Political Polarization and Public Opinion on Social Media in 2016 US Presidential Election

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Outline

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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.

Data

- 2015-05 $\sim$ 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...

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...

Figure 2: Post Data

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 3: Comment Data

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.

Summary Statistics

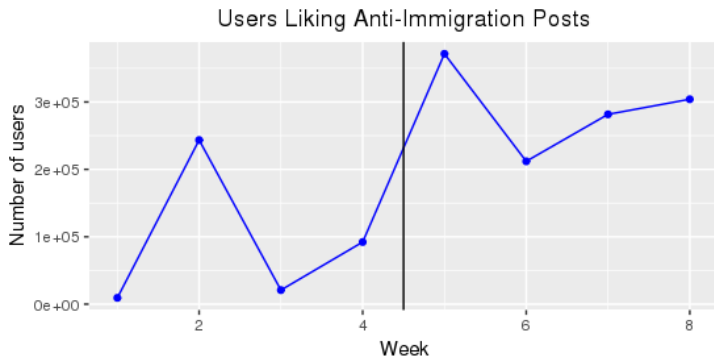Figure 4: Ideology Distribution over Time
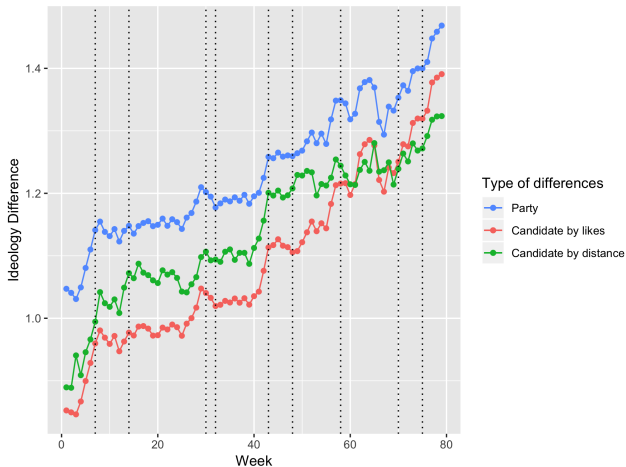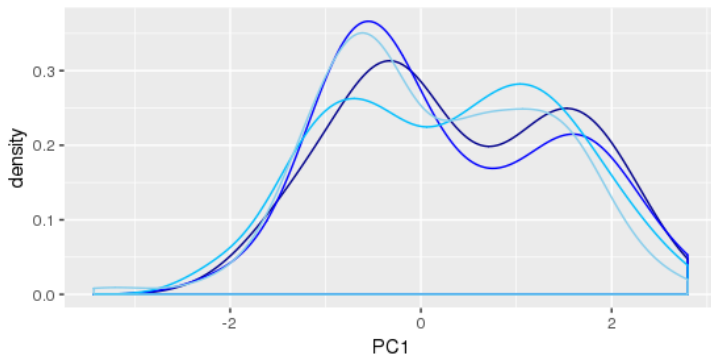
Summary Statistics
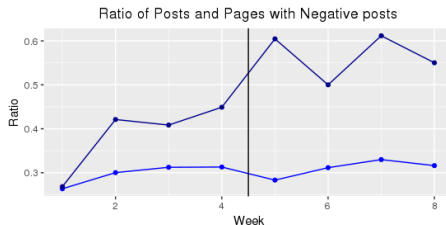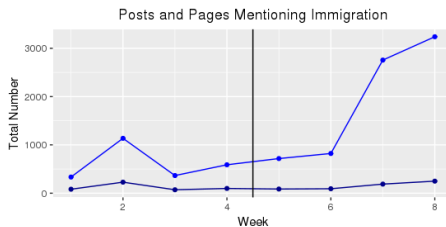
Summary Statistics

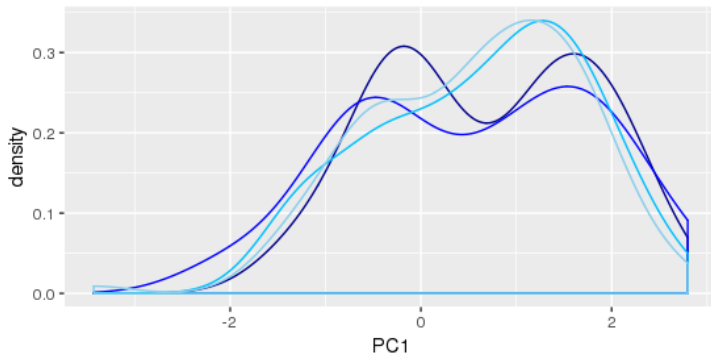Figure 5: Users Liking Anti-Immigration Posts

Summary Statistics

Figure 6: Ideology Distribution of Pages Mentioning Immigration

Summary Statistics

Figure 7: Ideology Distribution of Pages with Anti-Immigration Posts

Future Study

- Other possible exploration?
- Identification Strategy?
  - Difference in Difference?
- Concern: Data filtered out.