Political Polarization and Public Opinion in 2016 US Presidential Election

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Outline

Motivation

- Issues related to immigration, gender and race are considered controversial, and few politicians have made these central issues in campaign.
- The one who broke the line: Donald Trump
- Extreme opinion toward related issues and hatred between Republicans and Democratics increases through the campaign.
- From Taiwan to the United States: China issue v.s. Untraditional issues

Research Question

- Did Trump's statements toward related issues induce political polarization?
  - The issues may be the main social cleavage of the US society.
- How did public opinion on social media change in the election?
  - Politician and media coverage of related issues can shape public attitudes, especially negative ones.

Facebook Data

- 2015-05 ∼ 2017-04 facebook data.
- Data includes all US politicians and top 1000 pages that mentioned Trump and Clinton.
- Post level, comment level, user level.
- Advantage: Large, Panel data
- Disadvantage: Lack of social economic variables, containing unstructured data(text data).

Figure 1: User-level Data

user_id	INTEGER	NULLABLE	Describe this field...
post_id	STRING	NULLABLE	Describe this field...
post_created_date	STRING	NULLABLE	Describe this field...

Facebook Data

page_id	STRING	NULLABLE	Describe this field...
page_name	STRING	NULLABLE	Describe this field...
page_category	STRING	NULLABLE	Describe this field...
post_id	STRING	NULLABLE	Describe this field...
post_type	STRING	NULLABLE	Describe this field...
post_name	STRING	NULLABLE	Describe this field...
post_message	STRING	NULLABLE	Describe this field...
post_caption	STRING	NULLABLE	Describe this field...
post_picture	STRING	NULLABLE	Describe this field...
post_link	STRING	NULLABLE	Describe this field...
post_description	STRING	NULLABLE	Describe this field...
post_reactions	INTEGER	NULLABLE	Describe this field...
post_likes	INTEGER	NULLABLE	Describe this field...
post_comments	INTEGER	NULLABLE	Describe this field...
post_shares	INTEGER	NULLABLE	Describe this field...
post_created_timestamp_UTC	STRING	NULLABLE	Describe this field...
post_updated_timestamp_UTC	STRING	NULLABLE	Describe this field...

reactions	INTEGER	NULLABLE	互動數(包含wow, haha...)
parent	STRING	NULLABLE	此留言回覆的留言ID
fromname	STRING	NULLABLE	留言者姓名或名稱
like_count	INTEGER	NULLABLE	按讚數
created_time	STRING	NULLABLE	留言時間
fromid	STRING	NULLABLE	留言者ID
message	STRING	NULLABLE	留言內容
postid	STRING	NULLABLE	文章ID
id	STRING	NULLABLE	此留言ID

Figure 2: Post Data   Figure 3: Comment Data

Hate Crime Data

- 2015 $\sim$ 2017 Hate Crime data from FBI.(Requesting for data from 2006 to 2014)
- Incident reporting data, including:
  - Agency information: state, city, population group, current population, country division, country region, etc.
  - Incident information: date, location, motivation, victim type, offenders' race, offense type, etc.

Some Research Ideas

- Comparing public opinion before and after Trump's statement toward related issues $\Rightarrow$ Event Study
- Finding who manipulated public opinion on social media $\Rightarrow$ Fake news, pages standing in extreme position
- How long did the hate speech/polarization last?
- Who is attracted by Trump?
- Associating with real world: Does hate crime increases during the election?

Event Study

- Immigration
  - 2015/06/16 Launches campaign, referring to Mexicans as rapists and criminals.
  - 2015/12/07 Calls for a Muslim ban.
  - 2016/08/31 Immigration speech
- Race (Focus on black and white)
  - 2015/11/23 Tweets false statistics about African-American.
  - 2016/02/25 David Duke supports Trump.
  - 2016/06/11 Misleading claim on black unemployment.
- Gender
  - 2015/08/06 Get tough with Megyn Kelly
  - 2016/03/30 Claim that women should be punished for abortions
  - 2016/10/07 A 2005 Access Hollywood tape of Donald Trump speaking with Billy Bush about women on a bus was leaked.

Data Exploration

- Select related posts a month before and after the events.
- Comment analysis
  - Extract the sentiment of comments along with noun counts, comparing comment's attitude toward related issues before and after the event.
  - Word count.
- User analysis:
  - Compare the mean ideology difference between Trump and Clinton's supporters before and after the event.
  - Compare the users reacting with the related posts before and afterward.
- Other analysis:
  - Which pages kept manipulating public opinion toward these issues?

Data Exploration

- Track the mean ideology difference after the election.
- Explore Trump's new supporters.
- Fake news issues: Compare with mainstream medias.

Post Selection

- Using keyword combination to extract related posts.
- Variables included: post name, post message, post description, post picture, post link.
- Still trying/looking for other methods for improvement (word2vec,....)

Immigration Event 1, 3

- Event1: 2015/06/16 Launches campaign, referring to Mexicans as rapists and criminals.
- Event3: 2016/08/31 Immigration speech
- Posts containing "immigration" or "immigrants".
- Posts containing "mexico" or "mexicans", also containing:
  - Trump
  - rapist or criminal

```
                post_content = post_data["post_name"][i] + post_data["post_message"][i] + post_data["post_description"][i] + post_data
["post_picture"][i] + post_data["post_link"][i]
                post = post_content.lower()
                if post.find("immigration") != -1 or post.find("immigrant") != -1 or post.find("immigrants") != -1:
                        immigration_index.extend([i])
                elif post.find("mexico") != -1 or post.find("mexicans") != -1 or post.find("mexican") != -1:
                        if post.find("trump") != -1:
                                immigration_index.extend([i])
                        elif post.find("rapist") != -1 or post.find("rapists") != -1 or post.find("criminal") != -1 or post.find
("criminals") != -1:
                                immigration_index.extend([i])
```

Immigration Event 2

- Event: 2015/12/07 Calls for a Muslim ban.
- Posts containing "immigration" or "immigrants".
- Posts containing "muslim", also containing:
    - Trump
    - ban

Gender Event 2

- Event: 2016/03/30 Claim that women should be punished for abortions
- Posts containing "abortion"
- Posts containing "pro-life" or "pro-choice", also containing:
    - Trump

Analysis of Trump and Clinton's Fans

- Select Trump and Clinton's new fans every week.
- Select Trump and Clinton's fans every week.
- Calculate the proportion of extreme fans:
  - The absolute value of ideology score > 1
  - Users out of 2 standars deviation

Users' Ideology Trend
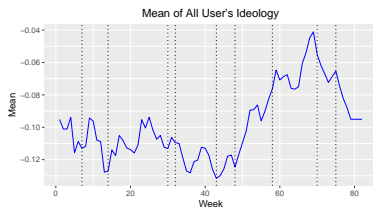
Figure 4: Mean
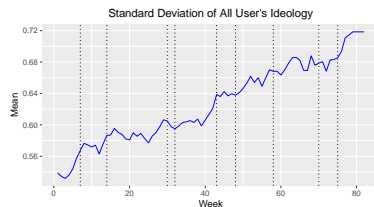
Figure 5: Standard Deviation

Trump and Clinton's Extreme Fans (|ideology| > 1)
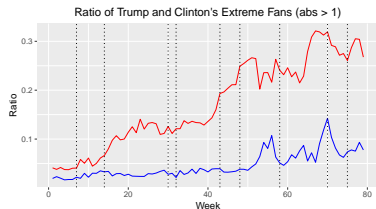
Figure 6: Fans
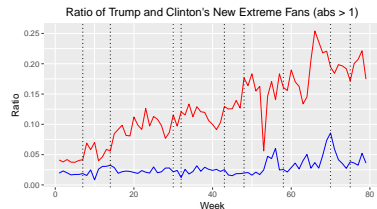
Figure 7: New Fans
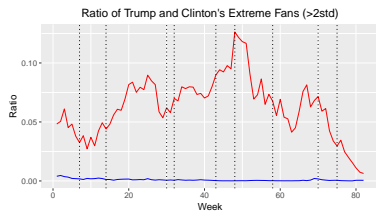
Trump and Clinton's Extreme Fans (Out of 2 std)
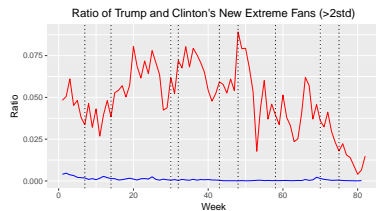

Figure 8: Fans

Figure 9: New Fans

Hate Crime

- Combine hate crime data and user ideology data.
  - Total of extreme right-wing users
  - Total of extreme users
  - Standard deviation
  - Mean difference
- Still working on data exploration
  - Other social-economic variable: population, city size
  - Different type of motivation and offenders.
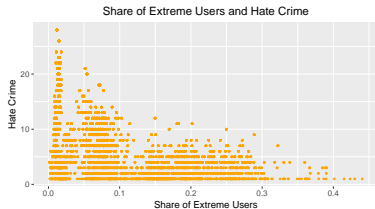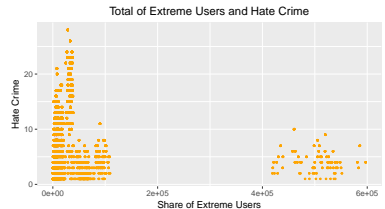
Hate Crime

Figure 10: Ideology Score > 1

Figure 11: Top 10%