



# Twitter Sentiment Analysis





# Introduction

Twitter, a social networking giant connects millions of people

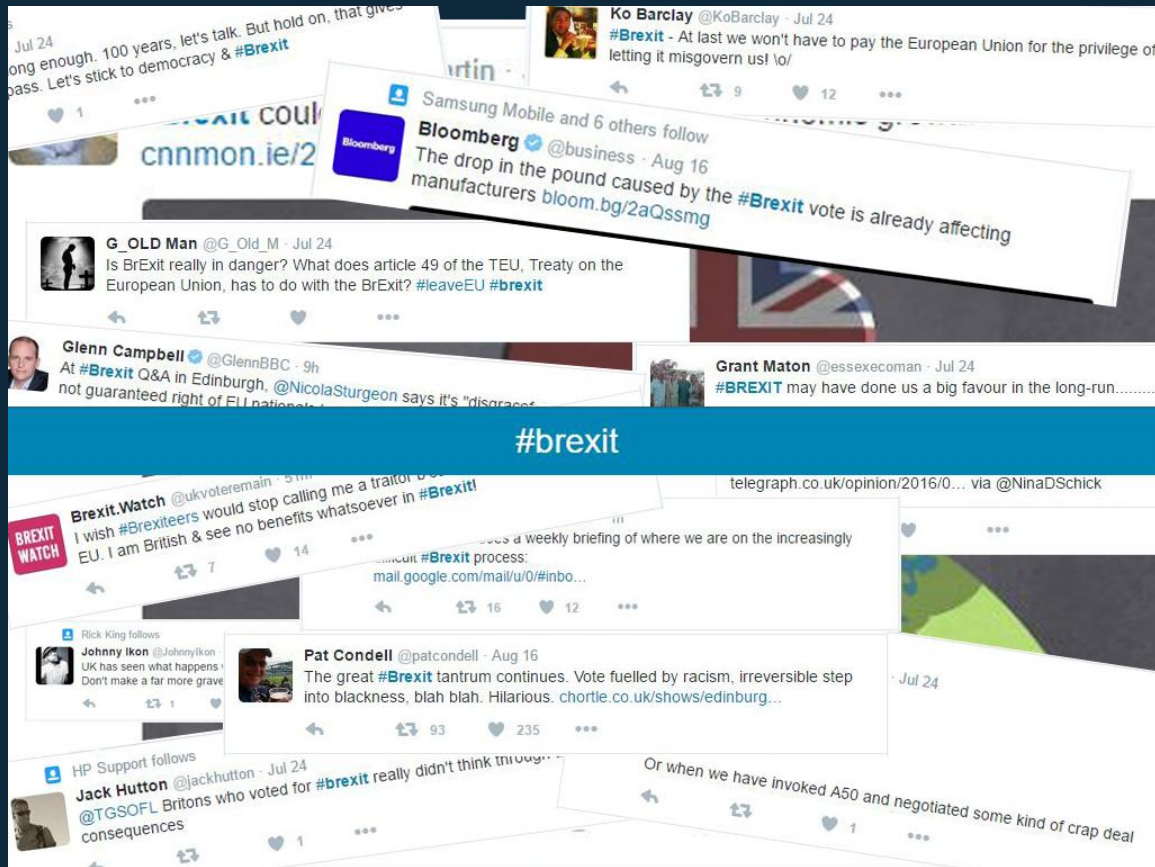
Social Media is the most impactful medium in terms of expressing one's opinions due to a global outreach

Twitter is not just a social network, it's an information network!



Too  
many  
tweets!?

Impractical to  
interpret by  
reading





# 52,448,155+

Estimated Social Media Reach for #brexit

Whoa! That's a big number!





# So Why Sentiment Analysis?

:-) ?   :-| ?   :-( ?



# Sentiment Analysis

- ◆ Identifying and categorizing opinions expressed in a piece of text
- ◆ Determine whether the writer's attitude towards a particular topic, product, etc. is positive, negative, or neutral
- ◆ Used to gain an understanding of the attitudes, opinions and emotions expressed within an online mention
- ◆ Useful in social media monitoring





# BRExit

Withdrawal of the United  
Kingdom (UK) from  
the European Union (EU)



# About BRExit



◇ In the June 2016 referendum, 52% voted to leave the EU, leading into a complex separation process implying political and economic changes for the UK and other countries

◇ Since then, this topic has been trending on Twitter and other social networking sites

Results by region (left) and by local council district (right)

■ Leave  
■ Remain







## ◇ Britain Divided Over Brexit??

- As Britain Votes on Brexit, Opinions Divided Across Continent

◇ 4/10 people want another referendum

- One in Eight 'Leave' voters have Second thoughts



# Analysing Brexit Impact





Our approach is  
easy

Extracting Tweets

Sentiment  
Analysis

Data  
Analysis



# Tools Used

- Rstudio
- Tableau



A decorative pattern of hexagons in various shades of blue and cyan is located on the left side of the slide. Some hexagons contain white icons: a lightbulb, a thumbs-up, a smartphone, a magnifying glass, and a gear. A large cyan hexagon in the center of this pattern contains the white number '1'.

# 1

## Extracting Tweets

- ✓ Creating a Twitter App
- ✓ Using #BRExit to search tweets (Corpus Creation)
- ✓ Other Tweets cleaning and processing functions

# Twitter Apps



**Brexity Analyzer**

Sentiment analysis of Tweets

#brexit\_stack.csv - Notepad

File Edit Format View Help

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"created","favoriteCount","favorited","id","isRetweet","language","latitude","location","lon
"2016-08-19",0,FALSE,"766587942408220672",TRUE,"en-gb",NA,"",NA,"http://pbs.twimg.com/profil
"2016-08-19",0,FALSE,"766587932786434048",TRUE,"en",NA,"Cambridge, England",NA,"http://pbs.t
"2016-08-19",0,FALSE,"766587932786434048",TRUE,"en",NA,"Speaker's Chair",NA,"http://pbs.twimg.com/profile_images/520565
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are losing theirs and blaming it on you..." - Your #brexit erudition is ace!",FALSE
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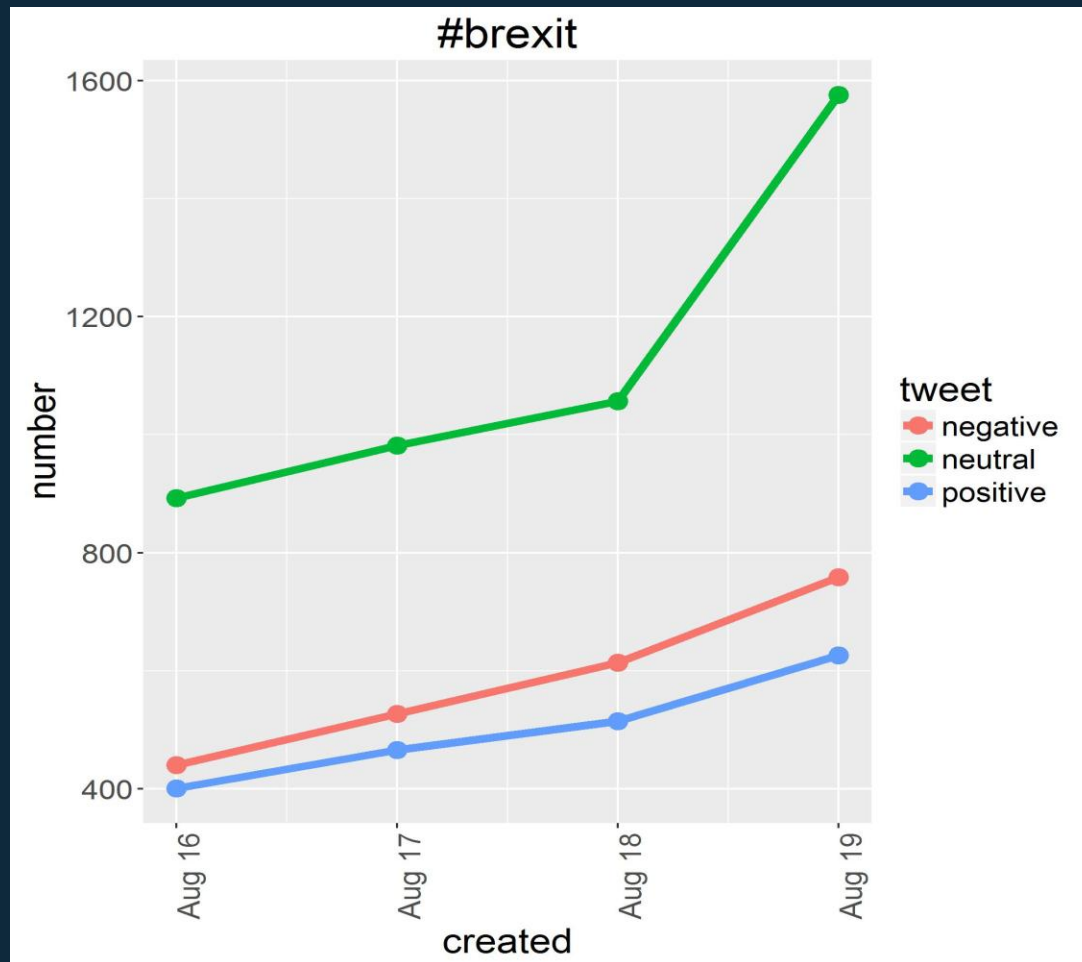
A decorative pattern of hexagons in various shades of blue and teal. Some hexagons contain icons: a lightbulb, a thumbs up, a smartphone, a magnifying glass, a gear, and a speech bubble. A large teal hexagon in the center-left contains the number '2'.

# 2

## Sentiment Analysis

- ✓ Importance of Opinion Lexicon
- ✓ Using Opinion Lexicon for scoring tweets
- ✓ Classifying Processed tweets into sentiments
- ✓ Preparing data for further data analysis

# Score Plot



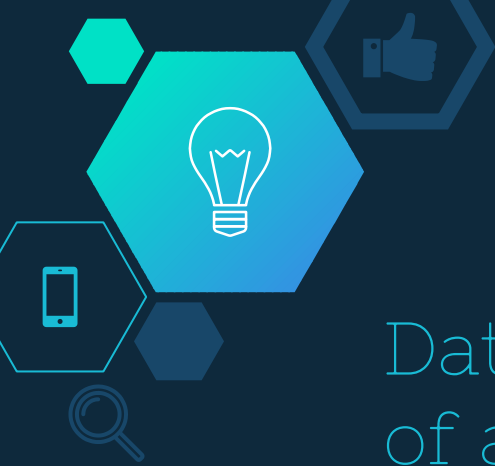


A decorative pattern of hexagons in various shades of blue and cyan. Some hexagons contain icons: a lightbulb, a thumbs up, a smartphone, a magnifying glass, and a gear. A large cyan hexagon in the center-left contains the number 3.

# 3

## Data Analysis

- ✓ Introduction to Tableau
- ✓ Representing data in charts
- ✓ Creating dashboard



# Data analysis is the lifeline of any business

- ◇ Data analysis is not a decision making system, but decision supporting system
- ◇ Structuring the findings from survey research or other means of data collection
- ◇ Break a macro picture into a micro one
- ◇ Acquiring meaningful insights from the dataset





A picture is better than a million words

Bar graph

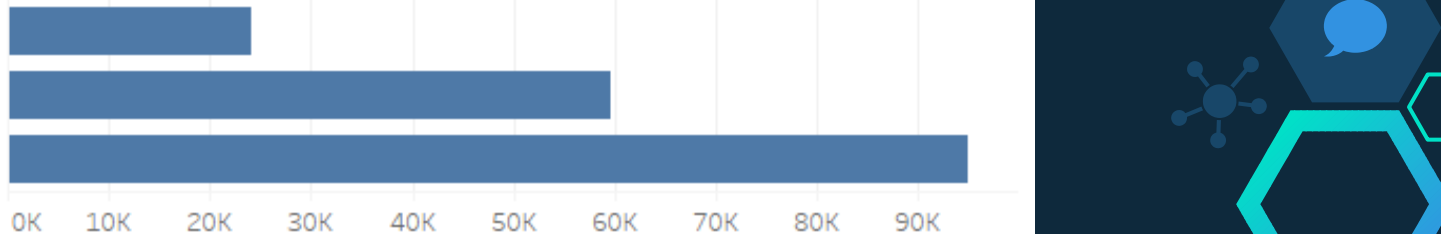
Tweet 

negative

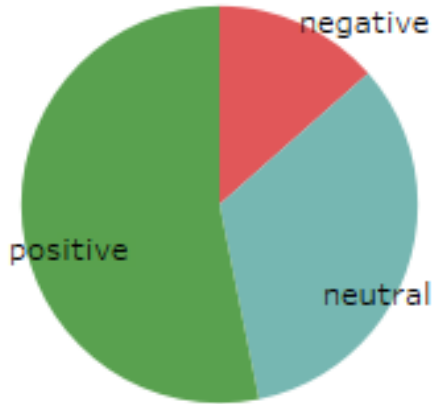
neutral

positive

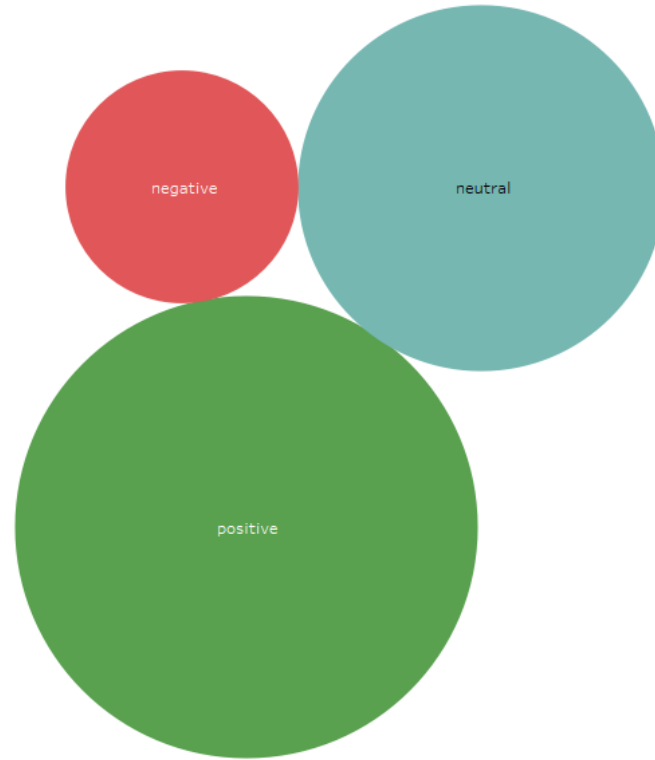
0K 10K 20K 30K 40K 50K 60K 70K 80K 90K



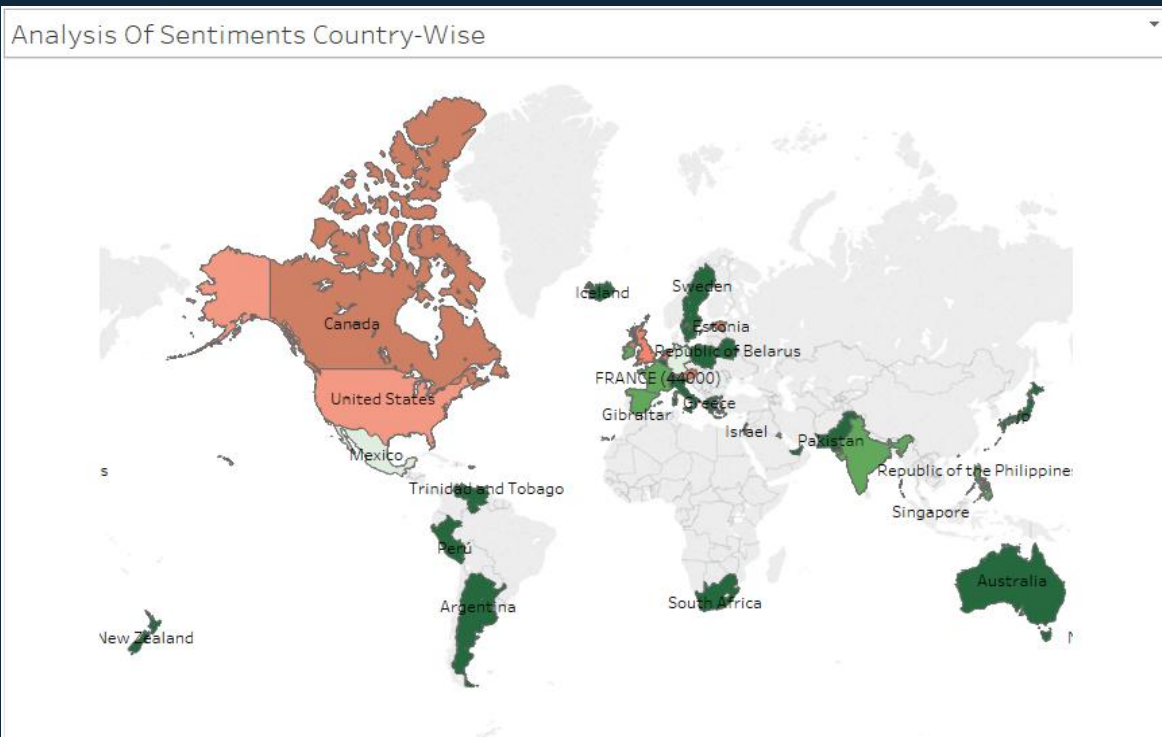
Pie Chart



Bubble Analysis



# Graphically representing sentiments country-wise





Tree Map





# Inferences and Conclusion

- ◇ 53.17% and 13.49% of tweets exhibit a positive and negative response respectively about BRExit and its impact
- ◇ 33.33% tweets are analyzed to be neutral
- ◇ Countries like USA, Canada, and parts of Europe including UK itself and Netherlands etc scale more negative responses over positive





# Future Scope

- ◇ Implement Emotion analysis
- ◇ This analysis is based only on recent tweets. Hence, increase efficiency by extracting a larger and more relevant corpus.
- ◇ Modify approach to include score based on retweets and favorites.







# Acknowledgements

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