

# Understanding Consumer Sentiments in the Smartphone Market through VOSON Analysis

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# 1. Introduction

In today's digital age, understanding consumer sentiments towards products and brands is paramount for effective marketing strategies. Sentiment analysis, a powerful tool in marketing analysis, allows us to delve deep into consumer perceptions and emotions, providing invaluable insights for businesses.

In this document, we aim to conduct sentiment analysis on comments from two YouTube videos: "iPhone 15 Reveal (4K)" and "Galaxy S24 Ultra | Samsung." These videos, showcasing the latest offerings from tech giants Apple and Samsung, serve as focal points for understanding consumer reactions and preferences towards cutting-edge technology.

YouTube, with its vast user base and role as a platform for consumer engagement and feedback, offers a rich source of data for sentiment analysis. By analyzing the sentiments expressed in the comments section of these videos, we can gain valuable insights into the audience's perceptions and emotions towards these products.

In this assignment, we will present the sentiment analysis outputs using the VOSON dashboard, followed by a detailed analysis of the findings and their implications for marketing strategies. By leveraging sentiment analysis, we aim to uncover nuanced insights that can inform targeted and effective marketing approaches in the competitive landscape of technology products.

## 2. Generating YouTube Activity Network

Our objective was to construct a comprehensive YouTube activity network, delving into the intricacies of user engagement and feedback surrounding these flagship product unveilings.

### **Key Metrics:**

Collected YouTube Comments: 386

Top-Level Comments: 259

Reply Comments: 127

Videos Analyzed: 2

Nodes in Network: 388

Edges in Network: 386

Through this meticulous data collection process, we aimed to capture the essence of consumer sentiments, perceptions, and interactions within the digital realm. This activity network serves as a dynamic representation of the multifaceted dialogues sparked by the unveiling of these groundbreaking devices.

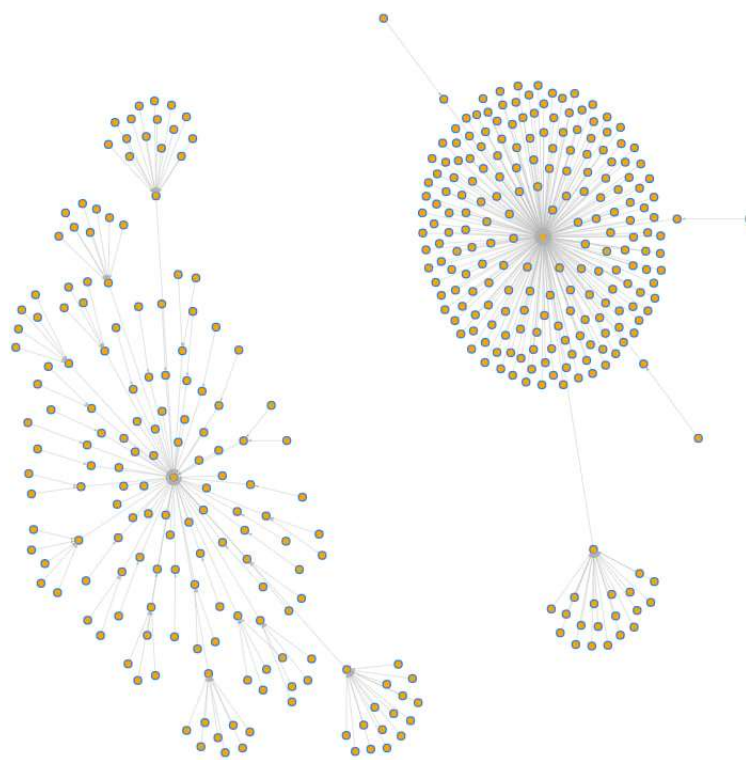
### 3. Interpretation of YouTube Activity Network Graphs

The graphs are representing interactions among YouTube commenters on videos related to the launch of the iPhone 15 and the Samsung S24 Ultra. These visual representations offer insights into the dynamics of user engagement and discourse surrounding these flagship product launches.

userID:

iPhone 15 – VyoqPazNqXw

Samsung S24 Ultra - o4yLOE88kQY



*Figure 1: YouTube actor network (middle node is video)*

#### Analysis of the iPhone 15 Launch Network Graph:

The network graph on the left, pertaining to the iPhone 15 launch comments, exhibits characteristics of dispersion and branching clusters. This suggests a broader spectrum of discussion topics or a diverse array of commenters engaging in various subgroups. The dispersed nature of the graph indicates a decentralized conversation landscape with multiple nodes representing distinct discussions or threads.

## Analysis of the Samsung S24 Ultra Launch Network Graph:

In contrast, the network graph on the right, corresponding to the Samsung S24 Ultra launch comments, demonstrates denser connectivity with a prominent central hub and tightly connected surrounding nodes. This densification suggests a more focused discussion or a smaller cohort of highly active commenters gravitating around a central theme. The presence of a central hub signifies a focal point of discussion, with surrounding nodes representing interactions revolving around this central topic.

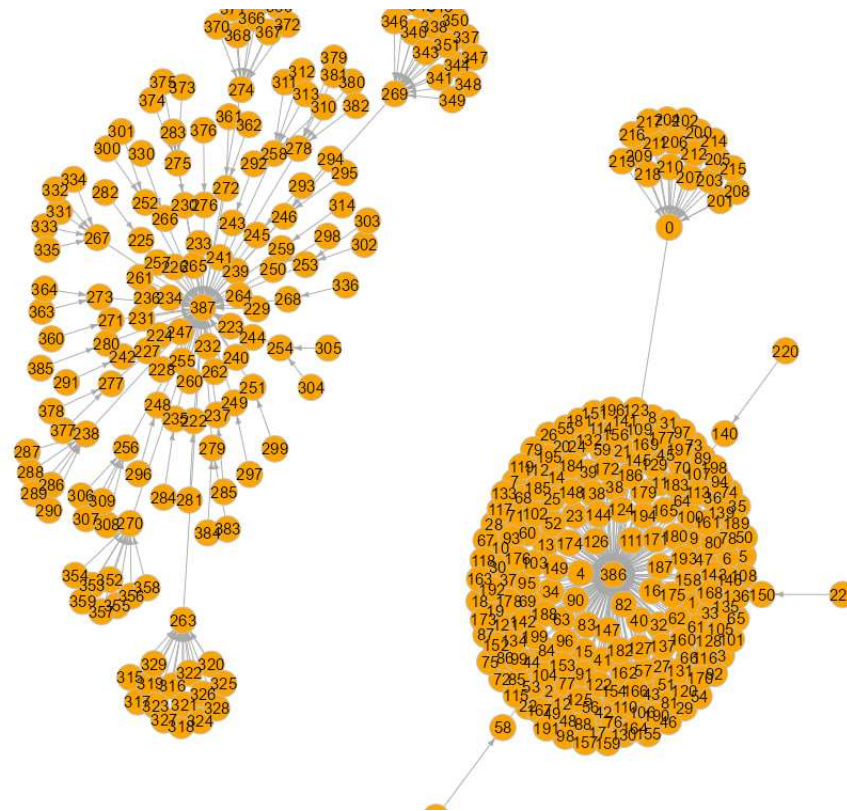


Figure 2: YouTube actor network with node indexes

## 4. Network Metrics Analysis

### Network Metrics

```
Number of nodes (network size): 388
Number of edges: 386
Edges: directed
Number of components: 2
Component mode: Weak
Number of isolates: 0
Density: 0.003
Average geodesic distance: 1.248

(Global) clustering coefficient: 0.000
Proportion of connected triples that close to form triangles
Reciprocity - 1: 0.000
Ratio of number of dyads with reciprocated (mutual) edges to number of dyads with single edge
Reciprocity - 2: 0.000
Ratio of total number of reciprocated edges to total number of edges

Indegree centralization: 0.514
Outdegree centralization: 0.000
Betweenness centralization: 0.000
Closeness centralization: NaN
```

*Figure 3: network metrics*

#### Number of Nodes and Edges:

The YouTube activity network comprises a total of 388 nodes and 386 edges, indicating the number of distinct commenters and the interactions between them, respectively.

#### Edge Directionality:

The edges within the network are directed, implying that interactions between commenters have a specific directionality, possibly reflecting the flow of conversation or influence.

#### Components:

The network consists of 2 components, identified under the Weak component mode. This suggests that there are two distinct subgroups of commenters within the network, possibly engaging in separate discussions or topics.

#### Density:

With a density of 0.003, the network demonstrates relatively low connectivity, indicating that the interactions among commenters are sparse compared to the total possible connections.

#### Average Geodesic Distance:

The average geodesic distance between nodes is calculated to be 1.248, representing the average shortest path length between any two nodes in the network. This metric offers insights into the overall accessibility and connectivity of the network.

#### Clustering Coefficient:

The global clustering coefficient is measured at 0.000, indicating a lack of clustering or formation of triangles within the network. This suggests that the network may not exhibit strong tendencies for interconnected clusters of nodes.

#### Reciprocity:

Both Reciprocity - 1 and Reciprocity - 2 metrics report a value of 0.000, suggesting a minimal occurrence of reciprocated (mutual) edges within the network. This indicates a predominantly unidirectional flow of interactions among commenters.

Centralization:

Indegree Centralization: With a value of 0.514, the network demonstrates moderate indegree centralization, indicating that certain nodes receive a disproportionate amount of incoming interactions.

Outdegree Centralization: The outdegree centralization value of 0.000 suggests a more evenly distributed distribution of outgoing interactions among nodes.

Betweenness Centralization: The betweenness centralization value is reported as 0.000, indicating a lack of concentration of influence or control over the flow of interactions between nodes.

Closeness Centralization: Due to a reported value of NaN (Not a Number), the calculation of closeness centralization could not be determined from the provided data.

## 5. Text Analysis

### Word frequency analysis

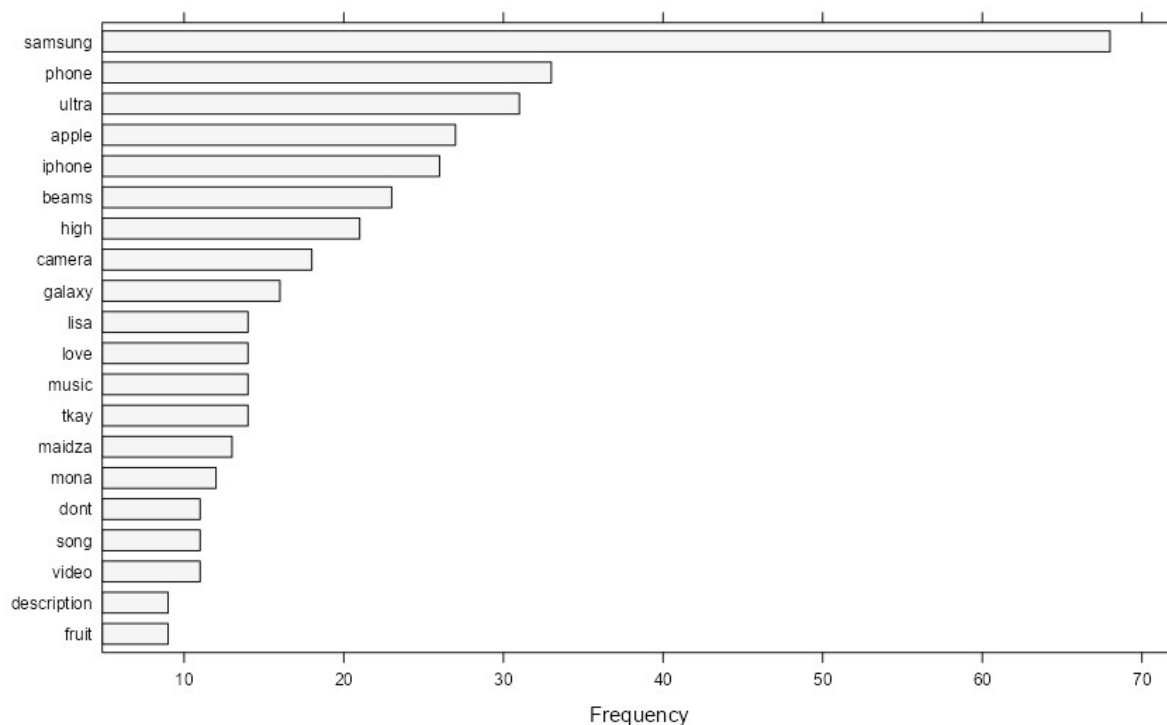


Figure 4: word frequency

The word frequency graph sheds light on the prevalent themes and topics discussed within the comments or text data concerning the iPhone 15 and Samsung S24 Ultra launches. Notably, terms such as "Samsung," "phone," "one," "iPhone," and "beam" emerge as the most frequently occurring, suggesting a central focus on smartphone models, brands, and potentially their key features. The prominence of "Samsung" and "iPhone" underscores the audience's keen interest and engagement with these leading smartphone brands, indicative of varying levels of brand loyalty or preference among consumers. Moreover, generic terms like "phone" and "one" imply discussions around general phone features or comparisons, while specific feature-related terms such as "beam" hint at conversations concerning innovative functionalities or technological advancements.

This analysis underscores the significance of consumer interest, brand perception, and product features in shaping discussions and preferences surrounding these flagship product launches. By delving deeper into the sentiment associated with these terms, we can gain valuable insights into consumer sentiments and engagement, providing a nuanced understanding of consumer behavior in the context of smartphone technology.

## Word cloud



Figure 5: word cloud

The word cloud analysis offers a visual representation of the prominent themes and discussions surrounding smartphone technology, particularly in relation to the launches of the iPhone 15 and Samsung S24 Ultra.

Among the most prominent words in the cloud are "Samsung" and "Apple," highlighting the central focus on these two leading brands within the conversation. The inclusion of terms like "Galaxy," "iPhone," "Ultra," and "Mini"

further reinforces the emphasis on smartphone models and their respective product lines. This underscores the significance of brand recognition and differentiation in shaping consumer perceptions and preferences within the competitive landscape of technology.

Additionally, the presence of terms such as "camera," "features," and "screen" indicates discussions revolving around specific attributes and functionalities of smartphones.

This suggests that consumers are actively engaging in conversations about the pros and cons of different models, reflecting their keen interest in exploring and evaluating the various aspects of smartphone technology. Overall, the word cloud serves as a visual representation of consumer interest, brand focus, and discussions surrounding smartphone attributes, providing valuable insights into the dynamics of consumer engagement and sentiment within the realm of technology products.



## Sentiment

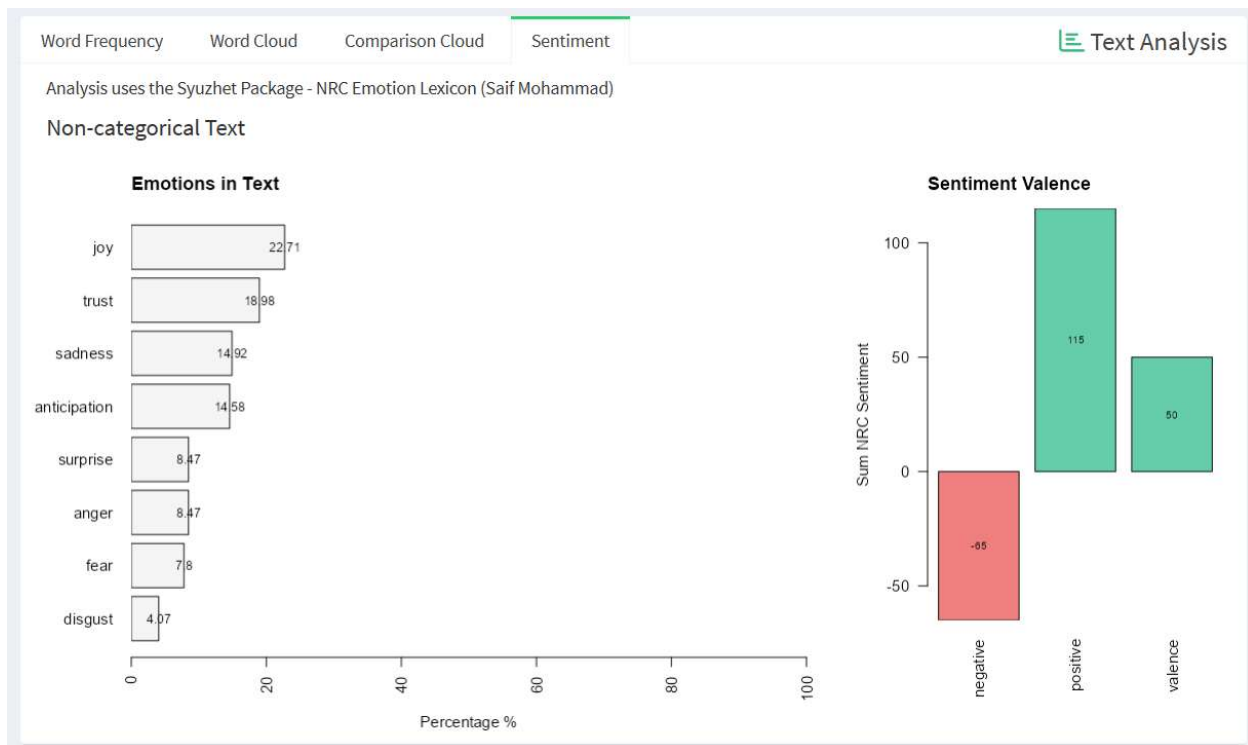


Figure 6: sentiment analysis

The sentiment analysis of the text reveals a nuanced understanding of the emotional undertones and overall tone prevalent within the discussions surrounding the iPhone 15 and Samsung S24 Ultra launches.

The bar graph on the left delineates various emotions detected in the text, including joy, trust, anticipation, sadness, anger, surprise, fear, and disgust, each accompanied by its corresponding percentage frequency. Notably, joy emerges as the predominant emotion, suggesting a prevailing sense of excitement or positivity among the commenters.

The sentiment valence graph on the right further corroborates these findings, showcasing a positive sentiment score of 119 alongside a negative sentiment score of -45. While the positive sentiment score indicates an overall upbeat and optimistic tone pervading the discussions, the presence of negative sentiment elements highlights the existence of contrasting viewpoints or concerns within the discourse. This indicates that the text analyzed likely encompasses a spectrum of emotions, ranging from elation to apprehension, reflective of the diverse perspectives and reactions elicited by the product launches.

Overall, the sentiment analysis offers valuable insights into the underlying emotions and sentiments expressed by the commenters, providing a nuanced understanding of their engagement and reactions towards the iPhone 15 and Samsung S24 Ultra launches.

## 6. Conclusion

In conclusion, our thorough examination of YouTube comments, word frequency, and sentiment surrounding the launches of the iPhone 15 and Samsung S24 Ultra provides a comprehensive understanding of consumer engagement and sentiment within the realm of smartphone technology.

Through the visualization of the YouTube activity network, we discerned distinct patterns of interaction, with the iPhone 15 launch network demonstrating dispersion and branching clusters, while the Samsung S24 Ultra launch network displayed denser connectivity, indicative of focused discussion.

The word frequency analysis revealed prevalent themes, with a notable emphasis on leading brands like Samsung and Apple, alongside discussions on smartphone features and comparisons.

Furthermore, sentiment analysis uncovered a predominant sense of joy among commenters, coupled with an overall positive sentiment, albeit with some negative elements, indicating a nuanced mix of enthusiasm and apprehension.

These insights have profound implications for marketing strategies and brand management within the competitive landscape of smartphone technology. Understanding consumer sentiments and engagement patterns is paramount for informing targeted marketing approaches and product positioning.

Moving forward, continued monitoring and analysis of consumer sentiments across digital platforms will be essential for brands to remain agile and responsive to evolving trends and preferences, ultimately fostering meaningful connections with consumers in the dynamic landscape of technology products.