## Global Warming sentiment shifts Twitter Sentiment Analysis

Andrea Pena Elena Eidson Franchi Uzcategui Laura Rendon Fergusson Wendy Castellanos



### Global Warming sentiment shifts

Was there any change in the positive feeling among Twitter users about Global warming after the U.S announced it would leave the Paris climate agreement on June 1, 2017?

Is there any difference in the proportions of positive sentiments among Twitter users before and after the U.S announcement?

#### **Alternative Hypothesis (HA)**

Twitter sentiments related to Global warming were predominantly positives, and these were affected when U.S announced that it would leave the Paris climate agreement on June 1,2017.

Sentiment population proportion before and after the U.S announcement are different, one value to the other.

Ha: proportion pre-U.S Ann. ≠ proportion post-U.S Ann.

#### Null Hypothesis (HO)

Twitter sentiments related to Global warming were predominantly positives, and these were not affected when the U.S announced that it would leave the Paris climate agreement on June 1, 2017.

Sentiment population proportion before and after the U.S announcement are not different, one value to the other. Ho: proportion pre-U.S Ann. = proportion post-U.S Ann.





nltk

textclean Rstem sentiment ggplot2 wordcloud

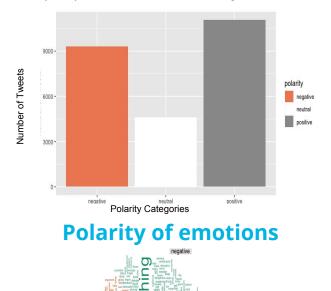
#### **Data Evaluation Tools and Processes**

-Data Collection(Tweetscrapper,json)

- -Data Cleaning(nltk, re, texclean)
- -Sentiment Analysis(Rstem,Sentiment)
- -Visualization(ggplot2, wordcloud)

## Sentiment Analysis

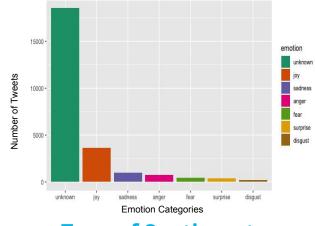
Polarity Analysis of Tweets on Global Warming before June 1st 2017



nositiv

neutral

Sentiment Analysis of Tweets on Global Warming before June 1st 2017



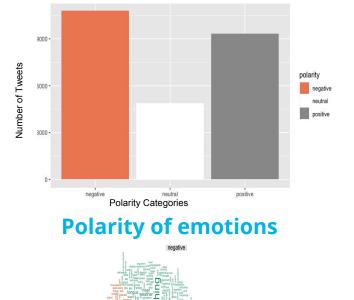
#### **Type of Sentiments**



Twitter sentiments related to Global warming before U.S announced that it would leave the Paris climate agreement (from June 1st 2016 to May 31rd 2017) -Sample : 25,000 Tweets

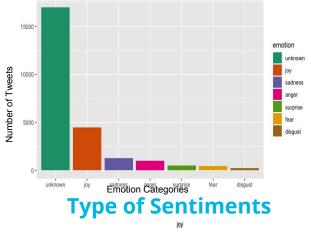
## Sentiment Analysis

#### Polarity Analysis of Tweets on Global Warming after June 1st 2017



neutral

Sentiment Analysis of Tweets on Global Warming after June 1st 2017



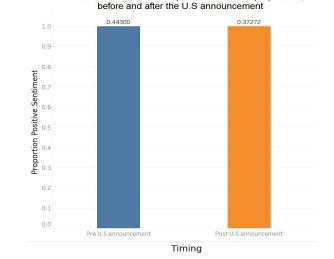


Twitter sentiments related to Global warming after U.S announced that it would leave the Paris climate agreement (from June 1st 2017 to June 1st 2018) -Sample : 25,000 Tweets

# Conclusion

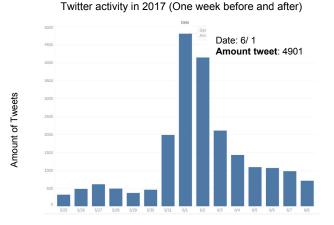
According to both proportions, we confirm our alternative hypothesis: Twitter's sentiments about Global warming were predominantly positives, and these were affected by the U.S announces.

Thus, the positive feeling among the Twitter's users about the Global warming change to negative after the U.S announces, differing both in the sentiment population proportion before and after the U.S announcement.



Differences between the positive sentiment proportions,

The U.S announces that it would leave the Paris climate agreement.



### Group: GW Fake vs. Real



Franchi Uzcategui @franchi



Laura Rendon Fergusson @Laura Rendon Fergusson



Wendy Castellanos @wendy





# Works Cited

- Jonbakerfish, *TweetScraper is a Scrapy crawler;* 07/09/18; https://github.com/jonbakerfish
- Scrapy; 07/09/18; https://scrapy.org
- Jacob Perkins, *Processing with NLTK 3 Cookbook*, Second edition: August 2014, Published by Packt Publishing Ltd, 07/17/18; www.packtpub.com
- Julien Heiduk, Twitter Analysis with Python,07/20/18; https://datascienceplus.com/twitter-analysis-with-python/
- **owygs156(Blogger)**, *Automatic Text Summarization with Python;* 07/12/18; http://ai.intelligentonlinetools.com/ml/
- Python Tutorials, NLTK; 07/10/18 accessed; https://pythonspot.com/category/nltk/
- **Rodolfo Ferro**, *Sentiment analysis on Trump's tweets using Python;* 07/10/18; https://dev.to/rodolfoferro/sentiment-analysis-on-trumpss-tweets-using-python-
- Simon Lindgren, Scrape tweets without the API.,07/10/18, http://www.simonlindgren.com/stuff
- /2017/11/7/scrape-tweets-without-using-the-api
- **Stackoverflow**, *Convert Dataframe column type from string to datatime*, 07/14/18, https:// stackoverflow.com/questions/17134716/convert-dataframe-column-type-from-string-to-datetime
- **Stackoverflow**, *Counting the Frequency of Words in a pandas dataframe*,07/14/18, https:// stackoverflow.com/questions/46786211/counting-the-frequency-of-words-in-a-pandas-data-frame