

Is Twitter a Credible Source for Education Information?

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Executive Summary

1

The **majority of Twitter users are unverified** and do not belong to a credible organization. Beside unverified users, social media influencers have the highest tweet and retweet count.

2

Twitter users prefer to send **more tweets during the weekdays** instead of weekends. This is reasonable since schools, organizations, and government usually have weekend breaks.

3

Most of twitterers are located in United States, Europe, and India. **Top 3 twitterers** are located in **Riyadh, Houston, Florida**.

4

Government, social media influencers, and schools tweets more **duplicate contents**. Based on similarity, location, and volume, one **possible topic is school shooting** in the U.S.

Methodology



**Filter tweets
based on terms
related to Higher
Education**



**Data Cleaning &
EDA**



**Explore the most
influential
Twitter users**



**Analyze who the
twitter users are,
when they tweet,
and where they
are located**



**Tweets Similarity
Analysis using
LSH**



**Conclusion &
Recommendatio
n**

Data Overview

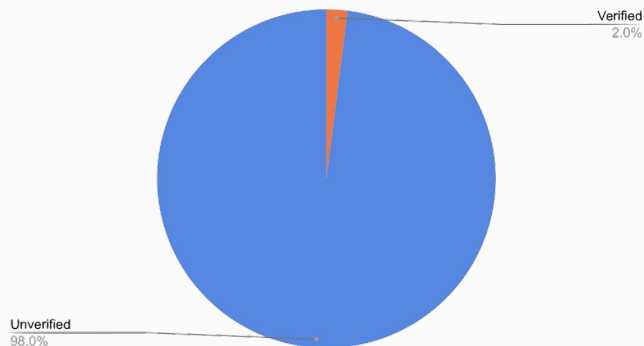


Filter the tweets text with keywords:

- Student
- Undergraduate
- University
- Scholarship
- Admission
- College



Distribution of account:



Important columns :

User	Id, name, location, verified, description
Organization	Government, schools, news outlets, universities, nonprofit organization, social media influencers, and other
Retweeted_status	Id, user id, retweet count, is retweet*
Time	Week, month, day, time, year
Place	Location name, country, place type, coordinates
Coordinates	Extract latitude and longitude

Total number of tweets : 27632817

*Is retweet: if it is equal to True, it means that it is being retweeted

Identify the most influential Twitterers (Original)

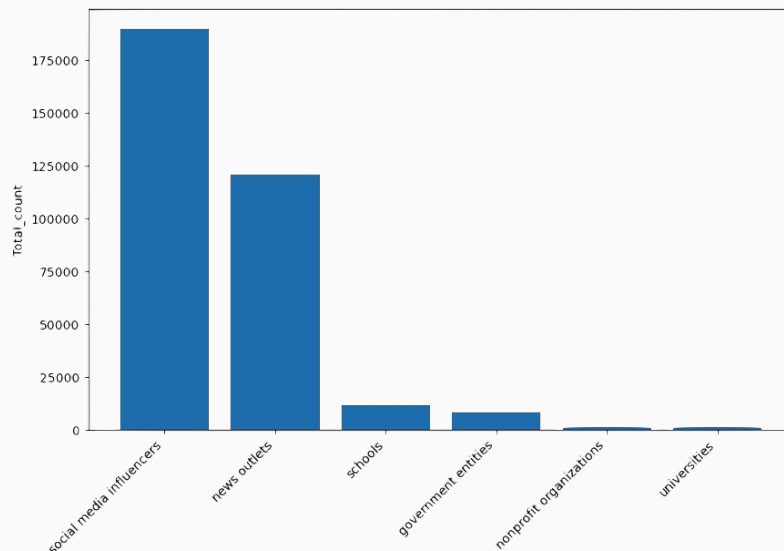
The top influential Twitter users are all unverified and categorized as “Other”, accounting for **96.2%**

Top 3 twitterers in “Other”:

- **Dennis Stemmler** with 9201 tweets
- **EssayPaperUK.com** with 6286 tweets
- **Study in Naija** with 6178 tweets

Beside “Other”, top three highest total tweets are social media, new outlets and school.

Organization Tweets Distribution*



Distribution*: Dropped the 'Other' category for better visualization of the other organizations' distribution

Identify the most influential Twitterers (Retweet)

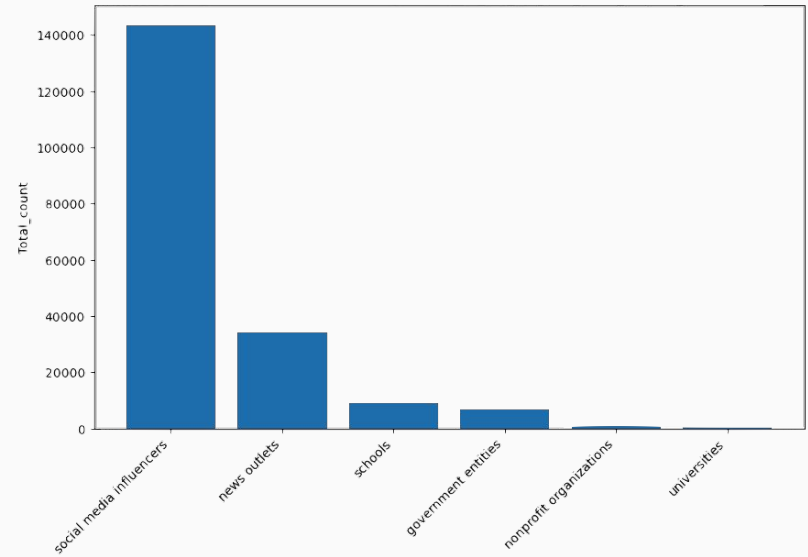
The top influential Twitter users are all unverified and categorized as “Other”, accounting for **99.0%**

Top 3 twitterers in “Other”:

- **Joe Windon** with 4659 tweets
- **Education World** with 2809 tweets
- **Sarah** with 2407 tweets

Beside “Other”, top three highest total retweets are social media, new outlets and school.

Organization Retweets Distribution*

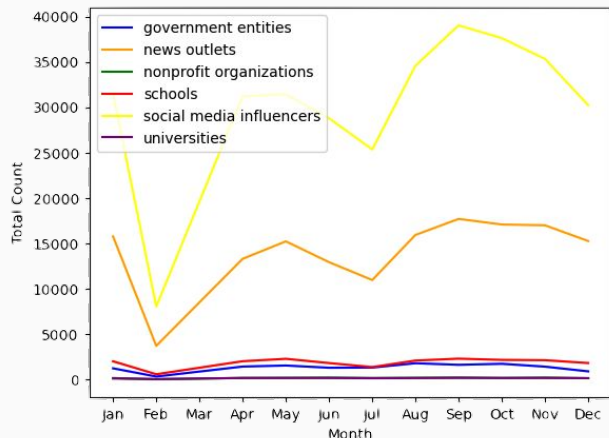


Distribution*: Dropped the 'Other' category for better visualization of the other organizations' distribution

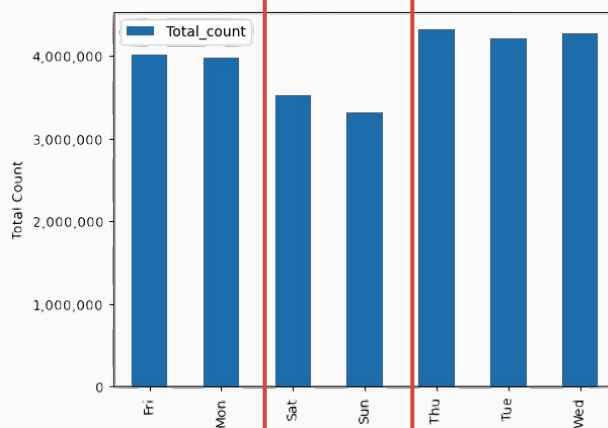
Tweets Timeline Analysis

- Social media influencers have the **most tweets** during **April to May** and **August to October**
- News outlets have a similar trend to social media influencers, with the **lowest tweets** during **February**
- There are **fewer tweets on Saturday and Sunday**, which may be due to the weekend break
- Most Twitter users tweet during the afternoon, between 2pm and 6pm

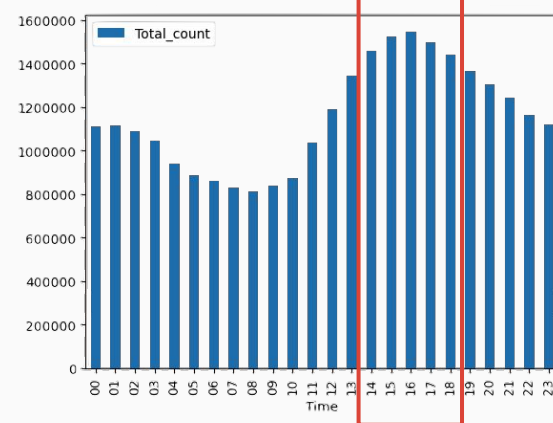
Tweets per month



Tweets per day



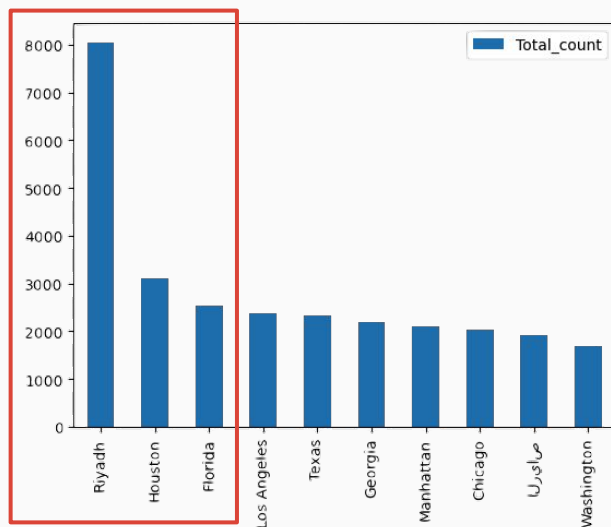
Tweets per hour



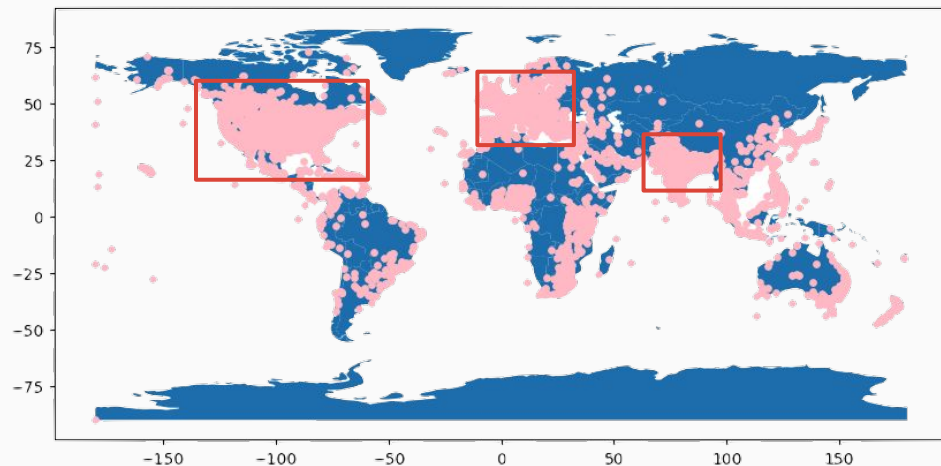
Identify Twitter's Location

- Riyadh (Saudi Arabia) has the highest number of tweets, followed by Houston and Florida
- **8 out of the top 10** Twitter users are from **United States**
- According to the map, most of the Twitter users are located at United States, Europe, and India

Top 10 Twitterers by Location



Global Twitter User Geolocation



School Shooting in the United States in 2022

Based on the Analysis:

- We found that social media influencers have the highest number of tweets
- Beside Riyadh, the top Twitter users location include Houston and Texas
- Most tweets happen in April to May and August to October

Possible trending topics:

- ➡ Robb Elementary School Shooting in Texas (May 24, 2022)¹
- ➡ Heights High School active shooter call (Sep 13, 2022)²
- ➡ Texas has seen the most school shootings followed by California, Illinois, Florida³

Finding from the similarity analysis related to the trending topics :

[u.s., president, joe, biden, and, the, first, lady, have, visited, the, scene, of, the, texas, school, shooting,, where, 19, students..., <https://t.co/rucyryqjgf>]

[rt, @kfdmnews:, breaking, update:, 18, students, and, adults, confirmed, dead, in, mass, shooting, at, robb, elementary, school, in, uvalde,, according, to, a...]

Article link:

1. <https://www.snopes.com/news/2022/05/26/how-many-school-shootings-2022/>

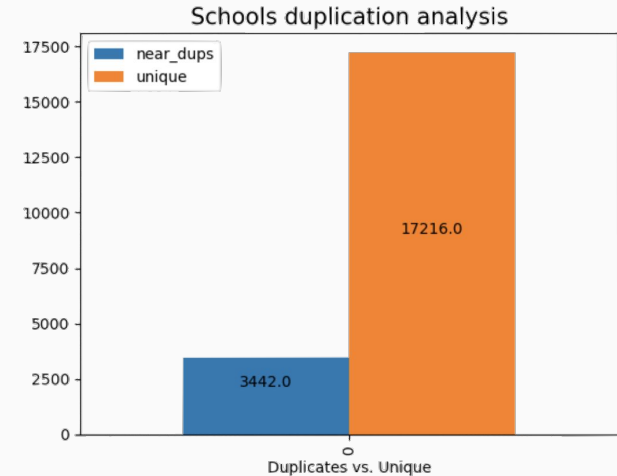
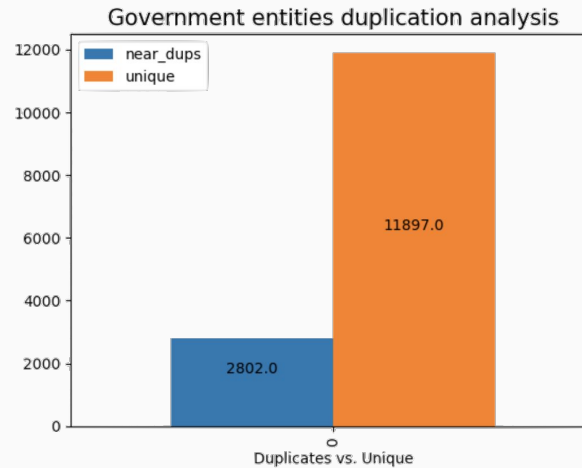
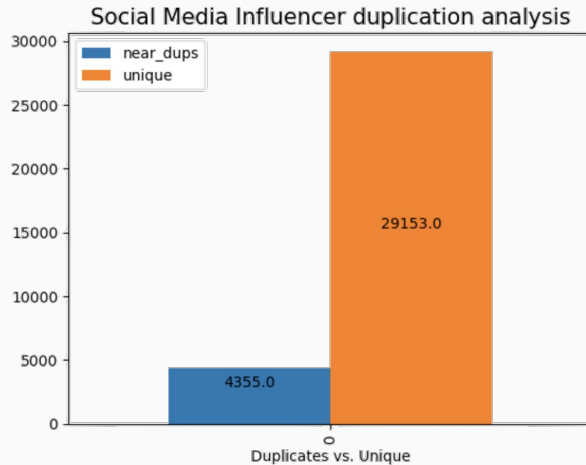
2.

<https://www.houstonpublicmedia.org/articles/news/houston/2022/09/13/432951/active-shooter-call-at-heights-high-school-unfound/>

3. <https://www.usnews.com/news/best-states/articles/2022-05-27/states-with-the-most-school-shootings>

Tweets Similarity Analysis

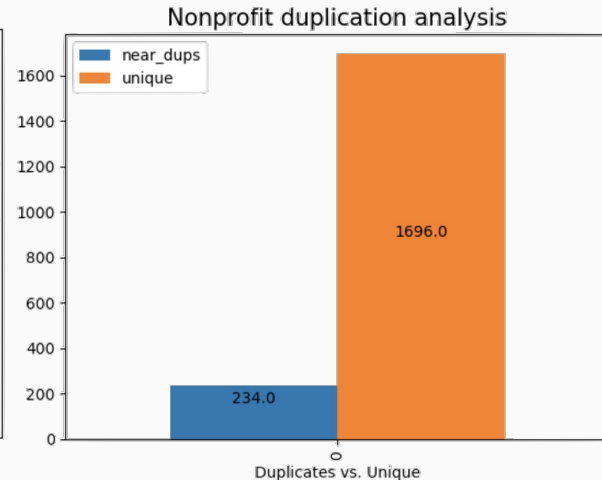
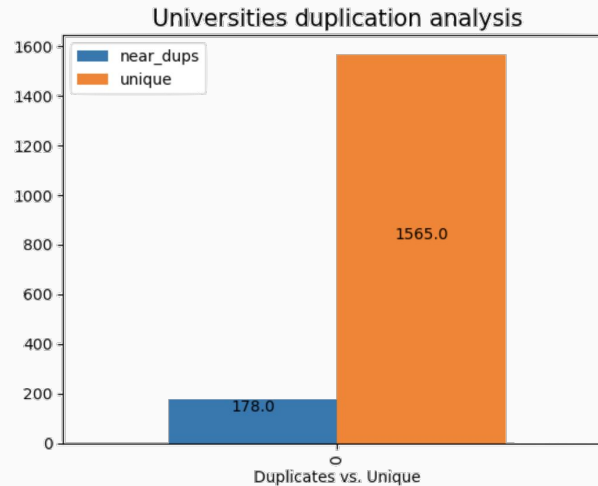
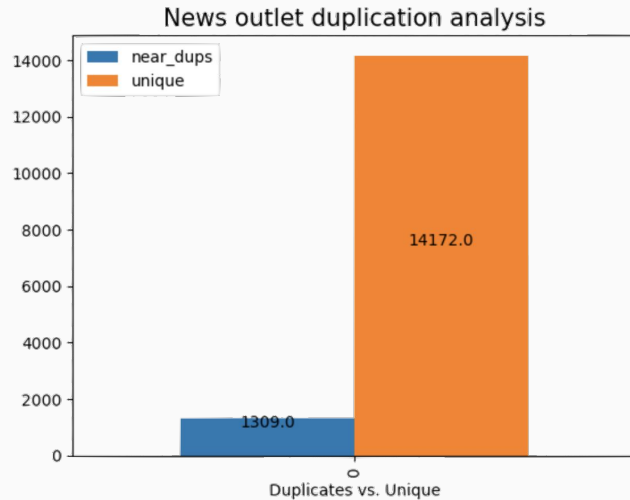
- All organization had a higher number of unique tweets which verified that this is original content
- The percentage of **duplicate content** were **higher** among **Social media influencers, government, and school**, which suggests that they may be sharing similar content.



Note: Similarity analysis was conducted on a random sample of 10% of social media tweets due to the large volume of data

Tweets Similarity Analysis

- All organization had a higher number of unique tweets which verified that this is original content
- The percentage of **duplicate content** were **lower** among **News outlet, Universities, and Nonprofit organization**, which suggests that they deliver more exclusive content



Note: Similarity analysis was conducted on a random sample of 10% of news outlet tweets due to the large volume of data

Conclusion & Recommendations

Conclusion

- A higher tweet volumes reflects the new hot topic in education, and can be considered a credible source of information.
- Twitter users are primarily located in densely populated cities.
- During events such as school shootings, the number of tweets usually increases significantly, and most of these tweets are sent during weekdays.
- The majority of tweets come from individual users and social media influencers.

Recommendations

- As there are many unverified accounts on Twitter, the platform could consider adding badges to tweets from authors who are identified as credible education experts. One way to indicate credibility is by considering whether the user has been endorsed or retweeted by other respected individuals in their field. This would make it easier to evaluate the credibility of education tweets on Twitter.
- When analyzing credible Twitter users, instead of solely relying on the total tweet count, other metrics such as influence score can also be considered to improve accuracy.
- It would be beneficial to segment the organizational part more concisely since the “other” category is quite large, adding more segments can help to gather more useful information.