

# ANALYZING THE ROLE OF INFLUENCERS IN AMPLIFYING MISINFORMATION ON SOCIAL MEDIA

Misinformation on social media is a critical issue, especially during breaking news events. This project investigates the role of influencers in spreading misinformation by analyzing user activity, topics, and keywords associated with rumor tweets. Using the PHEME dataset, we identified key patterns in misinformation dynamics and proposed strategies to mitigate its spread

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# Introduction

Although social media platforms are essential for the spread of knowledge, they are also a haven for false information. Influencers have the power to spread both true and false narratives because of their big fan bases and prominent internet presence. With an emphasis on how influencers aid in the transmission of false information during important events, this study explores the mechanics of misinformation propagation on social media. We hope to learn more about the mechanisms underlying the spread of false information by examining trends in the language, themes, and user behavior linked to rumor tweets. Developing methods to lessen its negative consequences and maintain the integrity of online conversation requires an understanding of these tendencies.

## Objective

- Identify influencers spreading misinformation
- Analyze topics and keywords associated with rumor tweets.
- Visualize the dynamics of rumor and non-rumor tweets.

## Methodology

- **Data Cleaning:** Removed missing values and ensured proper formatting of columns like `user.handle` and `followers_count`.
- **Influencer Analysis:** Identified top users spreading rumor tweets based on activity and follower count.
- **Text Analysis:** Extracted frequent keywords and topics associated with rumors using word clouds and bar charts.
- **Visualization:** Created bar charts and word clouds to present findings.

## Results

### Rumor vs. Non-Rumor Distribution

- Non-rumor tweets significantly outnumber rumor tweets, highlighting the broader spread of verified information.

## Top Topics

- Dominant topics include “charliehebd0” and “ferguson,” which are often linked to rumor tweets.

## Top Influencers

- A small group of users disproportionately amplifies rumors, emphasizing the need for targeted interventions.

### Keywords in Rumor Tweets

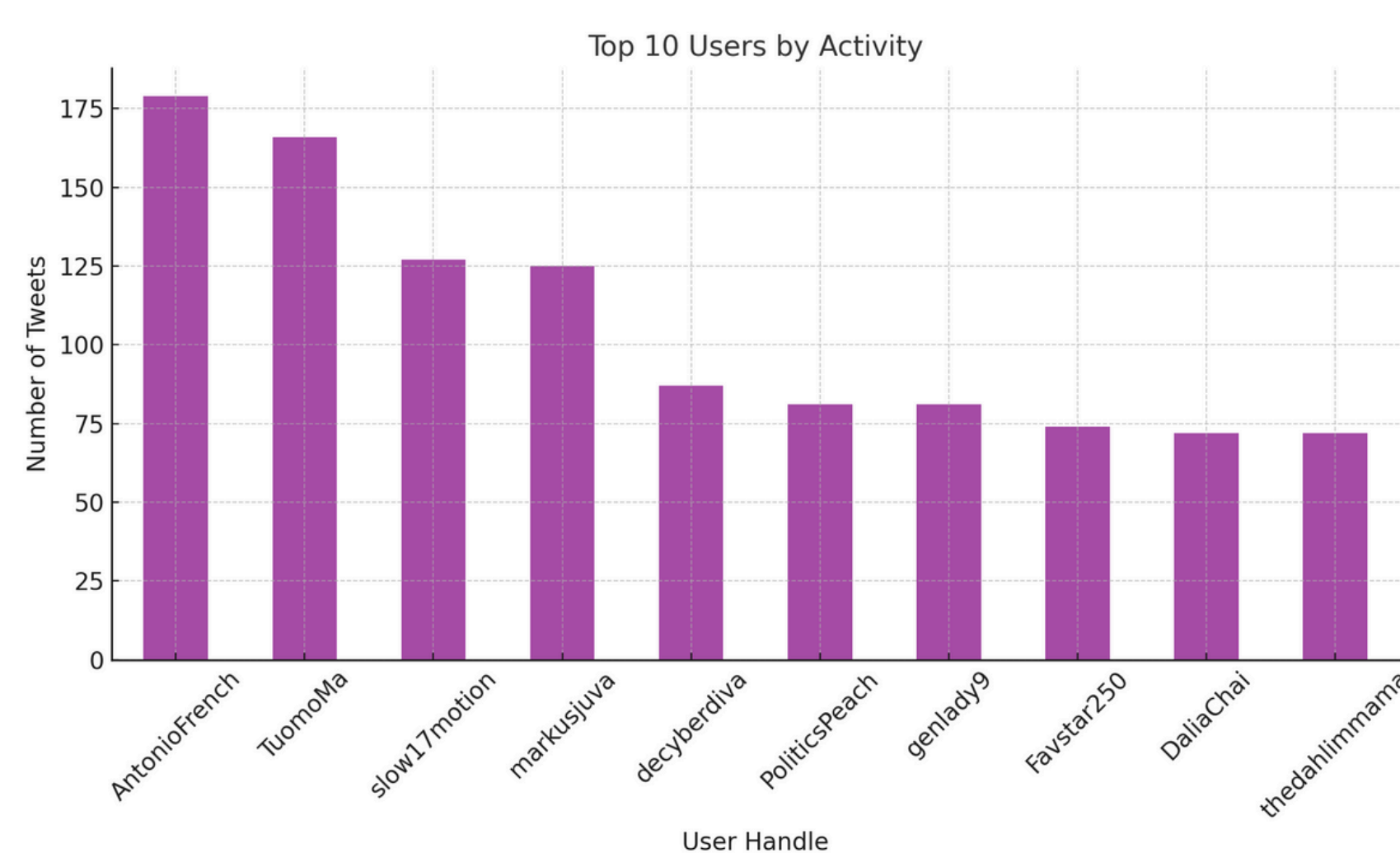
- Common words include “breaking,” “attack,” and “confirmed,” revealing patterns in misinformation language.

## Analysis

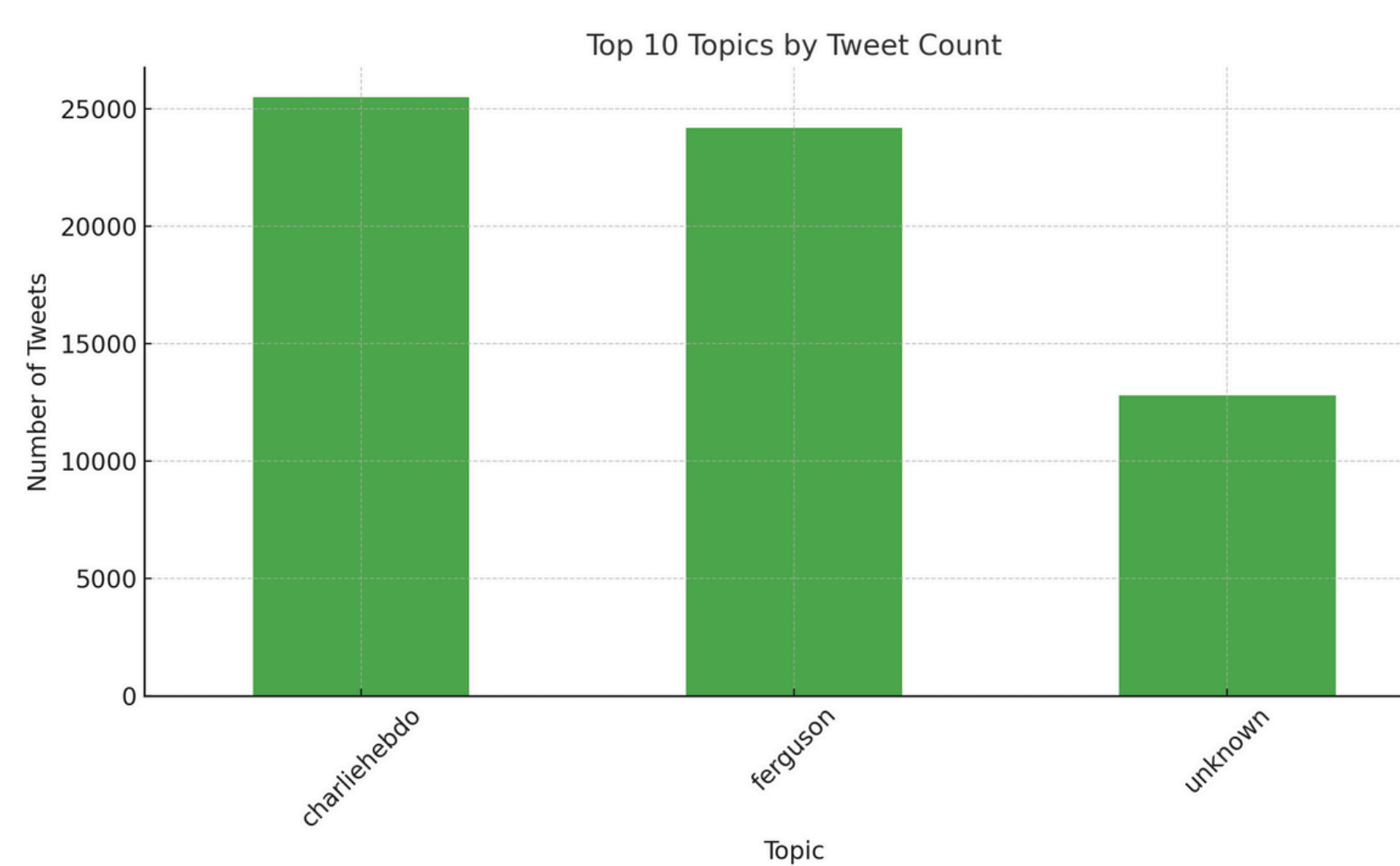
The visualizations highlight critical patterns in misinformation spread, including:

- A few influential users amplify misinformation significantly.
- Major breaking news events are prone to rumor propagation.
- The language of rumors often conveys urgency and sensationalism.

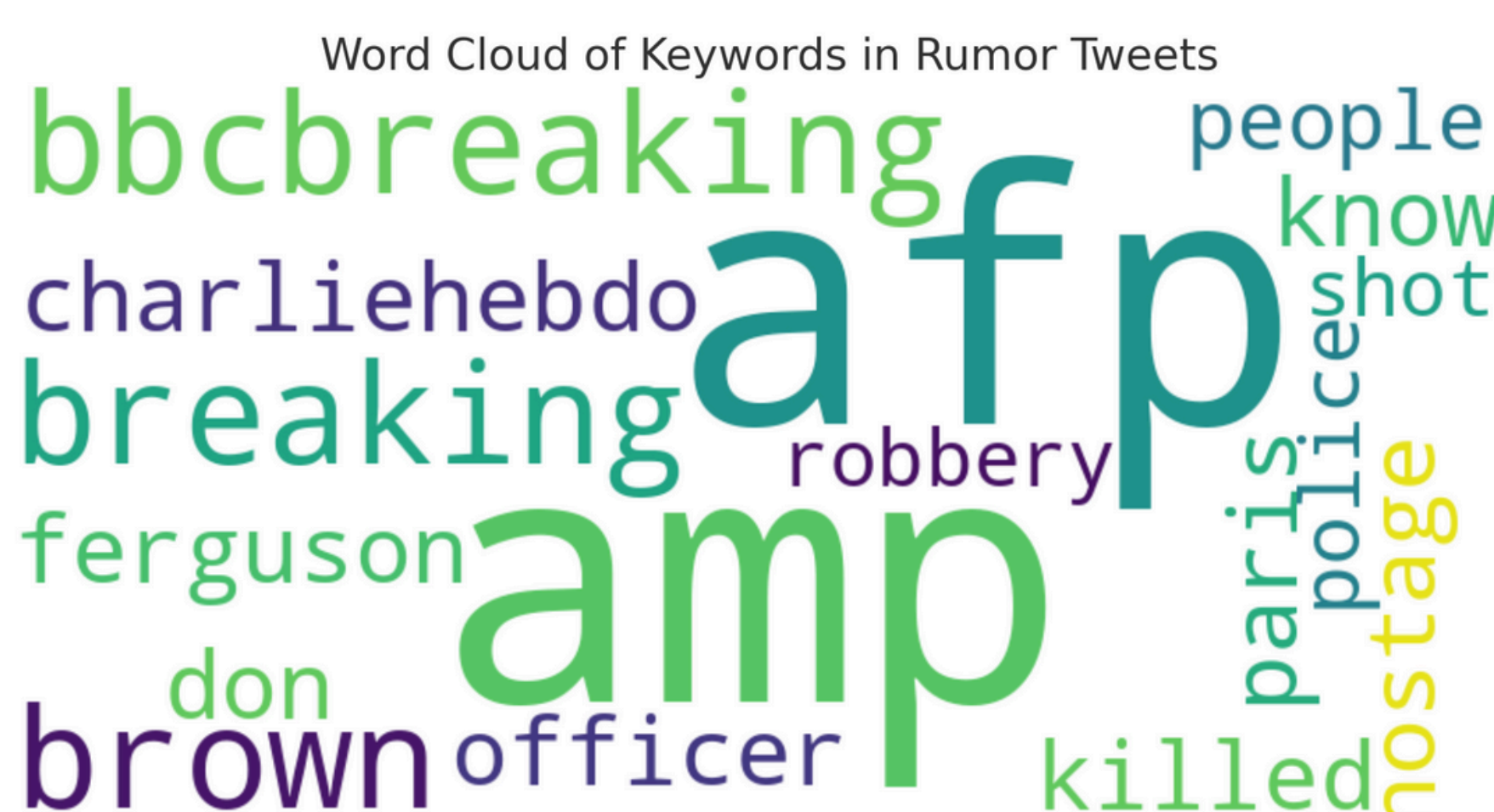
These findings underline the need for social media platforms to monitor and mitigate the role of influencers in spreading misinformation, especially during high-stakes events.



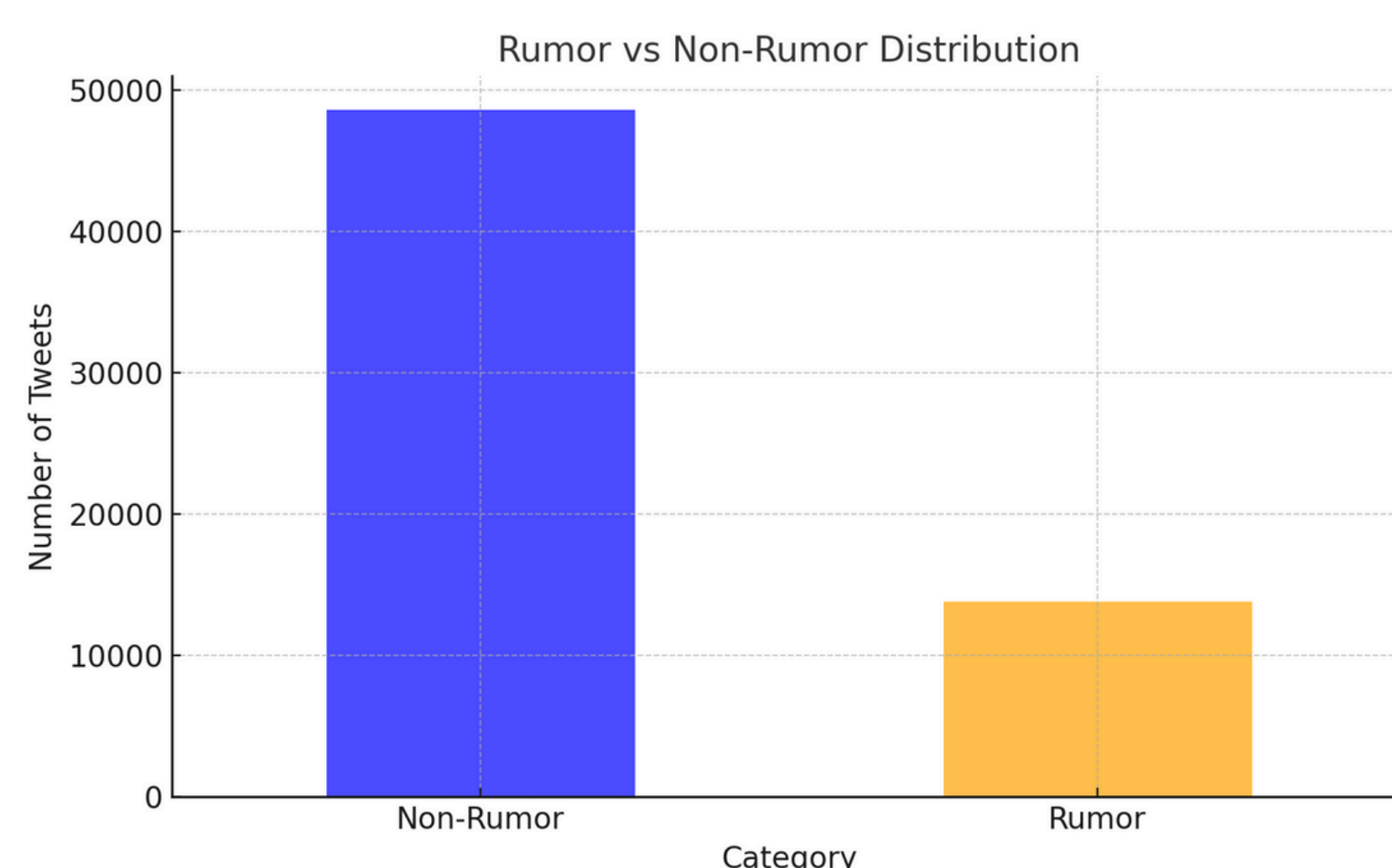
- **Insight:** A small group of highly active users disproportionately contributes to rumor tweets.
- **Interpretation:** Influential users, either intentionally or unintentionally, play a significant role in amplifying misinformation. This emphasizes the importance of targeted interventions.



- **Insight:** Key events like “charliehebd0” and “ferguson” dominate the discussions.
- **Interpretation:** These events likely generated a lot of attention and engagement, making them hotspots for both accurate information and rumors.



- **Insight:** Frequently used terms include “breaking,” “attack,” and “confirmed.”
- **Interpretation:** These keywords suggest that rumor tweets often use urgent and sensational language to grab attention and increase virality.



- **Insight:** Non-rumor tweets significantly outnumber rumor tweets in the dataset.
- **Interpretation:** This suggests that most content shared during breaking news events is verified. However, the presence of rumors indicates the need for monitoring misinformation spread.

## Conclusion

- Influential users play a critical role in spreading misinformation, leveraging their reach to amplify rumors.
- Topics associated with breaking news events are particularly susceptible to rumors.
- This study emphasizes the need for social media platforms to monitor and mitigate the role of influencers in misinformation spread.