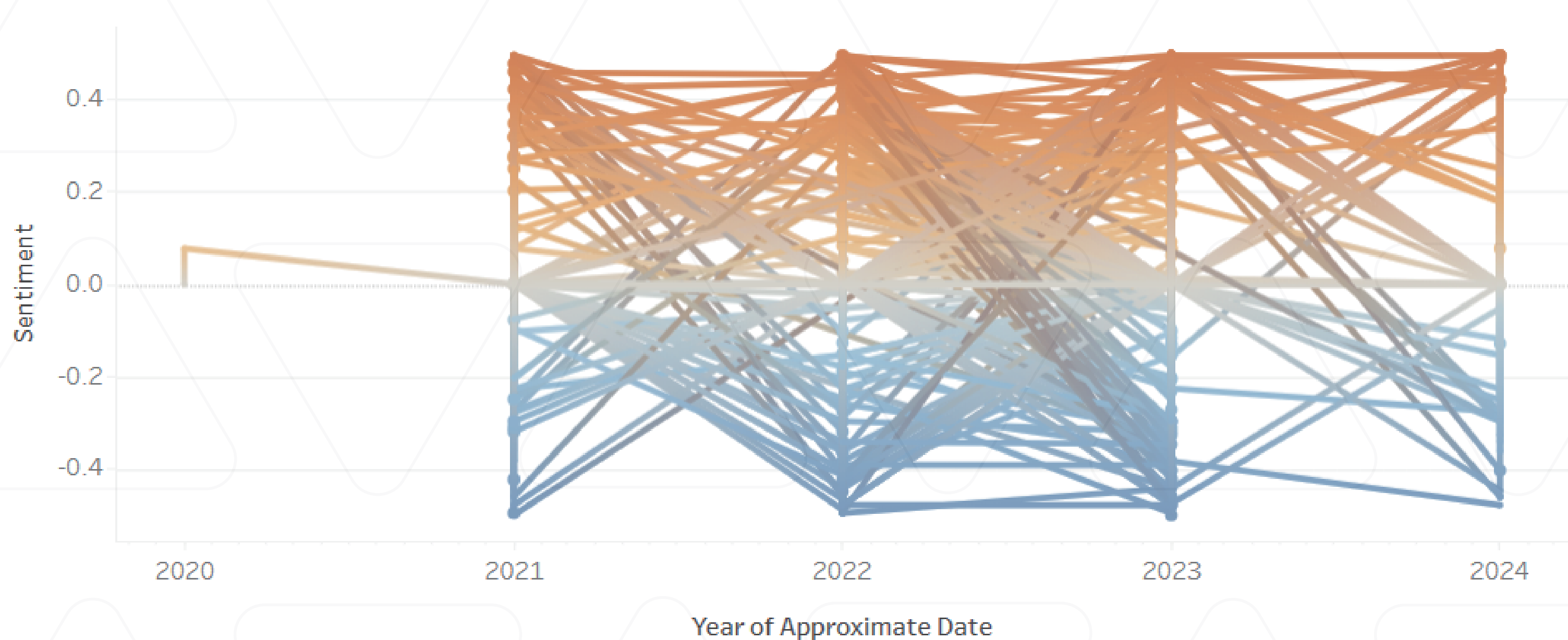
Objective: Refine user sentiment, explore key topics of discussion, and map the ecology of the game community based on reviews.

Related Questions:

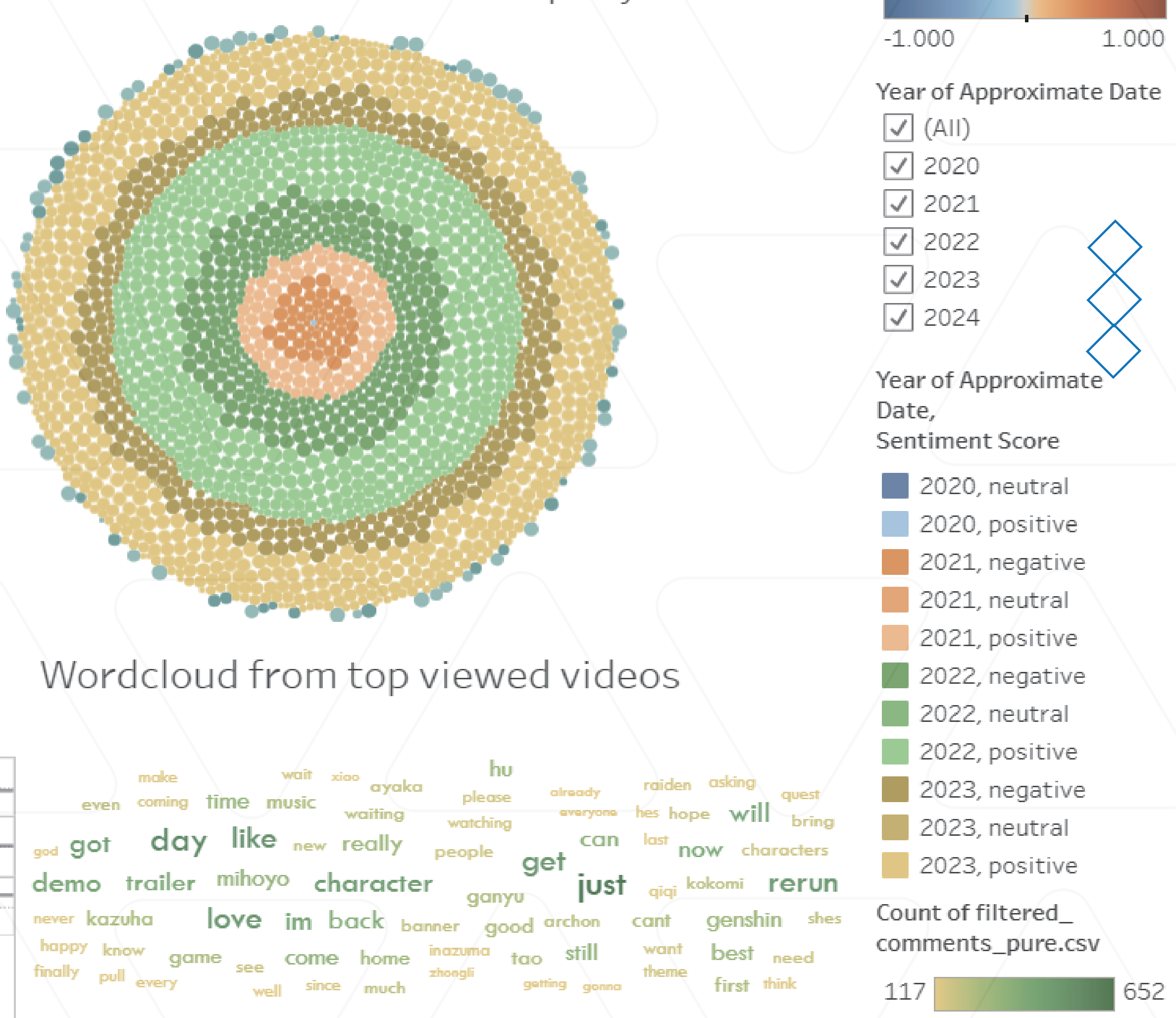
- How does the sentiment trend vary over time on different video types?
- What keywords appear frequently in comments, and what affective patterns do they associate with users?
- How are the sentiment scores of user comments differing across time?
- Is the toxicity of comments correlated with the number of upvotes? This question may reveal if the game's community is a toxic one or a friendly one.

Ranking based on view count: analysis of top 50 Youtube videos for Genshin Impact

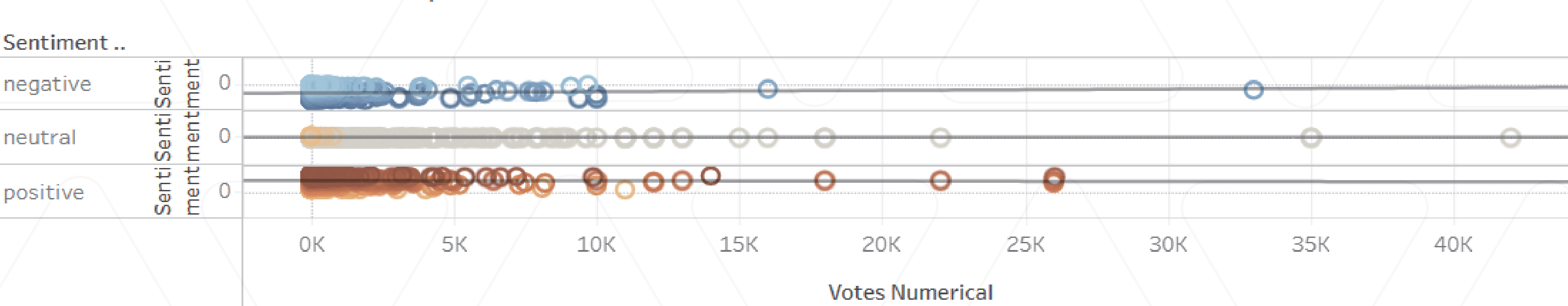
Sentimental Time Plot based on User's channel



Overall Comments: sentiment & numbers per year



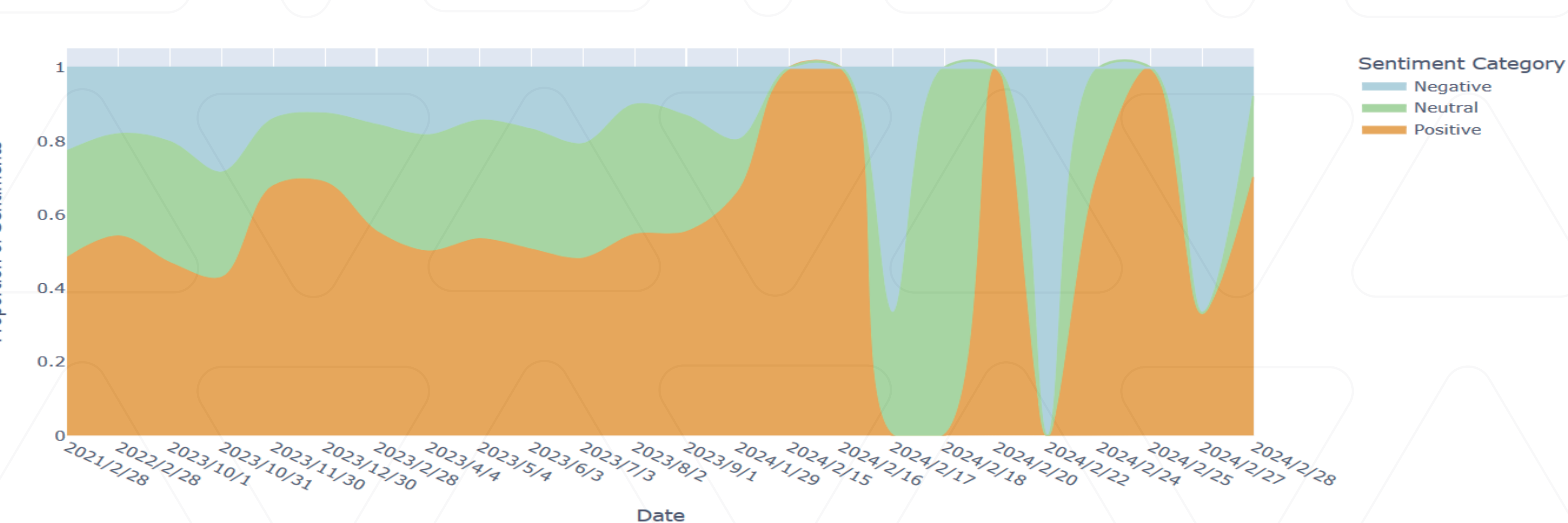
Comment Correlation Graph



Wordcloud from top viewed videos



Sentiment Distribution Over Time

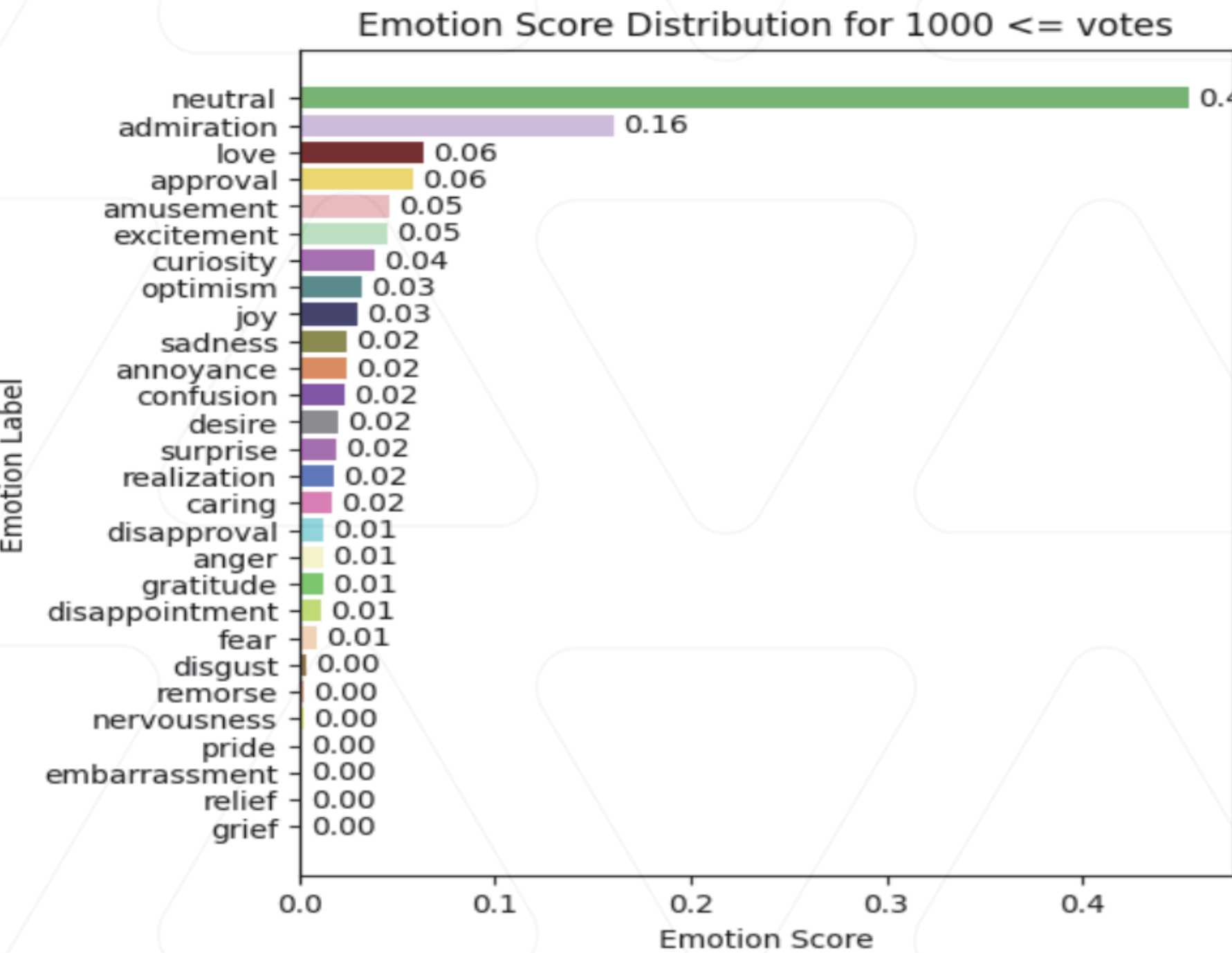
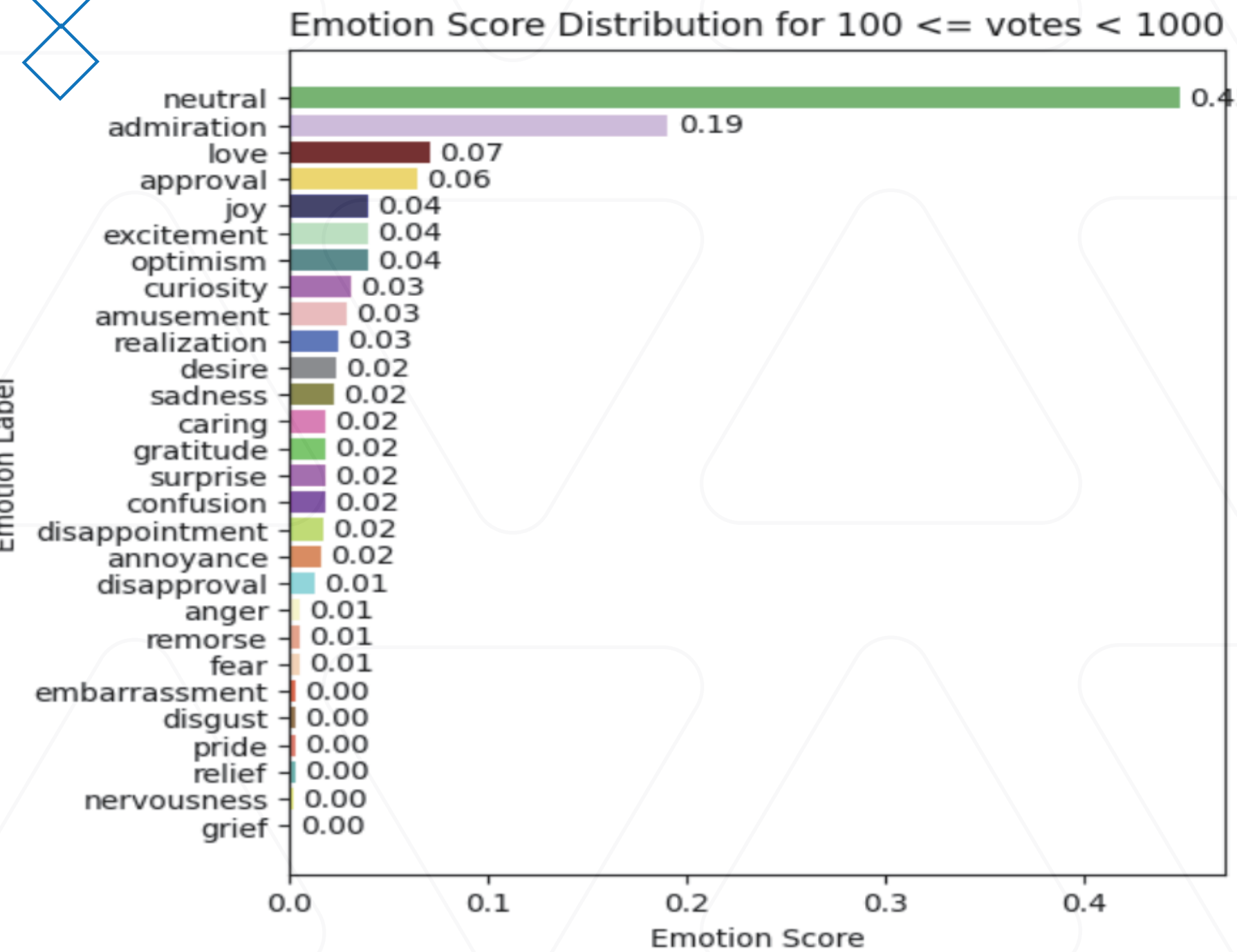
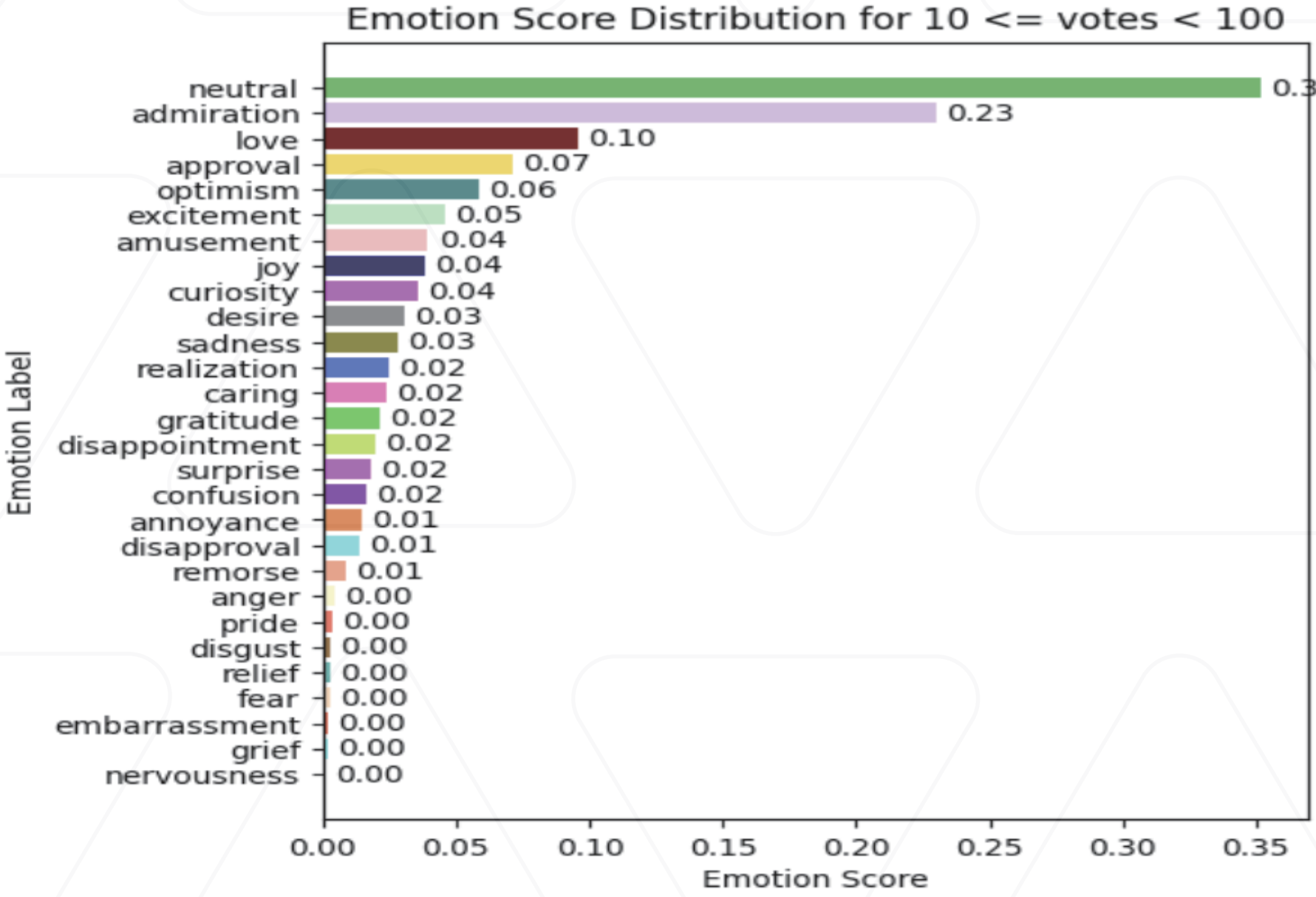
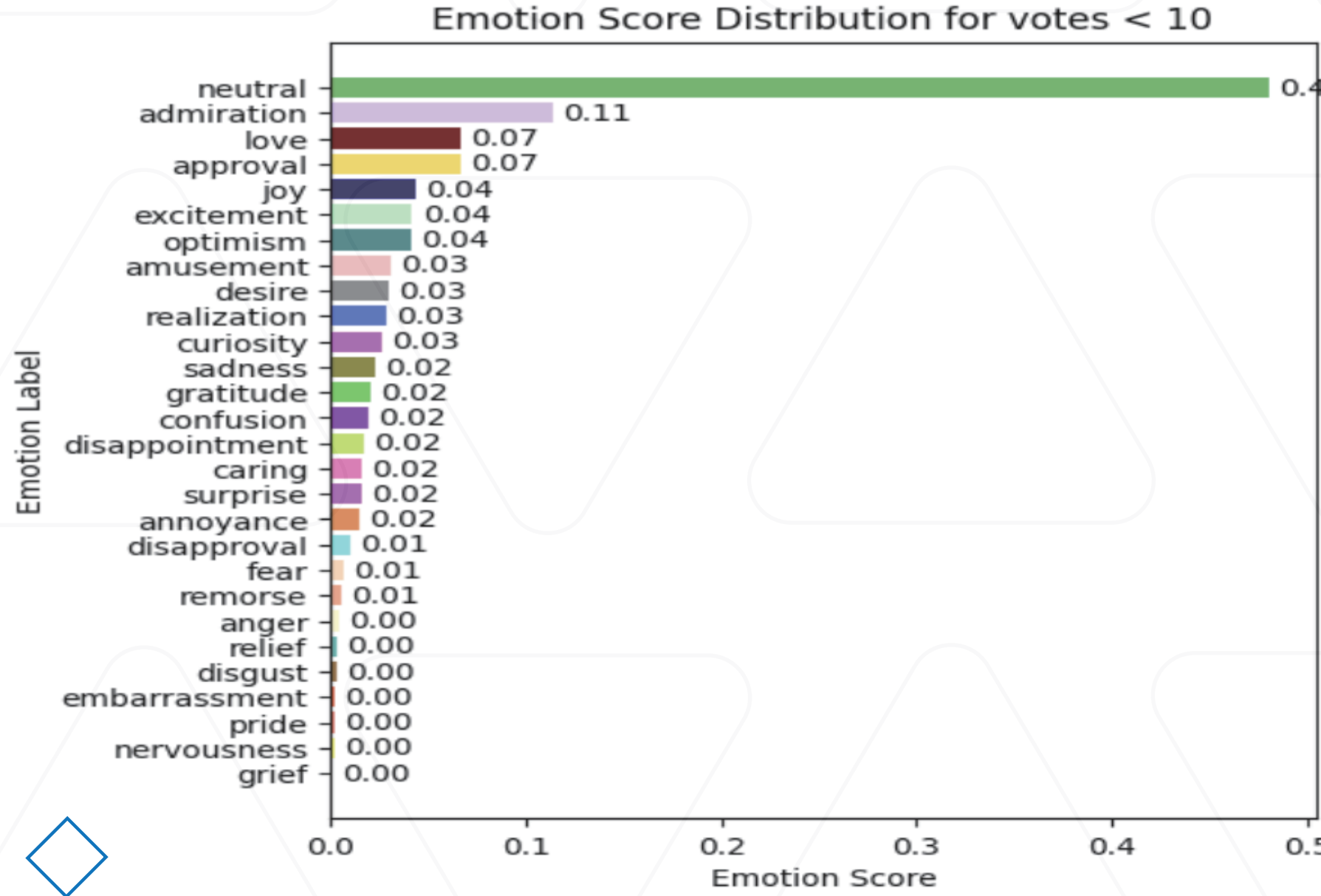


Sentiment analysis graphs: They are based on user channels show significant trends over a specified time frame. While data for the 2020-2021 period is limited to a single entry, indicating little analytics or data availability, user engagement continues to improve in subsequent years. This also shows from the side the loss of a large number of players, that the players' stickiness is higher after 2021.

Word Cloud: The purpose of modifying this graph is to find common words in reviews that are directly related to the content and user experience of the game and reflect the community's concern for the content and mechanics of the game. We found that high frequency words include terms related to game characters and miHoYo's company, such as "character" and "miHoYo." In addition, most of the high frequency words were positive, such as "love" and "best," indicating a positive emotional tendency toward the game in the community.

Comment Correlation: There's a diverse spread of sentiment across comments, regardless of the number of votes, suggesting that upvotes do not necessarily correlate with positive sentiment.

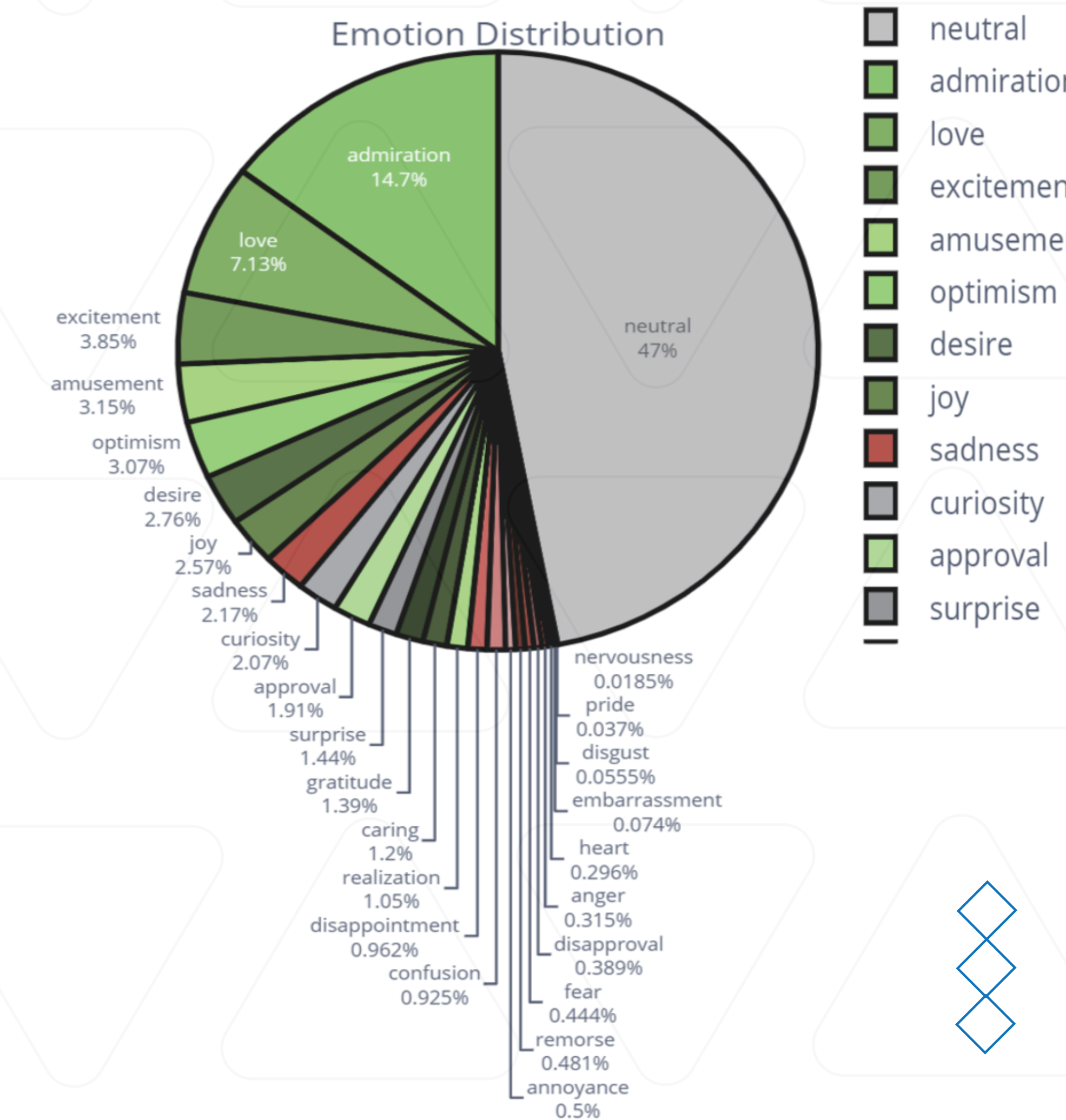
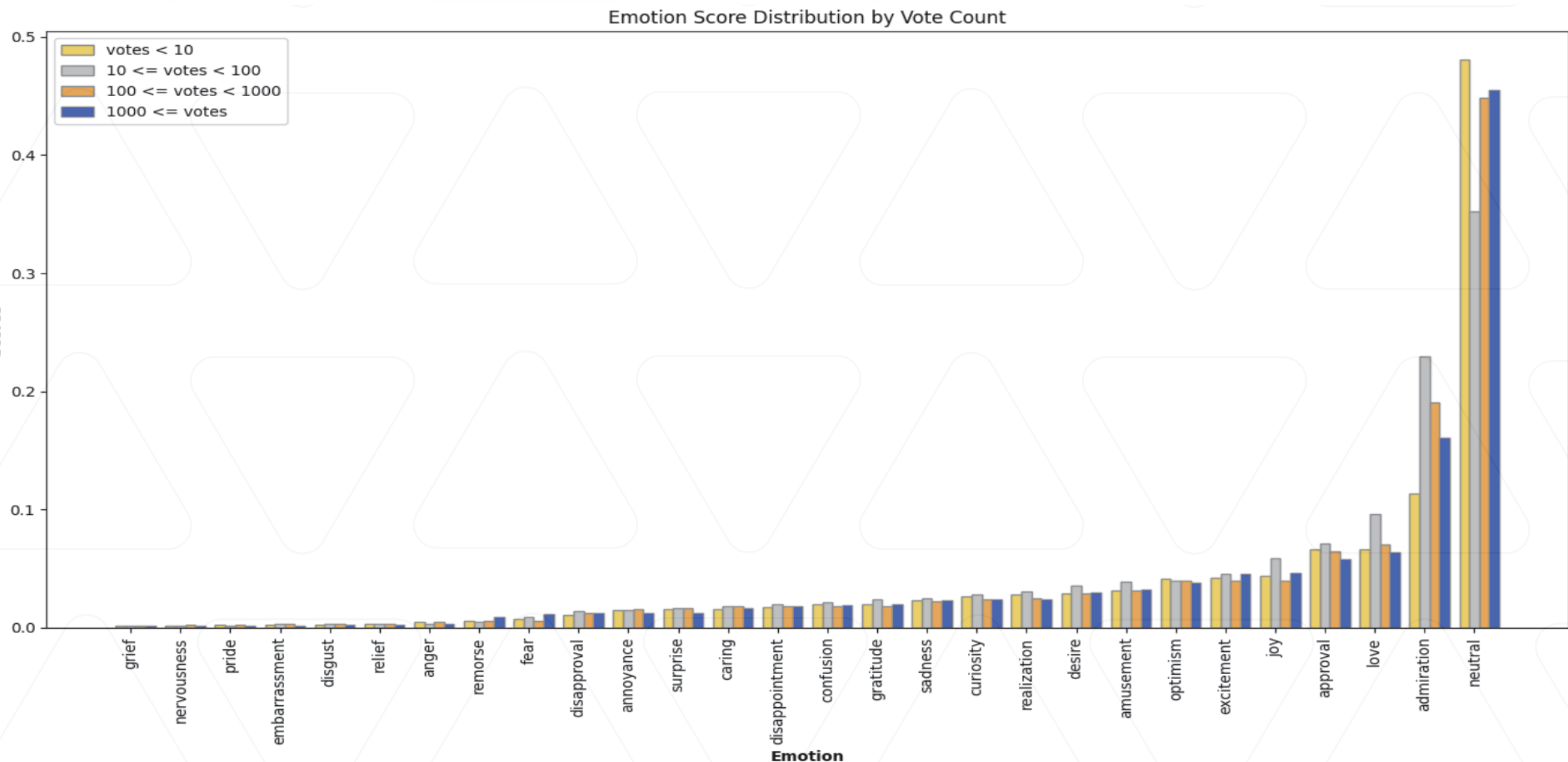
Sentiment Over Time: It illustrates the mood swings across Youtube channels. The colored lines depict these trends, and they show significant changes over time. Peaks and troughs indicate high intervals of positive or negative emotions and may be related to game updates, community events, or public controversies. No single sentiment prevailed, highlighting a variety of reactions to the game's evolving content and developer decisions. This complexity highlights the difficulty of managing a game's community, as players' moods change rapidly as the game progresses.



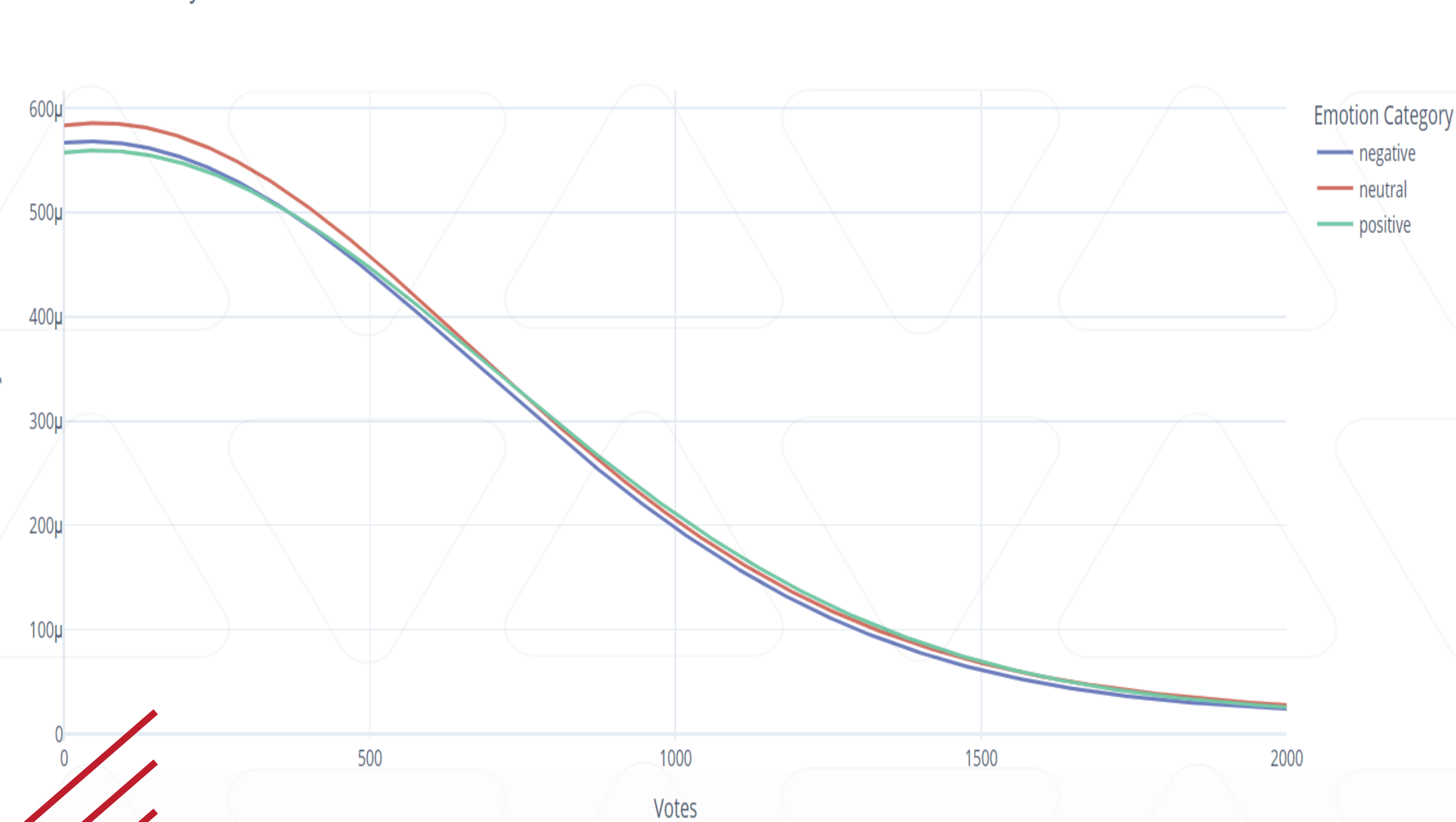
Emotion Score Distributions: The charts display the prevalence of different emotions in comments based on vote counts. Comments with less than 10 votes show high levels of "neutral" and "admiration", closely followed by "love", "approval", and "joy". As the number of votes increases from 10 to less than 100, the pattern remains similar, but there is a slight decrease in "admiration" and an increase in "approval". For comments with 100 to less than 1000 votes, as well as those with 1000 or more votes, excluding neutrals, "admiration" scores highest, indicating that comments evoking respect or esteem tend to receive more votes. Overall, across all vote categories, dominant emotions include "admiration", "approval", and "love", suggesting that positive sentiments are highly valued within the community. However, as vote counts increase further, there is a tendency for "admiration" to become even more prominent - indicating that content inspiring respect or esteem is particularly appreciated by the community. Emotion Score Distribution by Vote Count: This grouped bar graph shows that "neutral" sentiment scores highest across all vote counts, with "admiration", "approval", and "love" being the most prominent positive emotions. Negative emotions like "grief" and "anger" score very low, regardless of vote count. Emotion Distribution: In the pie chart, "neutral" responses comprise the majority, suggesting a substantial amount of the commentary is neither positive nor negative. Among the emotional responses, "admiration" stands out as the most significant, followed by "love" and "excitement".

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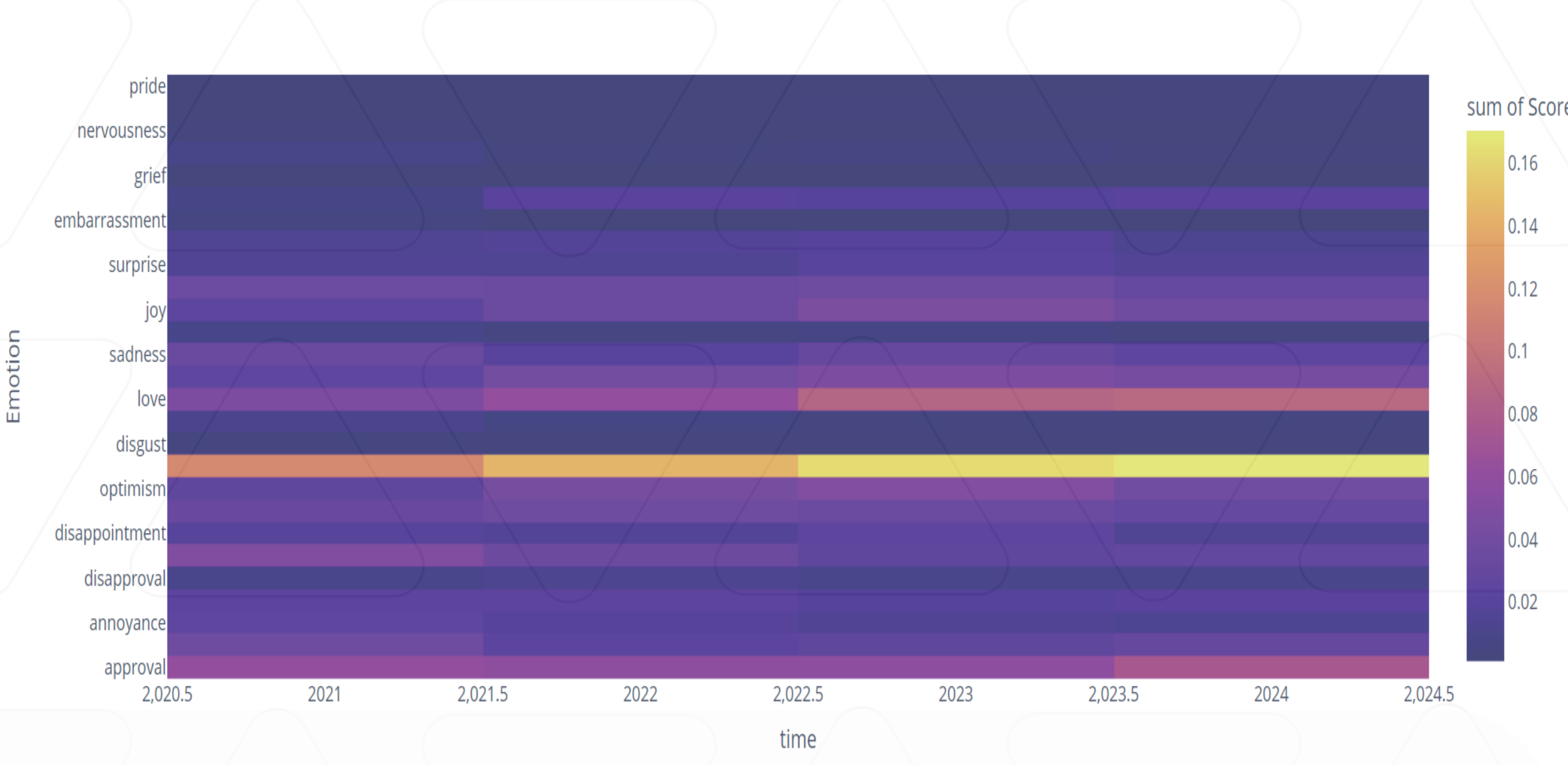
Emotion Distribution: In the pie chart, "neutral" responses comprise the majority, indicating a substantial portion of comments are neither positive nor negative. However, among the emotional responses, "admiration" is the most significant, followed by "love" and "excitement". It's worth noting that overall, the proportion of positive emotions in the pie chart is greater than that of negative comments (the green area is bigger than the red area).



Emotion Density Distribution



Emotion Intensity by Year



Emotion Density Distribution: This graph shows the distribution of comments based on the number of votes cast, showing the universality of emotional responses in comments with a lower number of votes cast. As the number of votes increases, the density of comments gradually decreases. Before the 400 votes, the proportion of negative comments was higher than positive comments, but then the situation reversed. This suggests that negative comments are less likely to get high likes, while positive comments are more popular.

Emotion Intensity by Year: The chart displays emotions on the vertical axis and time on the horizontal axis, with color depth indicating intensity. Warmer colors represent higher intensity. At the beginning of the timeline, "pride", "nervousness", and "grief" are prominent, suggesting strong community reactions to events during that period. Over time, "pride" remains consistently intense, possibly indicating ongoing player achievement or satisfaction. "Nervousness" may reflect anticipation for updates or concern over game changes, while "grief" could relate to disappointing developments or community losses.