Social Media Monitoring

Dealing with Hashtag campaigns.

Arthur Kakande,
Data Products Lead at Pollicy
What we will cover...

- Hashtag campaigns
- Data collection
- Data Analysis
- Data visualization

Tools

- R
- Workbench
- Excel (Google sheets)
- Python
What is a hashtag campaign?

A hashtag campaign is a marketing or advocacy initiative usually meant to gain social media attention, to create engagement, or drive traffic for a specific topic, product or idea. e.g. awareness on Gender Based Violence with #16DaysOfActivism

Best Practices;

- Pick something emotive
- Pick something unique
- Pick something short and catchy
- Monitor and Track
Why hashtags are great

- Hashtags collect information e.g. #UgandaDecides #COVID19.

- They can bring together attendees of an event, giving the audience a way to interact with each other e.g. #DataFestKampala.

- Hashtags are expressive i.e. allow people to express themselves or to create a sense of community e.g. #MeToo #BlackLivesMatter.
**Tools You Need**

- A Twitter or Facebook Account.
- API Access (Twitter or Facebook Developer Account).
- An App on your developer account that will generate the API credentials.
- R OR Python on your Device.
- rtweet package for R or tweepy for Python. Rfacebook package.
**API Access**

An API refers to Application programming interface. APIs are similar to web browsers but with different purpose:

- Web browsers render content.
- Web APIs manage and organize data.

For public APIs, many sites only allow authorized users, these include; Twitter, Facebook, Instagram, Github, Google maps, etc.
An API refers to Application programming interface. APIs are similar to web browsers but with different purpose:

Once access is granted in your developer account, navigate to the twitter developer portal. Create a standalone app or create a project and add an App in it, and then complete the form by filling in all the fields required such as application name, project name, etc.
**Preparations**

After applying and getting access to the APIs, use load or library or package in your local tool to get started. You will need to link your App that is authorized to your tool (R or Python).

R

```r
token <- create_token(app_name, consumer_key, consumer_secret)
#Authentication for the rtweet package
```

```r
setup_twitter_oauth(key, secret, accesstoken, accesstokensec)
#Authentication for twitteR package
```
Python

```python
auth = tw.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_token, access_token_secret)
api = tw.API(auth, wait_on_rate_limit=True)
```
Collecting hashtag data

```r
library('rtweet')
ogbvdata <- search_tweets("#SayNoToOnlineGBV", n=100, include_rts = F)
View(ogbvdata)

library(twitteR)
ogbvdata <- searchTwitter('#SayNoToOnlineGBV', n = 100)
View(ogbvdata)
```
<table>
<thead>
<tr>
<th>user_id</th>
<th>status_id</th>
<th>created_at</th>
<th>screen_name</th>
<th>text</th>
<th>source</th>
<th>display_text</th>
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<td>133338585304364001 2020-11-30 12:33 00                UnwantedWitness Day &amp; #10daysOfActivism2020 Occupy Space. The internet sh...</td>
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<tr>
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<tr>
<td>247659100 2020-11-30 12:00 13                goleandrew Too much hate and bitterness on here and UOT is also so g...</td>
<td>Twitter for iPhone</td>
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<tr>
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<td>Twitter for iPhone</td>
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<td>247659100 2020-11-30 12:58 28                goleandrew #AfricaDefenders By saying nothing, you empower bullies t...</td>
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<tr>
<td>247659100 2020-11-30 12:58 20                goleandrew When you know your worth, no amount of bullying can dim ...</td>
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<tr>
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<td>Twitter for iPhone</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>247659100 2020-11-30 11:55 50                goleandrew When cyberbullying occurs, the nasty posts, messages or te...</td>
<td>Twitter for iPhone</td>
<td></td>
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<tr>
<td>247659100 2020-11-30 11:55 15                goleandrew If the internet continues to be an arena where users can be ...</td>
<td>Twitter for iPhone</td>
<td></td>
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<td></td>
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<tr>
<td>247659100 2020-11-30 11:55 10                goleandrew Trolling refers to using social media, or even gaming platfo...</td>
<td>Twitter for iPhone</td>
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</tbody>
</table>
Scraping Twitter data with Workbench

Workbench includes connectors for several popular data sources, including Census data and Twitter. You can use Workbench’s Twitter connector to retrieve all tweets from a specific user, from a list of users, or matching a search query.

In accordance with Twitter’s API terms, you can only retrieve the last 3,200 tweets for a user or 1,000 for a search query, but you can collect all matching tweets going forward by turning on automatic updates.
**Dive into Workbench Demo!**

![Workbench Demo Screenshot](image_url)

### Sentiment Analysis

<table>
<thead>
<tr>
<th>Sentiment number</th>
<th>screen_name</th>
<th>created_at_timestamp</th>
<th>text</th>
<th>retweet_count</th>
<th>favorite_count</th>
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<tbody>
<tr>
<td>0.446</td>
<td>UnwantedWitness</td>
<td>2020-11-30T12:33:06Z</td>
<td>RT @dhrlab: Day 6: #66da...</td>
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<tr>
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<td>SSVKenya</td>
<td>2020-11-30T12:11Z</td>
<td>RT @PolicyOrg: Our stud...</td>
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<tr>
<td>0</td>
<td>KweetaUganda</td>
<td>2020-11-30T12:10:50Z</td>
<td>#SayNoToOnlineGBV #1...</td>
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<td>-0.9356</td>
<td>AbwoolFruity</td>
<td>2020-11-30T12:05:40Z</td>
<td>RT @DlDigital: In a societ...</td>
<td>3</td>
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<tr>
<td>-0.9527</td>
<td>goleandrew</td>
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<td>RT @MWizzeSophy: Too m...</td>
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<td>2020-11-30T11:59:50Z</td>
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<tr>
<td>0.5255</td>
<td>goleandrew</td>
<td>2020-11-30T11:58:33Z</td>
<td>RT @AfricaDefenders: #C...</td>
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<tr>
<td>0</td>
<td>goleandrew</td>
<td>2020-11-30T11:58:28Z</td>
<td>RT @encryptUg: @Africa...</td>
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<td>2020-11-30T11:58:20Z</td>
<td>RT @phionacaroline: Whe...</td>
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<tr>
<td>-0.8979</td>
<td>MTumushime</td>
<td>2020-11-30T11:55:54Z</td>
<td>RT @PolicyOrg: Women ...</td>
<td>9</td>
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</tr>
</tbody>
</table>
Comparing performance

Unique mentions
To use Excel, just apply the `COUNTUNIQUE` function to the column being evaluated.
To use R, apply `UNIQUE` to the column and `LENGTH` to this output.

Total Mentions
This can be evaluated in terms of volume of tweets, which will be the total number of tweets collected over a period. To do this in Excel, you can simply click the column header and the status bar, in the lower-right corner of your Excel window, will tell you the row count.
To use R, just apply `NROW()` to the column.
Selecting Influencers

Tweet volume by user
Obtain the frequency of the usernames and select the top popular users. To do this in R, apply the table function to the column. To do it in Excel you would need to create a list of unique usernames and count how many times each one appears.

User engagement (Followers, Number of Likes & Retweets)
You can use the above identified list to look at the metrics of each and evaluate who is a better influencer for you.
Understanding perceptions

Sentiment analysis (or opinion mining) uses natural language processing and machine learning to interpret and classify emotions in subjective data. Sentiment analysis is often used in business to detect sentiment in social data, gauge brand reputation, and understand customers.

Using packages and libraries such as sentimentr & tidytext in R or NLTK in python; you can be able to extract emotions and feelings out of the tweets or posts.

Let dive into a demo
Visualizing hashtag data

Network Analysis
Network visualization lets you simplify complexity, see context and understand detail. With one chart, you can get an overview or dive into specific connections.

Examples of networks:
- Retweet Network
- Follower Network
- Friends Network
Visualizing hashtag data

Using Maps
Visualizing data with maps provides greater ability to more easily understand the distribution across the city, state, country, or continent.
Thank You