

# README for Kingdom of Trolls? Influence Operations in the Saudi Twittersphere

Christopher Barrie and Alexandra A. Siegel

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The below describes the overall file structure:

```
#get tweets from Saudi Arabia
0_00_saudistream.ipynb
#generate .csv of tweets from Saudi Arabia
0_01_saudistream_gencsv.ipynb
#get last 3,200 tweets of users in Saudi Arabia
0_02_get_saudiuserstweets.R
#combine all Saudi Arabia tweets (SA sample)
0_03_combine_saudiuserstweets.R
#get IO tweets from Twitter releases and filter to Saudi Arabia
0_04_get_saudi_IO_tweets.R
#get most followed Saudi users from socialbakers list
0_05_get_most_followed_SAusers.R
#read and clean TOP and NEWS Saudi users from Historical Power Track stream
0_06_clean_SA_top_accounts.R
#read Saudi geolocated tweets from Historical Power Track stream
0_07_get_SA_geo_tweets.R
#plot geolocated users clipped to Saudi Arabia borders
0_08_plot_SA_geo_tweets.R
#get last 3,200 tweets of all users geolocated to Saudi Arabia
0_09_get_geo_user_tweets.R
#combine all geolocated tweets for GEO sample
0_10_combine_geo_user_tweets.R

#filter IO tweet releases and hydrate tweet IDs for SA, GEO, and NEWS samples
1_00_hydrate_analysis_data.R
#compare mentions of IO accounts across SA and GEO samples
1_01_compare_inf.R
#compare engagement with IO accounts to SA, GEO, NEWS, and TOP
1_02_compare_engagement.R
#compare contentious topic engagement for IO accounts against SA, GEO, NEWS, and TOP
1_03_compare_topics.R
#get account names of users mentioning IO account
1_04_get_mentioning_accounts.R
#generate matrix for network visualization (done in Gephi)
1_05_network_analysis.R
#get top users for coding by account type
1_06_top_users_for_human_coding.R
#get top hashtags shared by news accounts
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1_07_top_hashtags_news_tweets.R
#compare SA and GEO sample characteristics
1_08_compare_samp_characteristics.R
#compare engagement with other political across IO, SA, GEO, NEWS, and TOP
1_09_compare_alt_topics.R

#folder structure for relative file paths in scripts:
data
  analysis
  output
    plots
    saudigeousertweets
    saudigeousertweets_combined
    saudiusertweets
  replication_tweetIDs
    GEOusertweets19_allIDS.txt
    IOtweets19_allIDS.txt
    NEWSusertweets19_allIDS.txt
    SAusertweets19_allIDS.txt
    TOPusertweets19_allIDS.txt
  shapefiles
    SAgeopoints.dbf
    SAgeopoints.prj
    SAgeopoints.shp
    SAgeopoints.shx
    SAgeopoints_clipped.dbf
    SAgeopoints_clipped.prj
    SAgeopoints_clipped.shp
    SAgeopoints_clipped.shx
  sau_adm0
    SAU_adm0.cpg
    SAU_adm0.csv
    SAU_adm0.dbf
    SAU_adm0.prj
    SAU_adm0.shp
    SAU_adm0.shx

```

Scripts numbered with prefix “0\_” are used to collect the tweet datasets used in the analyses. The TOP and NEWS tweets were streamed with the proprietary Historical Power Track API and so we do not include code used for their collection. The original GEO tweets were also collected using the Historical Power Track API and so we do not include code used for their collection. The IO tweets were taken from the unhashed versions, which are accessible via application to Twitter Transparency here. The publicly available unhashed versions, available at the same address, are an alternative to the unhashed data: they differ only in that the usernames and other identifying information of users with < 5000 followers are omitted.

The scripts numbered with prefix “0\_” are included in these replication files for the sake of completeness and transparency. Given that the data were collected in 2020, and the API returns only a random subsample of tweets, using the same scripts now to query the Twitter API will not return the same data.

As such, we provide an additional script “1\_00\_hydrate\_analysis\_data.R” that can be used to hydrate tweets IDs for all non-IO datasets; i.e., the SA, GEO, NEWS, and TOP samples. It is worth noting that hydrating these tweets will not result in exactly the same sample sizes or tweets as tweets that have subsequently been deleted will not be retrievable. We also provide the IDs for the IO tweets, which will save researchers time if they wish to filter the Saudi Arabia IO tweets provided by Twitter Transparency to include only those tweets we include in our analyses. Example scripts for how to do this are also provided.

All subsequent scripts with prefix “1\_” include the code used to analyze the five tweet samples used in the article.