Understanding Trump's 2016 Victory Through TV Ad Data

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Overview

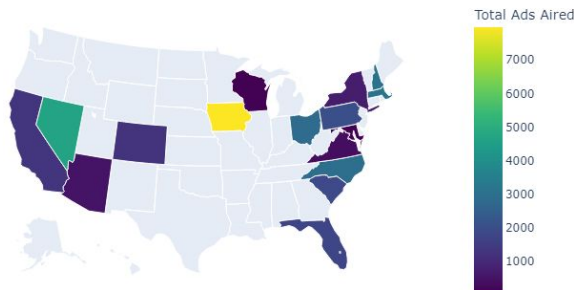| Dataset	Group Question	Assumptions
"Airings on TV" "Provides details about airings of ads on TV, giving information about when and where they aired. For the general election, we [collected] major broadcast channels in ten markets in ten battleground states[...]: Arizona, Colorado, Iowa, Nevada, New Hampshire, North Carolina, Florida, Ohio, Pennsylvania and Wisconsin. All of the TV collected becomes part of the TV News Archive at the Internet Archive, and it also becomes source material to find specific airings of political ads." -politicaladarchive.org	What political TV ad strategies were most effective in helping Donald Trump secure his victory in the 2016 presidential election?	- There are no errors in the dataset - There are no missing records from the broadcast markets where the TV ad data was collected; the dataset is representative of all presidential ads aired for those markets during the selected time period - Sample size is sufficient to draw meaningful insights about the nature and outcome of the election

Group-Level Data Cleaning & Segmentation

- Converted date column values (strings) to datetime format

  - pd.to_datetime(pres_airing.end_time.str[:20], format='%Y-%m-%d %H:%M:%S')

- Updated all state values to same format (2-letter abbreviation):

  - Ex. pres_airing.location = pres_airing.location.str.replace("Iowa", "IA")

- Filtered dataframe to the following:

  - Set time period to start on the first full day after the end of primary election, end the day before election day

    - pres_only_df = pres_airing.loc[(pres_airing['start_time_formatted'] >= datetime(2016, 7, 27)) & (pres_airing['start_time_formatted'] <= datetime(2016, 11, 7))]

  - Select only the general election using 'race' column value

    - 'race' == 'PRES'
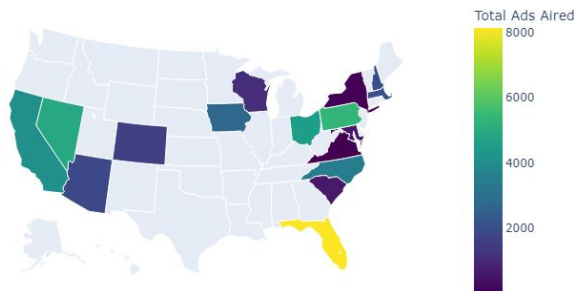
Sum of Ads Aired by Campaign, Message Type and State
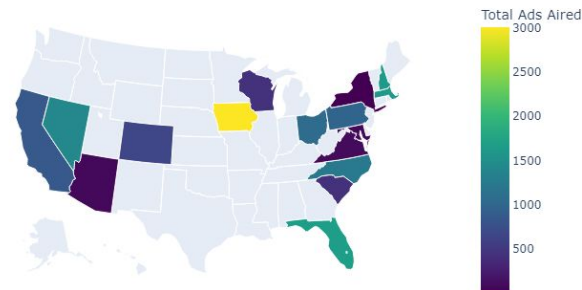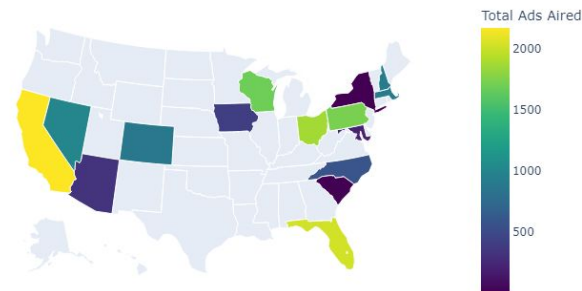
- Self-promoting pro type ads were highest in Iowa for both campaigns

- Clinton campaign prioritized opponent con type ads in Florida, while Trump campaign prioritized opponent con type ads in California

- Trump campaign targeted greater proportion of ad spend as follows:

  - Self-promoting pro type ads in Florida, Massachusetts, New Hampshire

  - Opponent con type ads in Wisconsin, Ohio, and Pennsylvania

Percentage Difference in Ad Volume by Campaign, Message Type and State

	state	pro_trump	pro_hillary	pro_trump_to_hillary_delta	con_trump	con_hillary	con_trump_to_hillary_delta	winning_cand	result_type
0	AZ	71	484	-0.853306	1803	331	4.447130	Trump	Win
1	CA	843	1282	-0.342434	4113	2166	0.898892	Hillary	Win
2	CO	652	1247	-0.477145	1573	875	0.797714	Hillary	Win
3	DC	62	56	0.107143	518	204	1.539216	Hillary	Win
4	FL	1679	1734	-0.031719	8139	2023	3.023233	Trump	Flip
5	IA	3005	7974	-0.623150	2728	408	5.686275	Trump	Flip
6	MA	1628	3102	-0.475177	1961	907	1.162073	Hillary	Win
7	MD	62	56	0.107143	518	204	1.539216	Hillary	Win
8	NC	1240	2949	-0.579518	3484	577	5.038128	Trump	Win
9	NH	1628	3102	-0.475177	1961	907	1.162073	Hillary	Win
10	NV	1414	4657	-0.696371	4888	1010	3.839604	Hillary	Win
11	NY	5	687	-0.992722	46	1	45.000000	Hillary	Win
12	OH	1050	2824	-0.628187	4532	1866	1.428725	Trump	Flip
13	PA	969	2014	-0.518868	5395	1722	2.132985	Trump	Flip
14	SC	436	1842	-0.763301	591	5	117.200000	Trump	Win
15	WI	443	83	4.337349	1061	1686	-0.370700	Trump	Flip

- Sum of Hillary campaign TV ads were an outlier in the state of New York, a historically blue state

- Hillary campaign focused heavily on airing ads in South Carolina, did not successfully flip

- Trump campaign focused heavily on Wisconsin, successfully flipped

- Sample shows 47,325 more Hillary campaign TV ads aired than Trump campaign TV ads (↑61%)

    ○ Hillary campaign aired more of each ad type in every state from the sample except Wisconsin

- Only flips in the dataset were made by the Trump campaign: FL, IA, OH, PA, WI
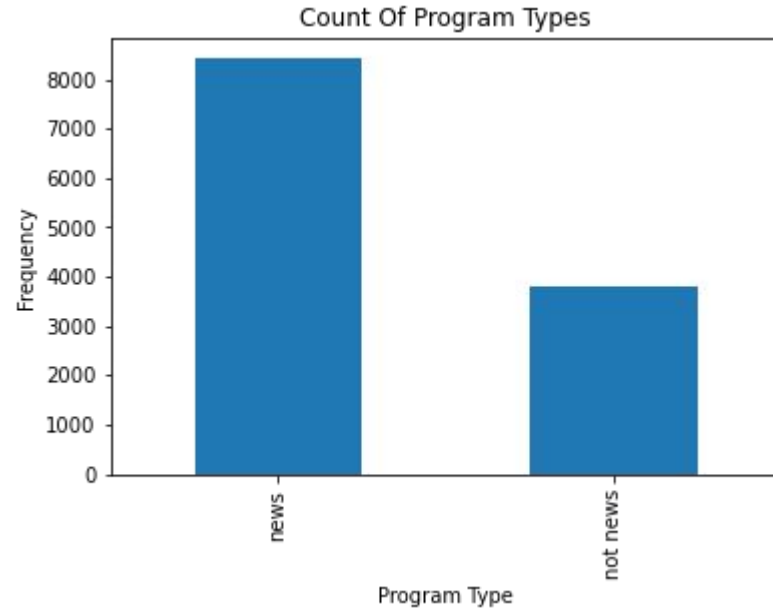
Filtering

```
1  pres_airing = pres_airing[pres_airing.sponsors.str.contains('Trump')]
2  pres_airing.sponsors.value_counts()
```
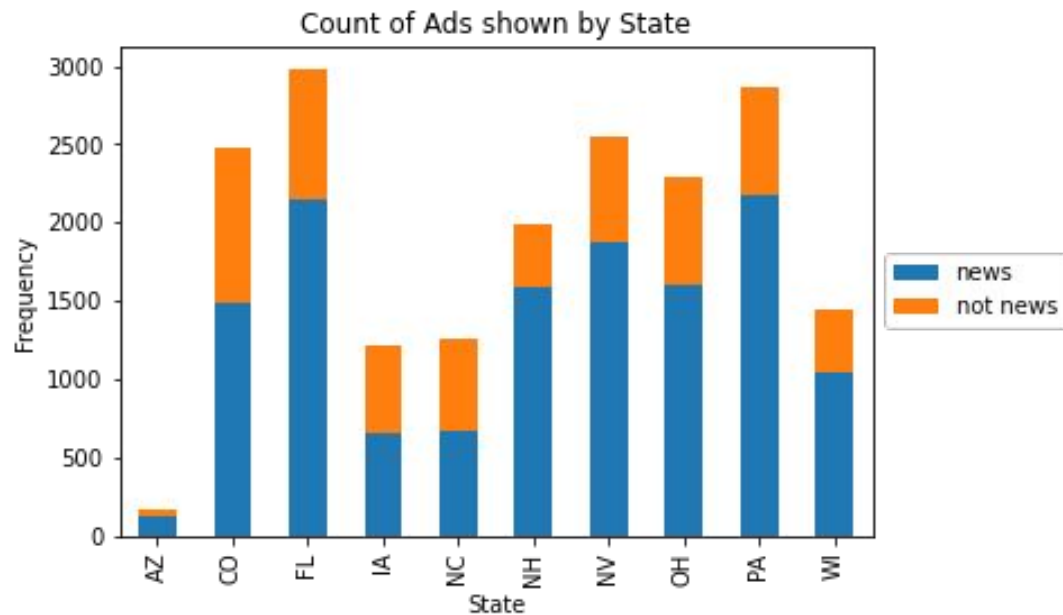✓ 0.4s

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Donald J Trump For President      21100
Donald J. Trump For President       520
```

Strategies On When and Where to air Ads

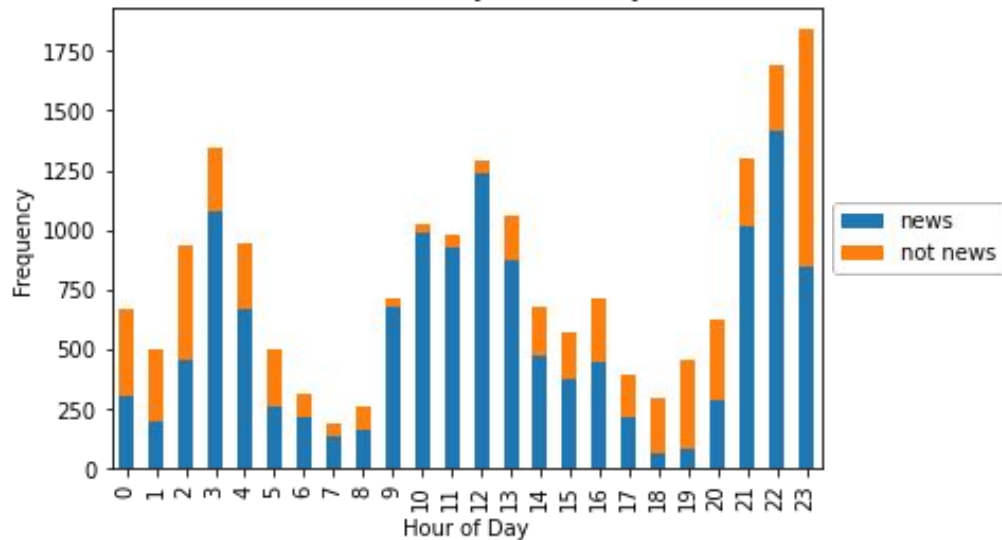| program_type |
|---|
| news |
| news |
| news |
| not news |
| news |

Count Of Program Types

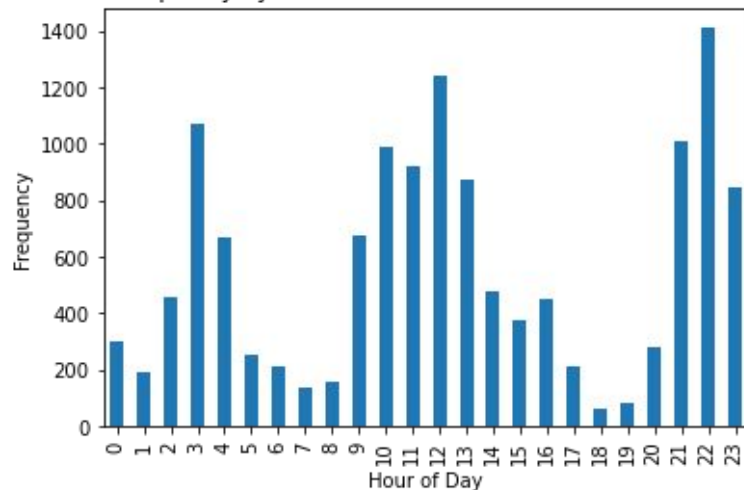# Ads counts in the swing states
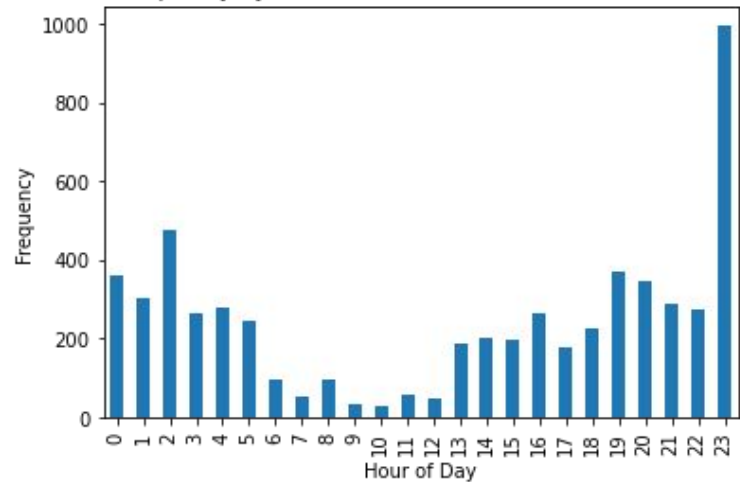
Ads by the hour

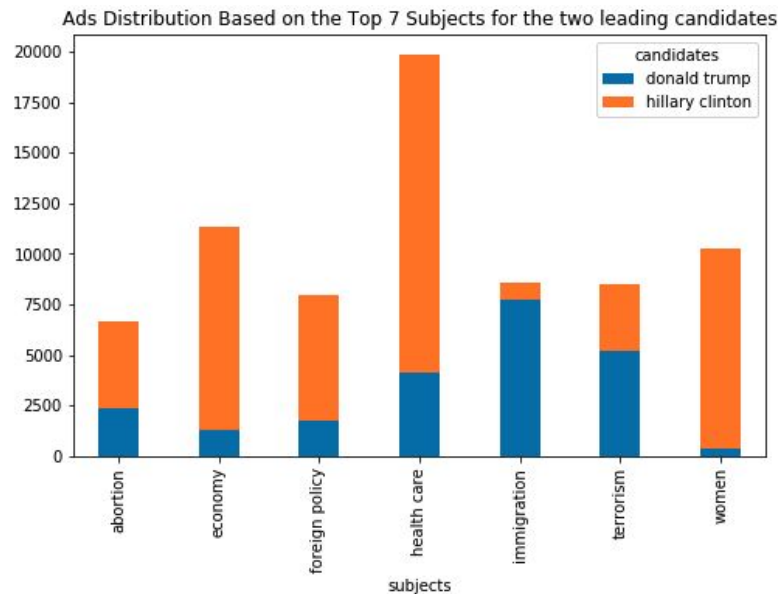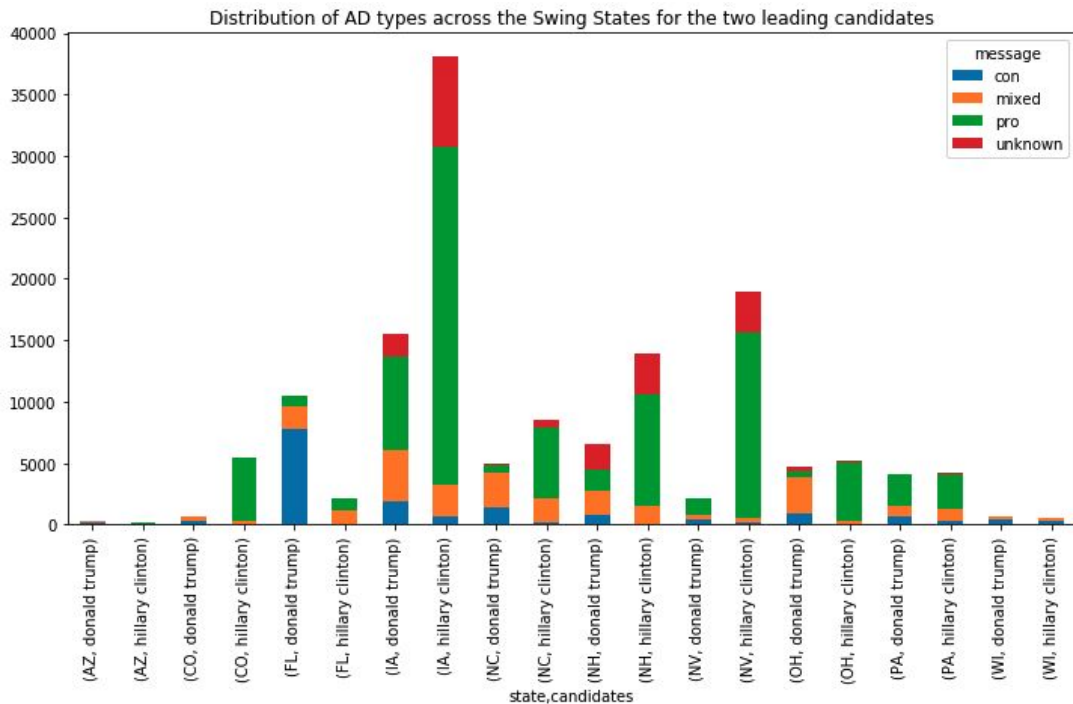Count of Ads by Hour of day

Frequency by the hour of when it is show in the news


Frequency by the hour of when it is show not in news

Distribution of Ads across the Swing States – Based on number of ads and campaigns' subjects focus

Distribution of AD types across the Swing States for the two leading candidates

Ads Distribution Based on the Top 7 Subjects for the two leading candidates

- Both candidates have more focus on the pro Ads. Trump had more of con Ads most especially, in Fl
- Based on the data – The top subjects for both campaigns are healthcare, women, immigration, economy, abortion, terrorism, and foreign policy
- Donald Trump campaign focused more on immigration, terrorism, and healthcare (cancel obamacare)
- Hillary Clinton was more into other subjects but less on immigration and terrorisim

Distribution of Ads across the Swing States – Based on number of ads and campaigns' subjects focus

Ads Distribution Based on the Top 7 Subjects per Swing State
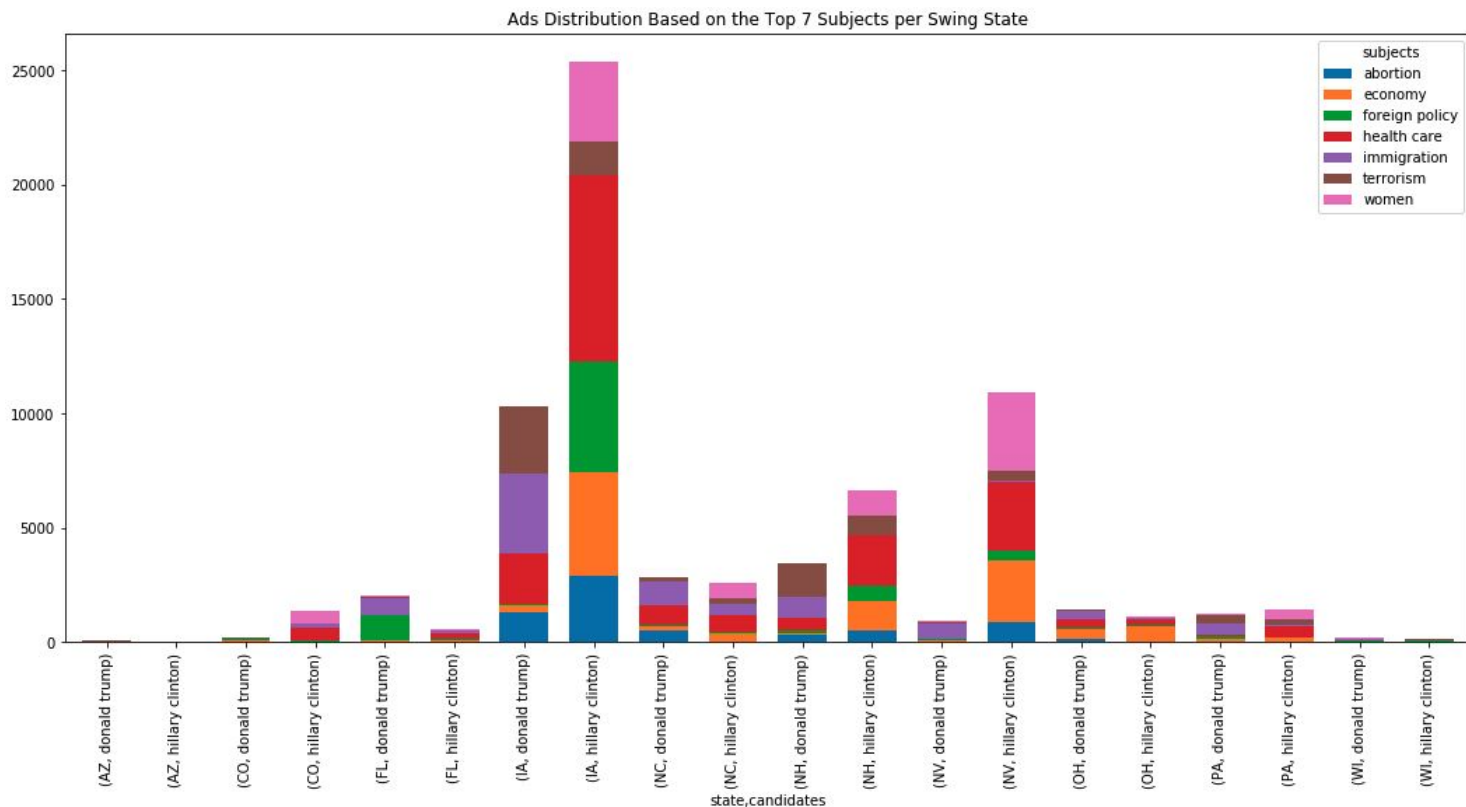
Trump won IA, WI, FL, OH, AZ, NC, PA

- Based on the data – The top subjects for both campaigns are healthcare, women, immigration, and economy
- Donald Trump campaign focused more on immigration and healthcare (repeal Obamacare)
- Hillary Clinton focused more on the healthcare (expanding obamacare) and women

Questions?