Sentiment Analysis

exploration into emotion

Week 10

GSIAS, HUFS, Data Mining for Social Science

Sentiment Analysis

Sentiment analysis studies opinion text; there was almost no research into this topic from either the linguistics community or the NLP community before the year 2000

"Just booked two nights at this hotel"

"Great service for an affordable price. We will definitely be booking again"

"Horrible service, This room was dirty and unpleasant, Not worth the Money"
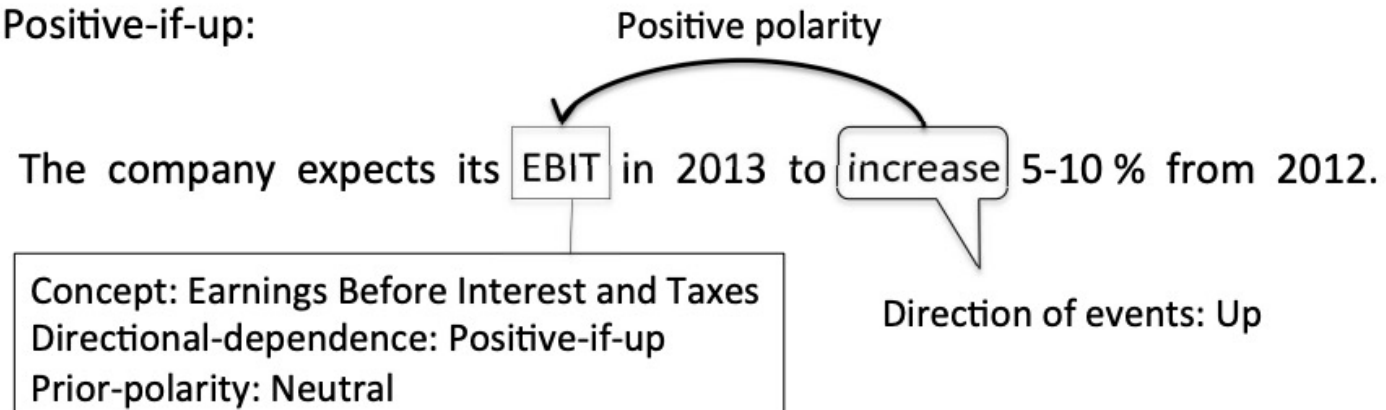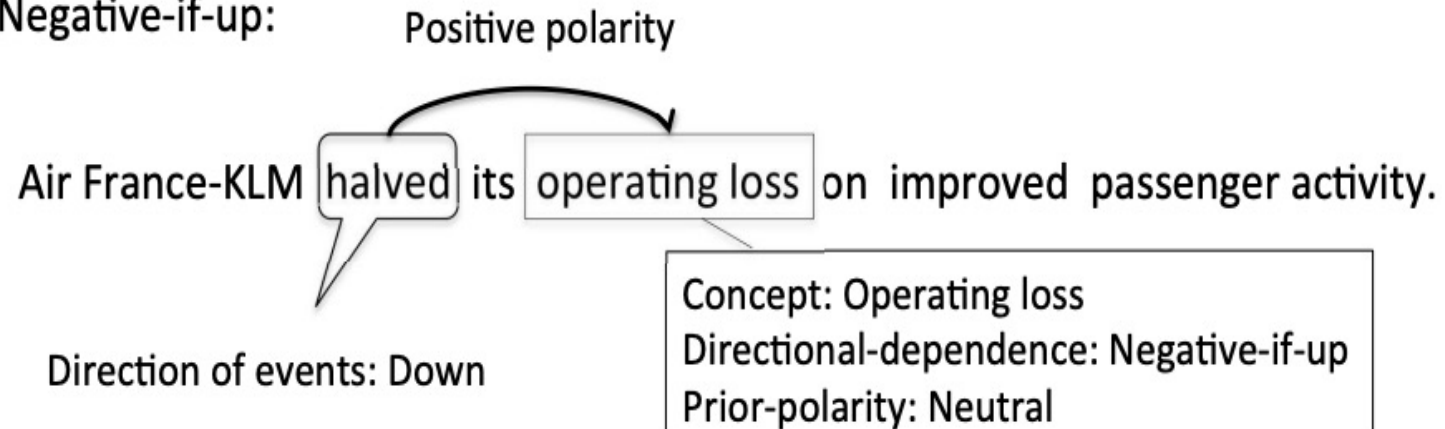
Sentiment Analysis

Sentiment

is defined as an attitude, thought, or judgment prompted by feeling, whereas opinion is defined as a view, judgment, or appraisal formed in the mind about a particular matter.

Sentiment Analysis

(a) Positive-if-up:

Positive polarity

The company expects its EBIT in 2013 to increase 5-10 % from 2012.

Concept: Earnings Before Interest and Taxes
Directional-dependence: Positive-if-up
Prior-polarity: Neutral

Direction of events: Up

(b) Negative-if-up:

Positive polarity

Air France-KLM halved its operating loss on improved passenger activity.

Direction of events: Down

Concept: Operating loss
Directional-dependence: Negative-if-up
Prior-polarity: Neutral

Pekka Malo et al. (2013) Good Debt or Bad Debt: Detecting Semantic Orientations in Economic Texts
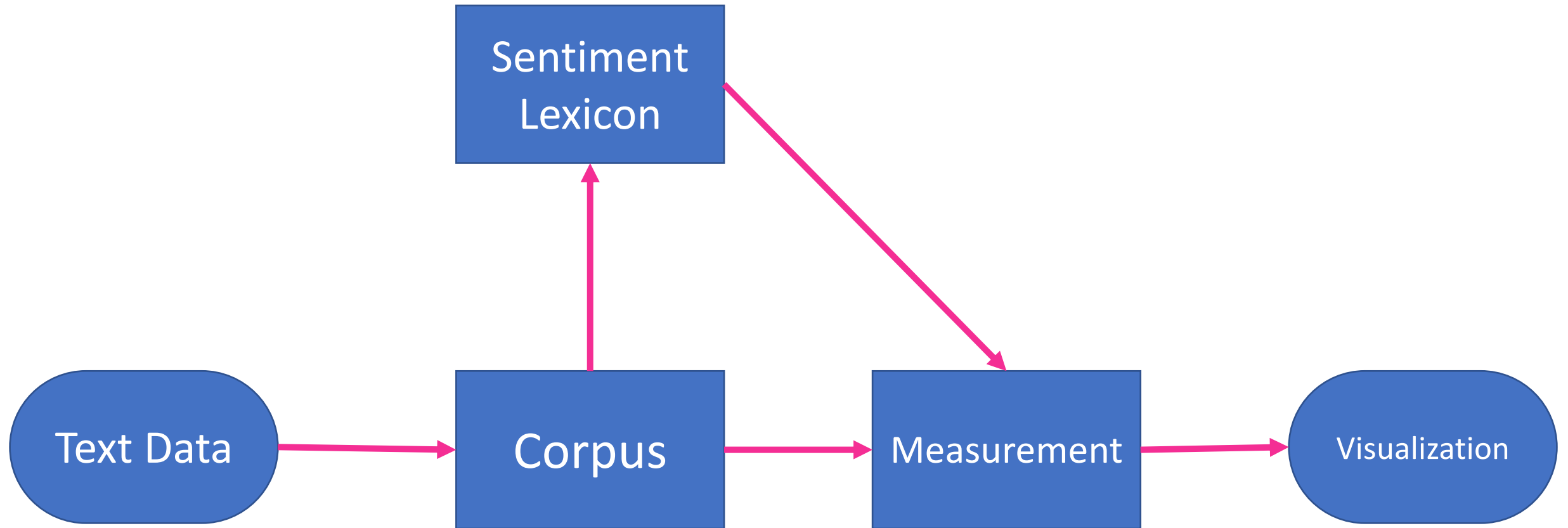
4

Process of Sentiment Analysis

Methodology of Sentiment Analysis
- Determine the issue to be analysed
- Establish the goals to be revealed by Sentiment Analysis
- Design the intended research procedure
- Do a pilot study
- Construct an open-ended question
- Obtain responses from sample respondents
- Analyse the responses using methodologies and software for Data mining
- Interpret results
- Condense the sentiment

Basic Workflow

The Problem of Sentiment Analysis

It is subjective.
This subjectivity could create some issues; different people may have different experiences, and thus they could give different opinions.

Different domain creates different subjective opinion.
Each field has different jargon.

Political Sentiment Dictionary: Lexicoder Sentiment Dictionary (LSD) Dictionary
Economic and Financial Sentiment Dictionary: Loughran-McDonald Master Dictionary

TDM Studio
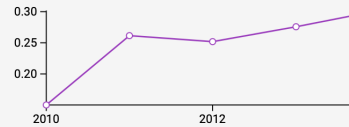
https://tdmstudio.proquest.com/home

Topic List by Keywords

Topic Modeling groups together keywords based on their occurrence in the documents in order to create a topic.
Topics are automatically generated from the documents in your selected project and keywords provide insights into the likely subject of the topic.
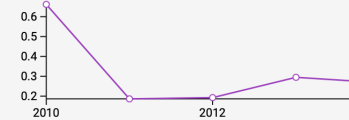
Number of Topics: 5 topics

TOPIC 1
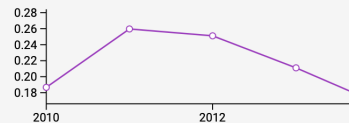mr, united, american, trump, government, states, state, saudi, al, president...

TOPIC 2
people, mr, police, islamic, state, city, year, new, group, family...

TOPIC 3
mr, muslim, people, party, political, new, country, right, religious, world...

ProQuest
TDM Studio   Visualization

choidooyoungwicks@hufs.ac.kr Logout

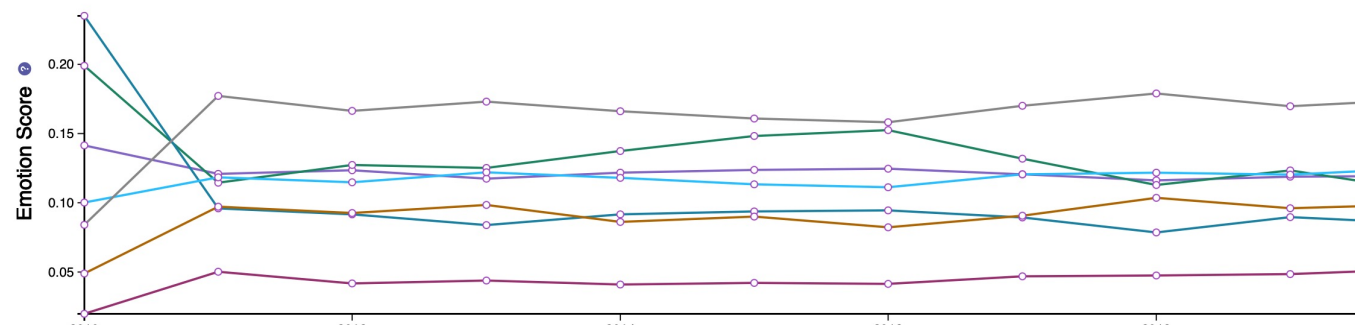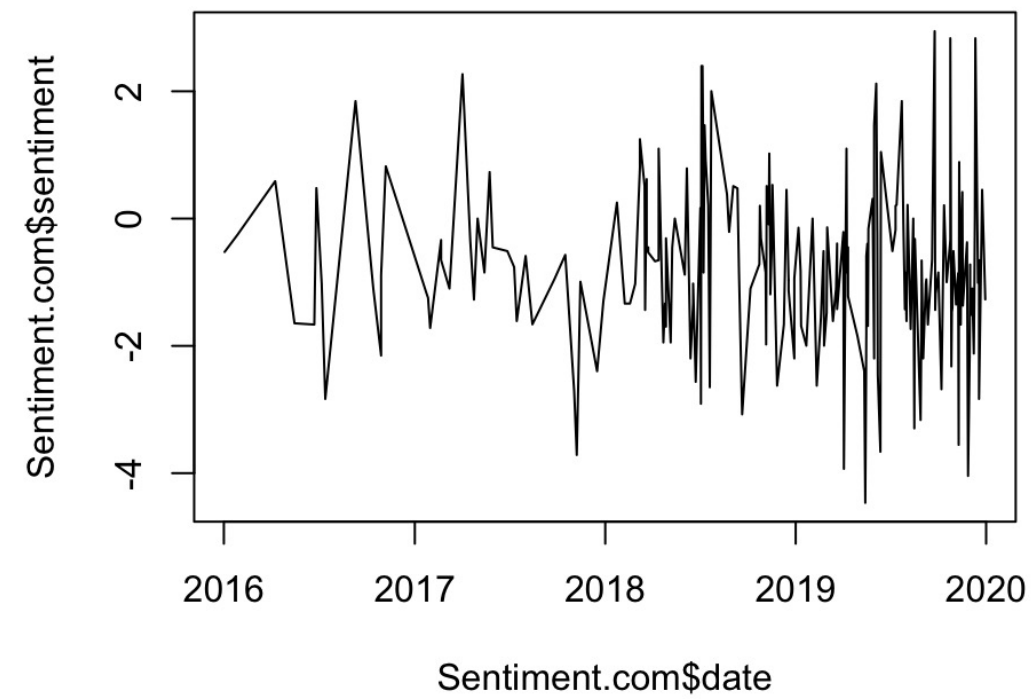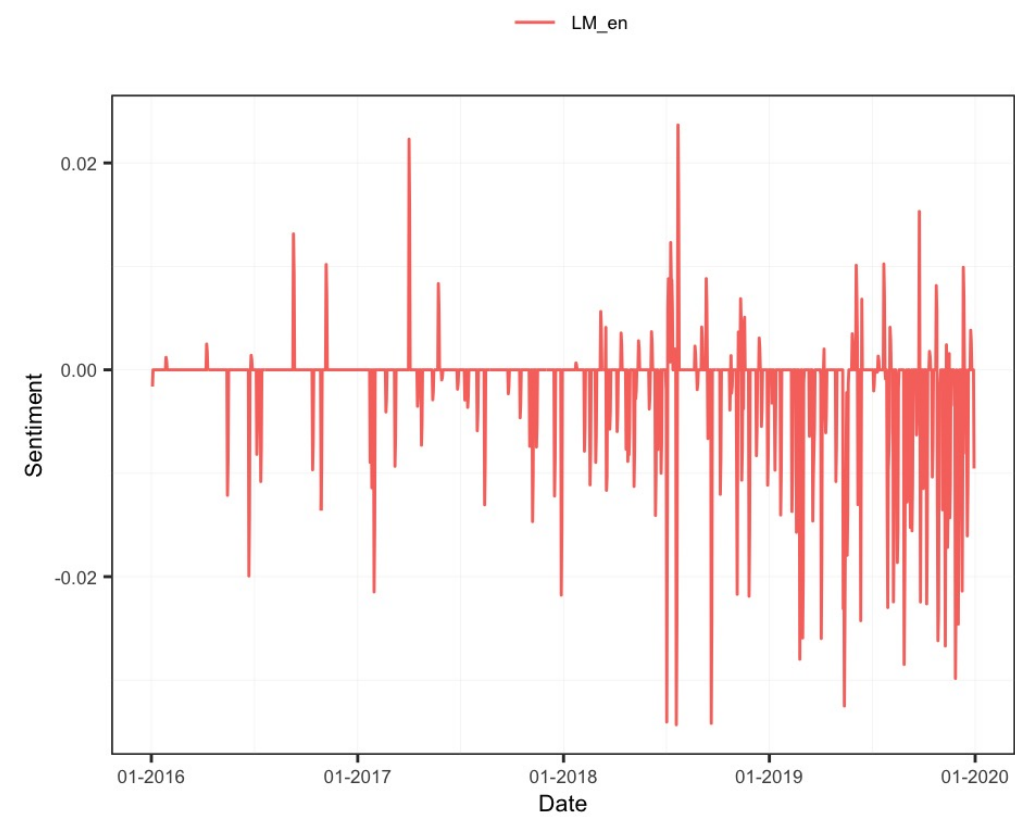| Visualization Method: Sentiment Analysis | Project Name: Islam 2 2011-2020 | Document Count: 5,355 | Date Range: Dec 31, 2010 - Dec 30, 2020 | Export Data |

Analyze Emotions Over Time

Sentiment Analysis extracts the emotions or affective states from the documents in your project. These emotions are then plotted over time which is valuable for tracking changes and trends.
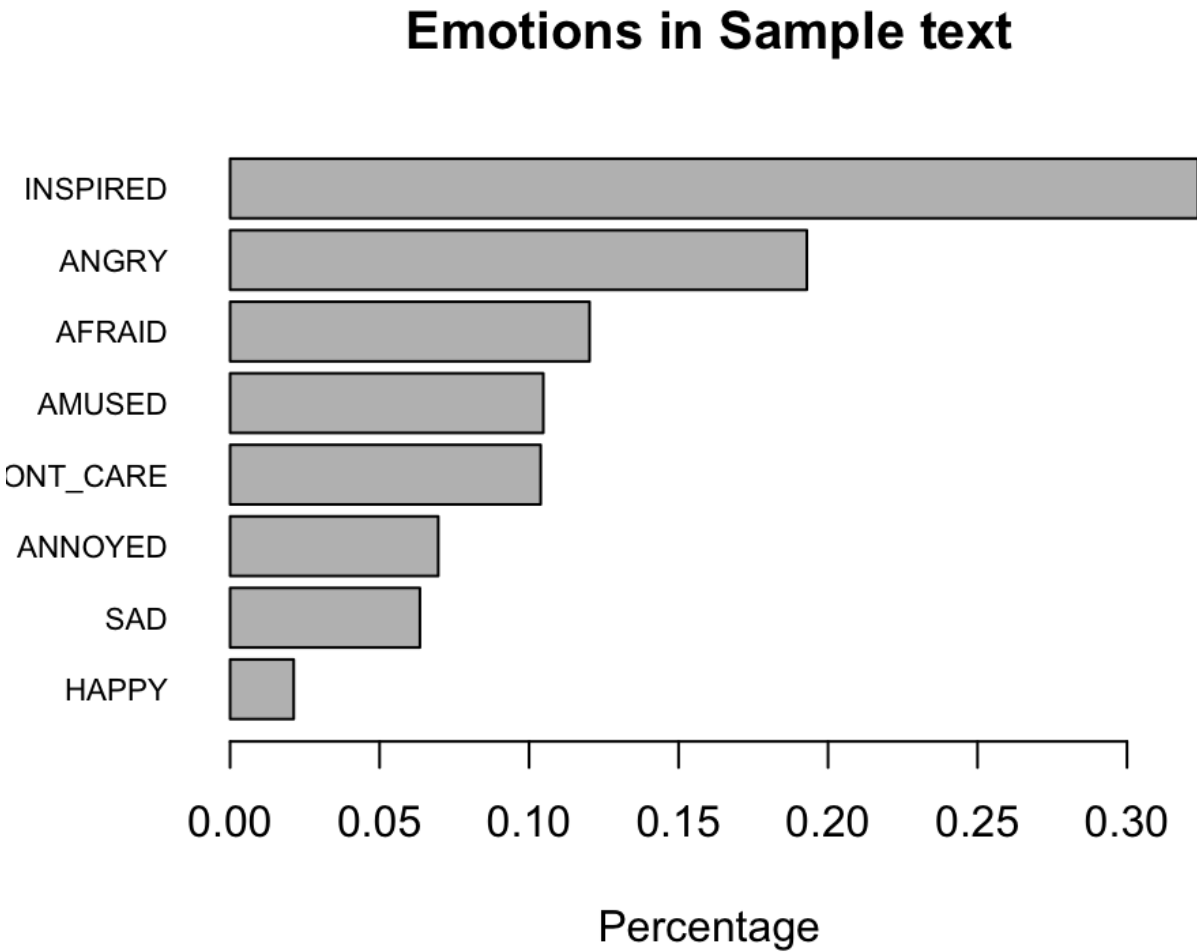
Select Emotions

| Anger | ☑ Disgust | ☑ Fear | ☑ Sadness | ☑ Happiness | ☑ Love | ☑ Surprise | ☑ Neutral | Other |

Emotion Score

Sentiment Analysis

Emotional Analysis

Emotions in Sample text

Next Week

Please bring your laptop.

Week 11: Topic model
Topics Concerning Structure

- Latent Dirichlet Allocation (LDA)
- The Correlated Topic Model
- Topics Concerning Structure