

News Trends in the Trump Era

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November 16, 2018



Data

- New York Times has an API!
- Generates json files
- Use jq to extract
 - Headline
 - Snippet
 - Date
 - News Desk (for filtering)

281,288 articles

from 2015 to 2018

Data

Filtered by News Desk

Foreign

National

NewsDesk

Politics

U.S.

U.S. / Election 2016

U.S. / Politics

Washington

World Americas

World / Asia Pacific

World / Europe

World / Middle East

Removing articles such as Classified and Sports

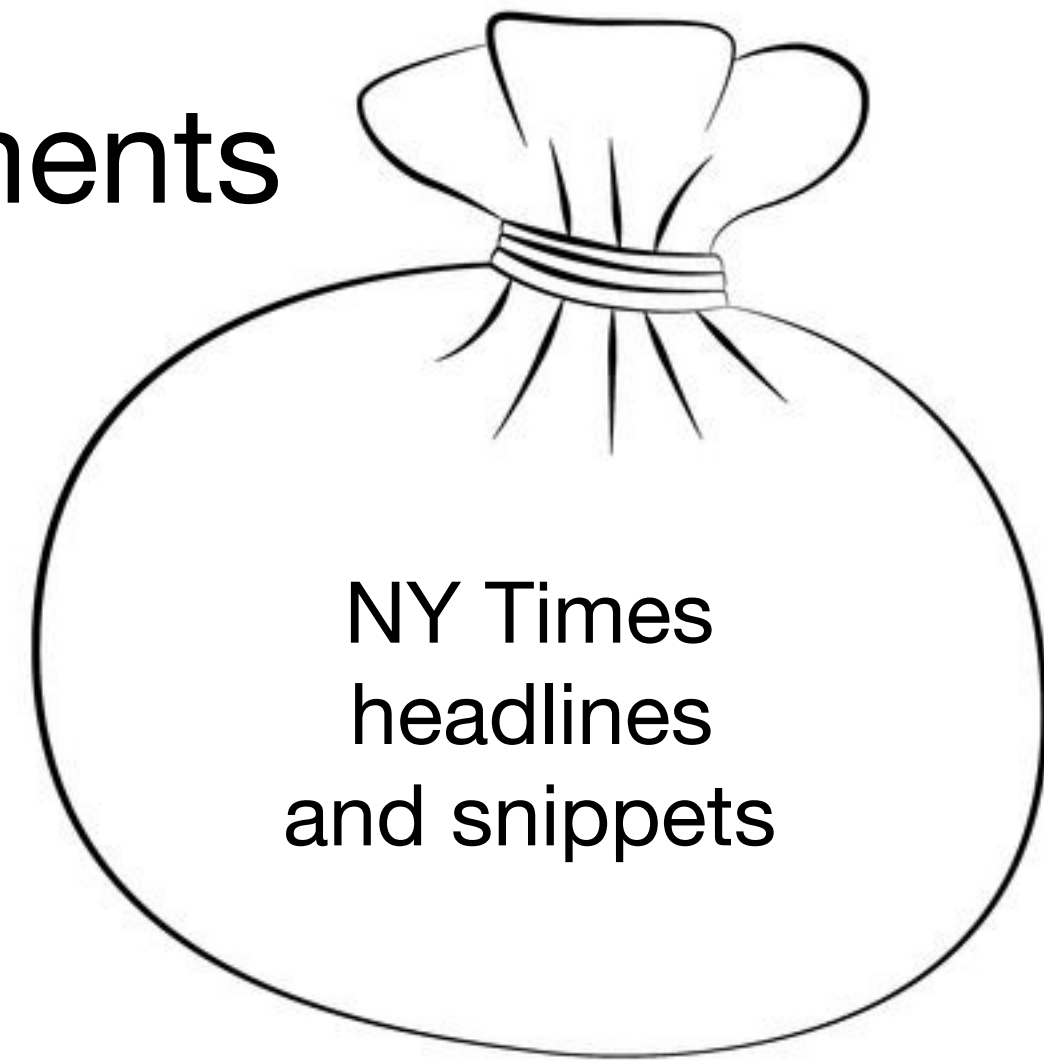
Reduces number of articles to 47,256

Methodology

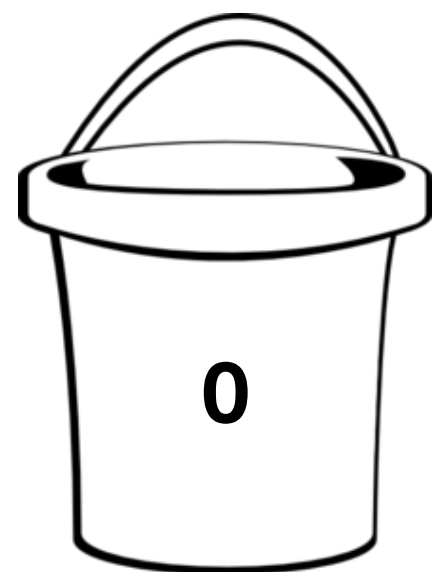
1. document = headline + snippet
2. Remove most and least frequent words, use common combinations of words
3. Use Latent Dirichlet Allocation (LDA) to create probability distributions
4. Use K Means to cluster the LDA results into topics
5. Look at results as a time series

Pipeline - LDA

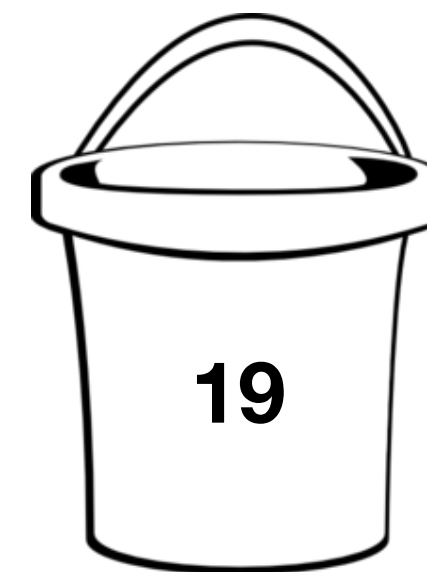
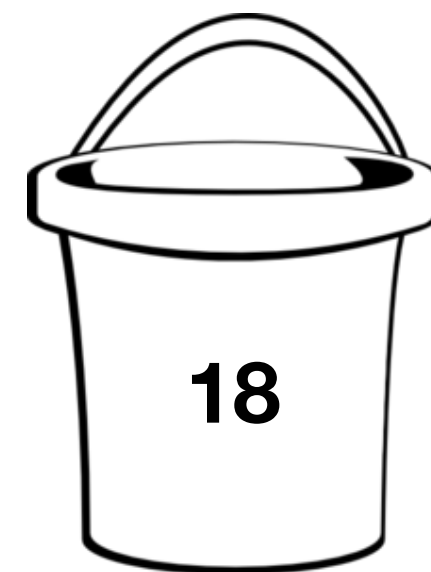
Documents



Based on word distributions, distribute documents into buckets

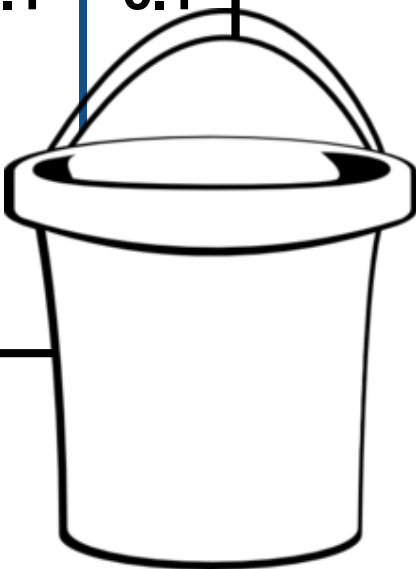


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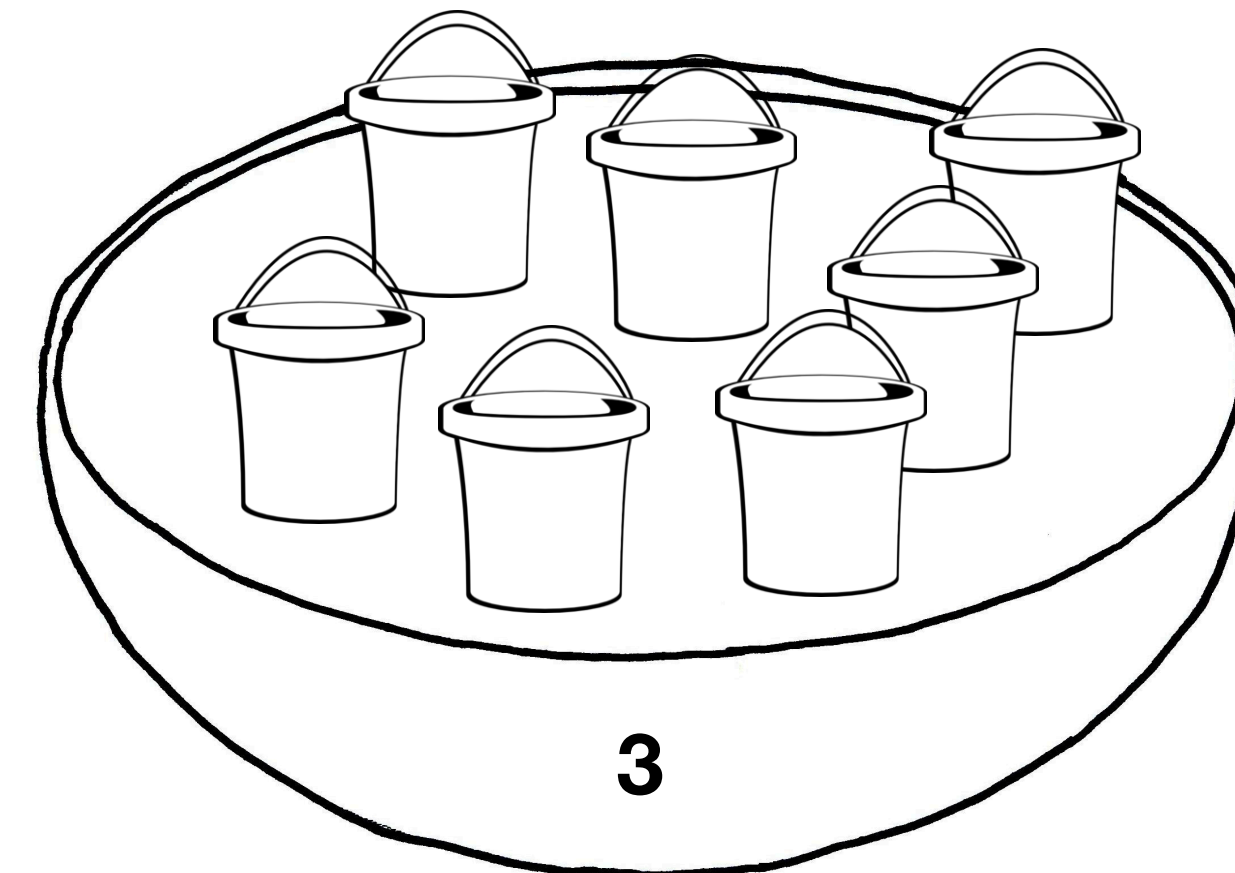
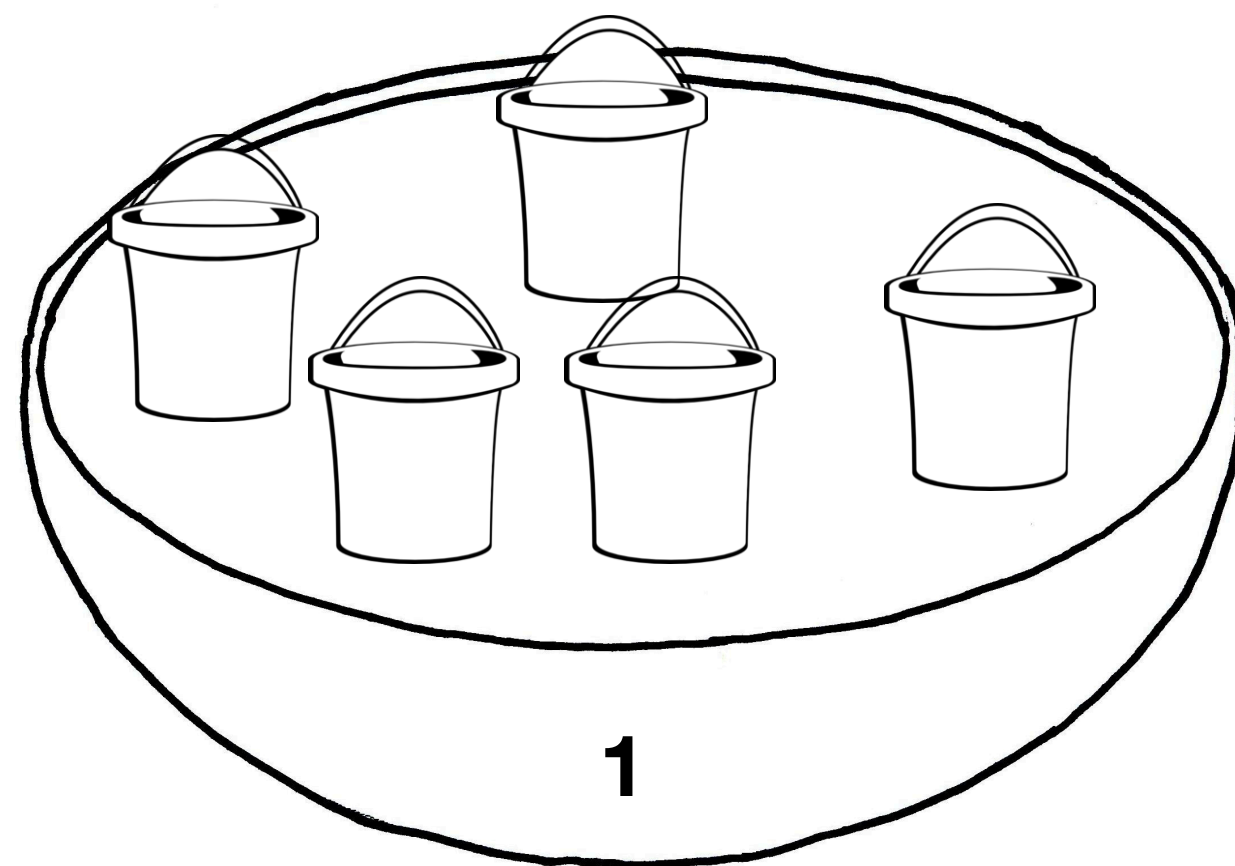
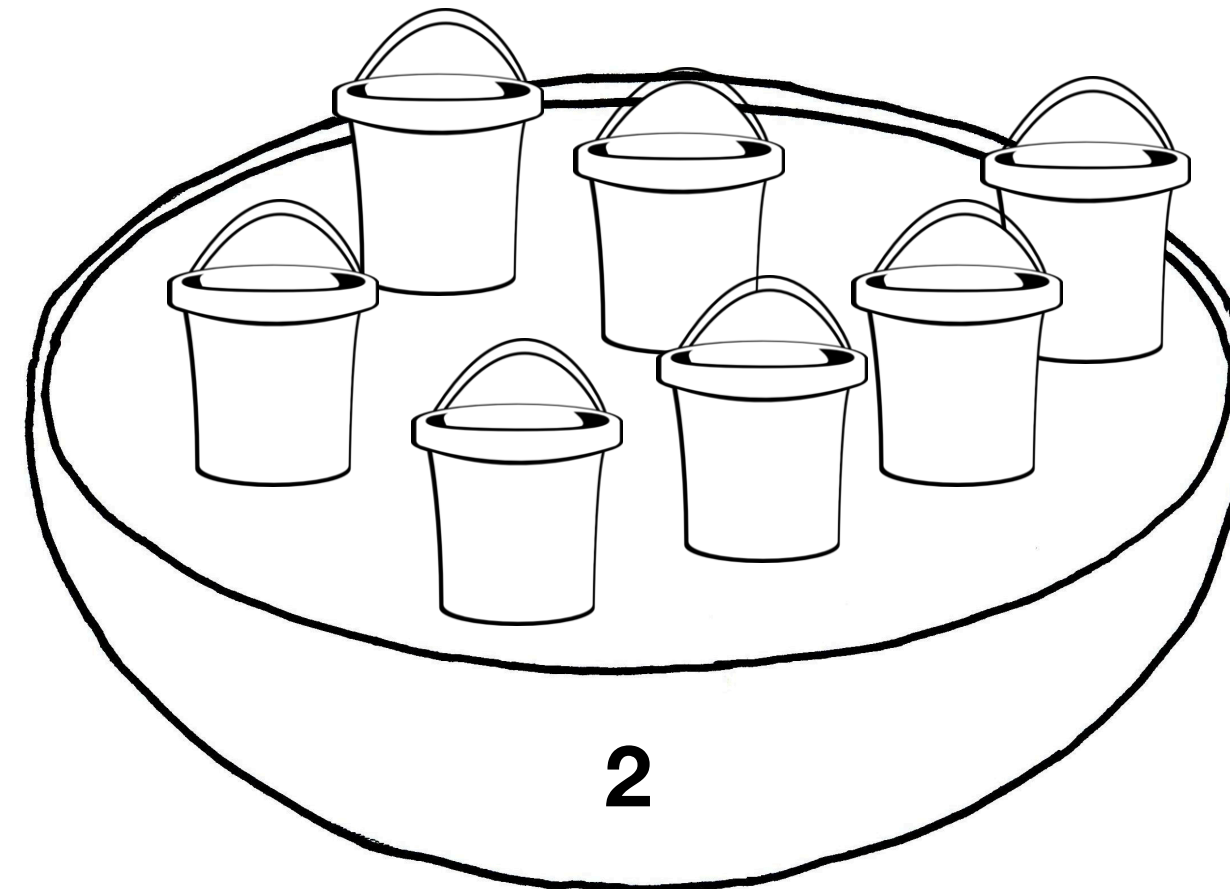
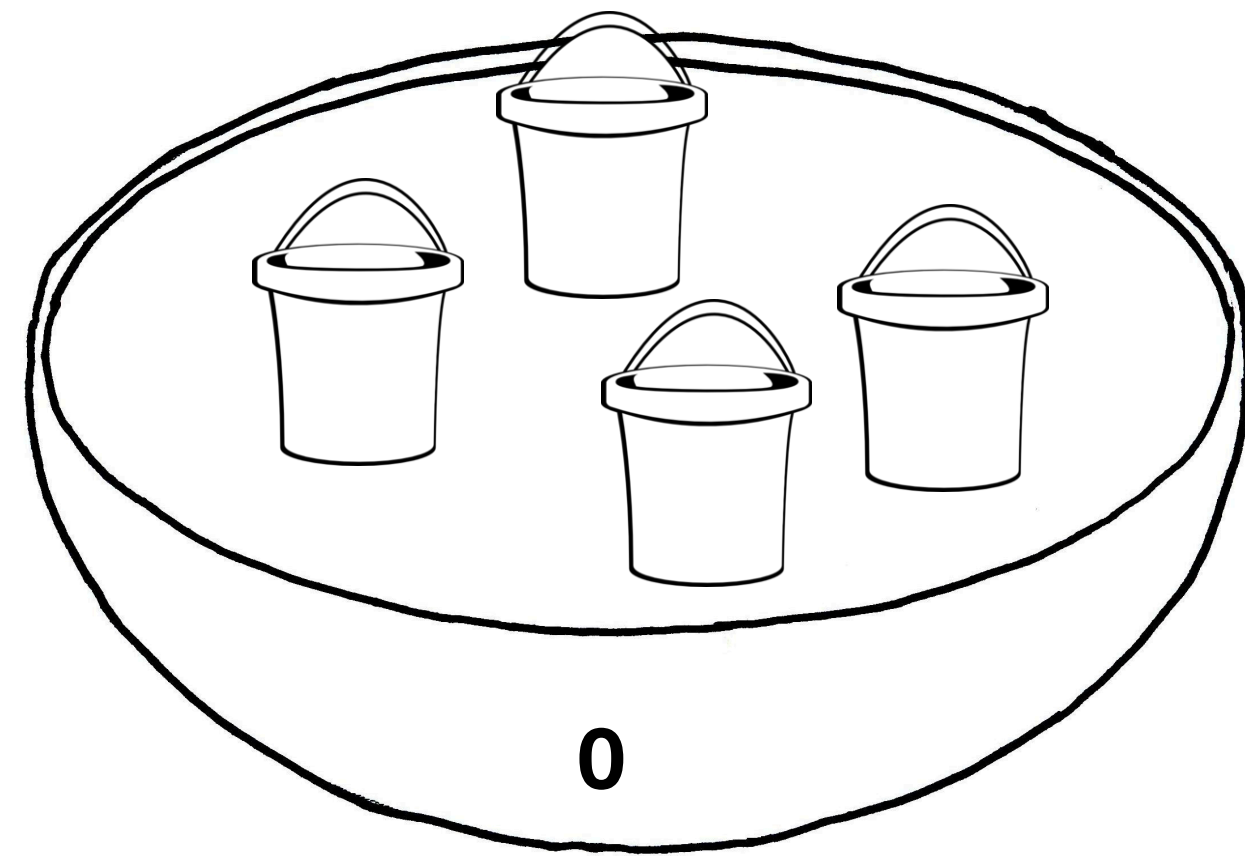
Pipeline - LDA

Document (47,256 total)	Probability of Document in Bucket (%)																			
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Document 2000: European Union Asks Member Countries to Accept Quotas of Migrants The appeal by the European Commission is a response to fears that southern countries will be overwhelmed by the influx of people crossing the Mediterranean....	21.9	0.2	0.2	0.2	0.2	11.3	0.2	6.2	0.2	0.2	0.2	54.7	0.2	3.5	0.2	0.2	0.2	0.2	0.2	0.2
Document 3500: Tillerson Says Russia Must Restore Ukraine Territory, or Sanctions Stay The secretary of state, on a visit to Kiev, appeared to set the same high bar for sanctions relief that the Obama administration did....	5.6	0.1	0.1	6.8	0.1	42.3	14.1	3.2	0.10	0.1	8.5	0.1	0.1	0.1	14.1	0.1	0.1	3.6	0.1	0.1



Pipeline - K Means

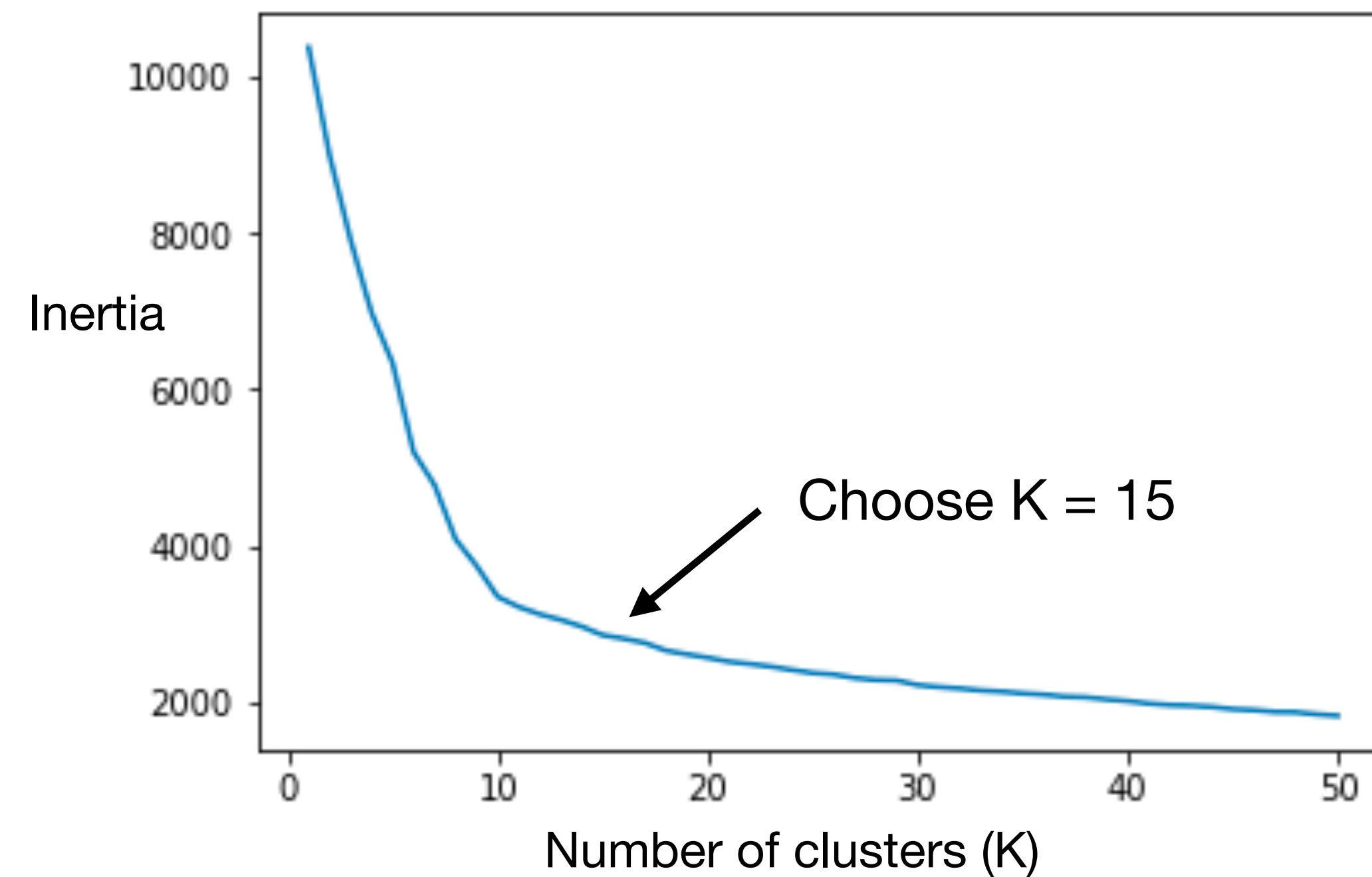
Collect clusters of documents with similar Bucket distributions



...

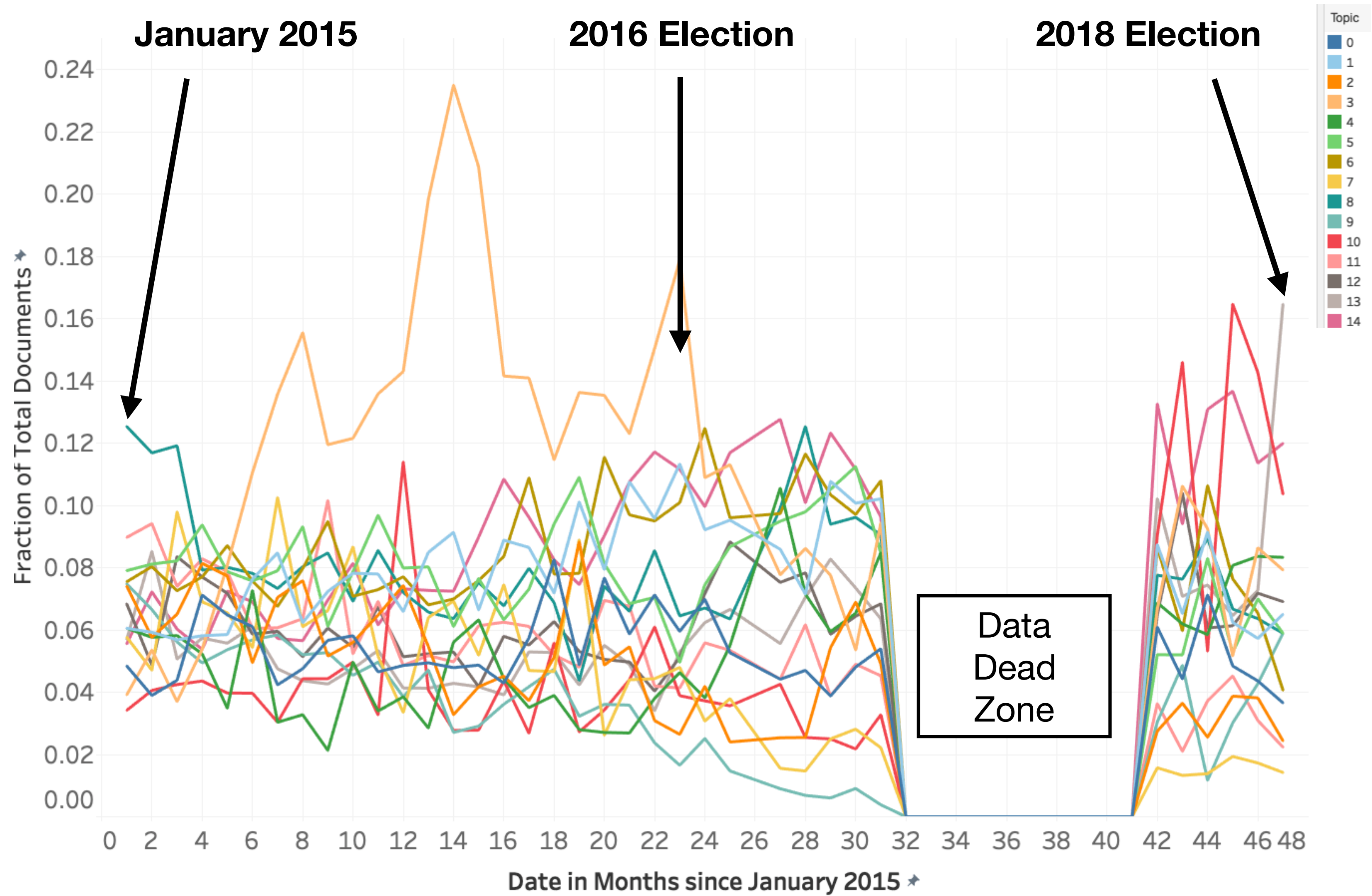
Pipeline - K Means

How many clusters? Try some to find optimal number of groups.

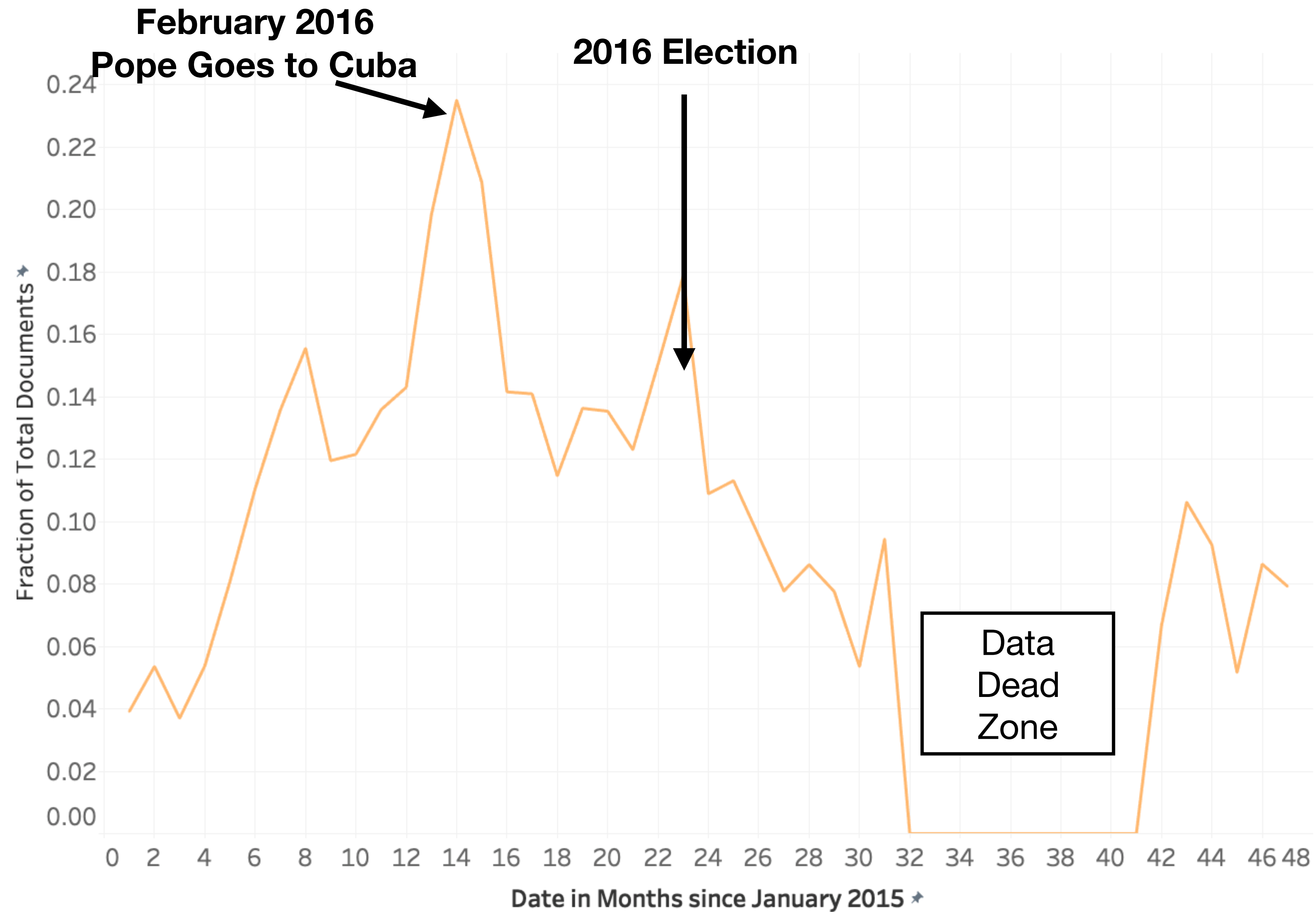


Documents near cluster centers —> topics for the cluster

Results



Results



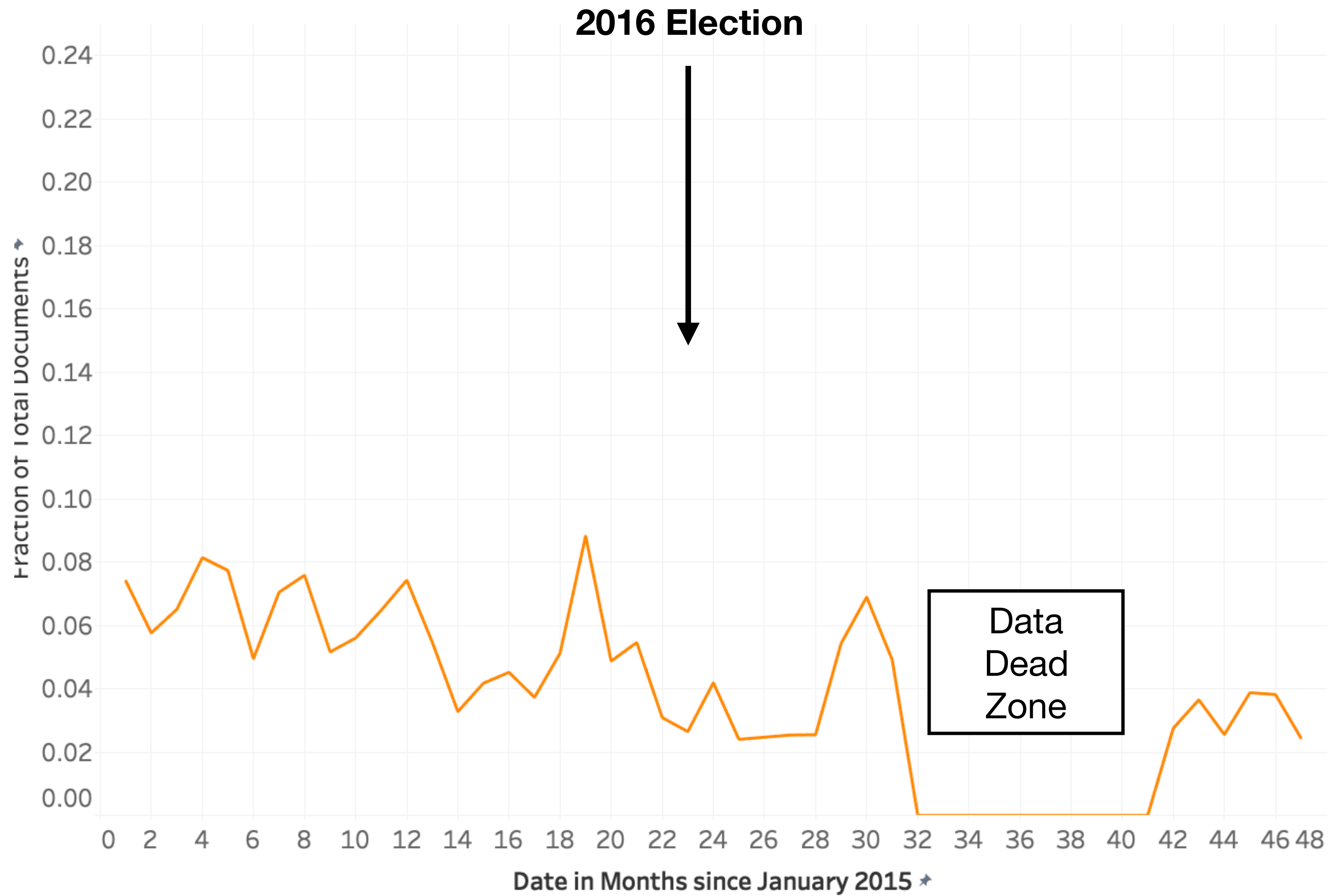
Topic Cluster 3

Trump

Pope Francis

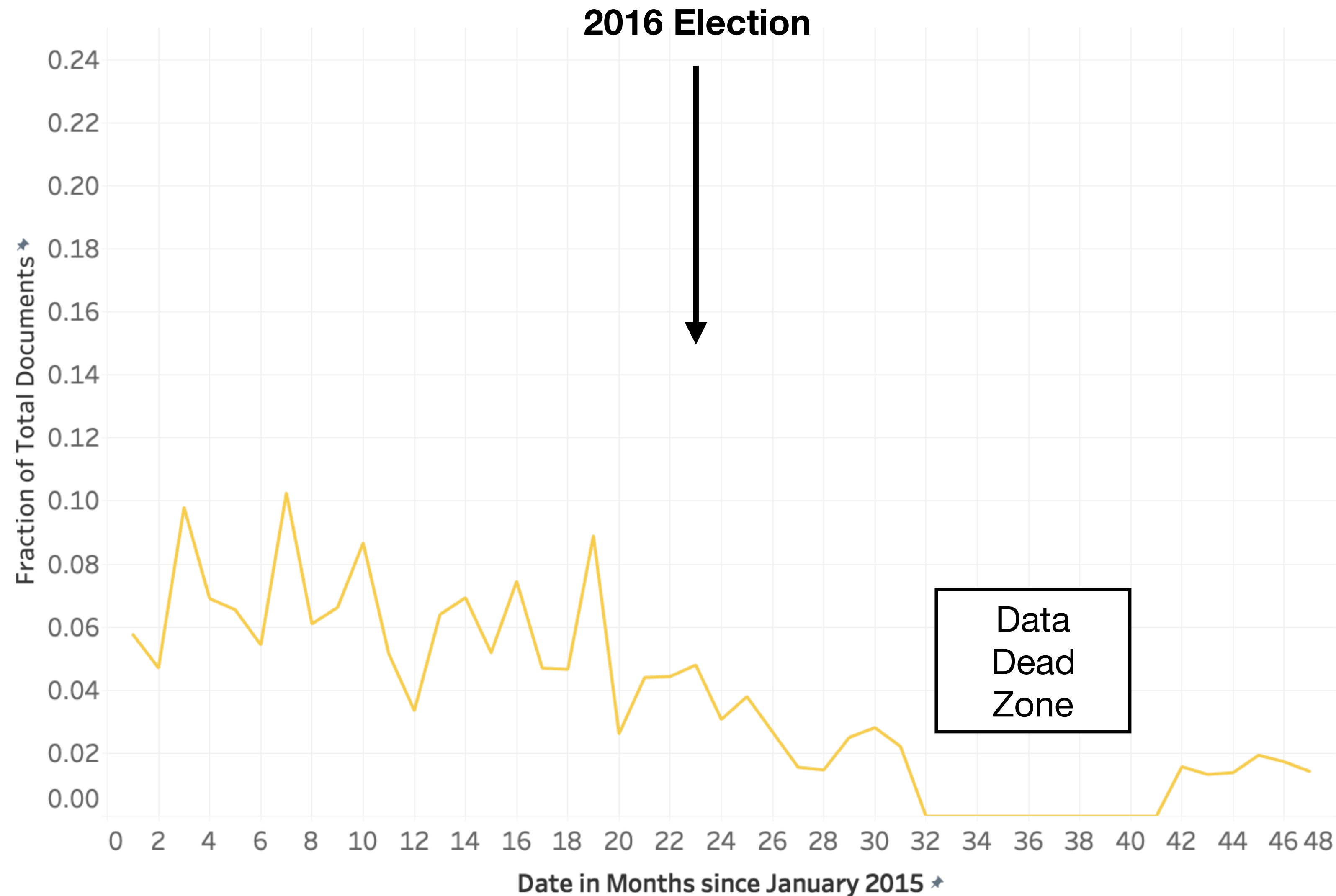
Health Care

Results



Topic Cluster 2
Clinton

Results



Topic Cluster 7
Political struggles
Anti-Trump

Decreasing over time

What I Learned

- json files are nothing to be afraid of - jq rocks!!
- LDA requires a lot of compute power to extract meaning
- Unsupervised Learning can have a mind of its own

Future Work

- Find a way to get news desk for Dead Zone articles
- Improve word filtering
- Try increasing LDA buckets
OR
use NMF with more buckets



Questions

Dana Lindquist

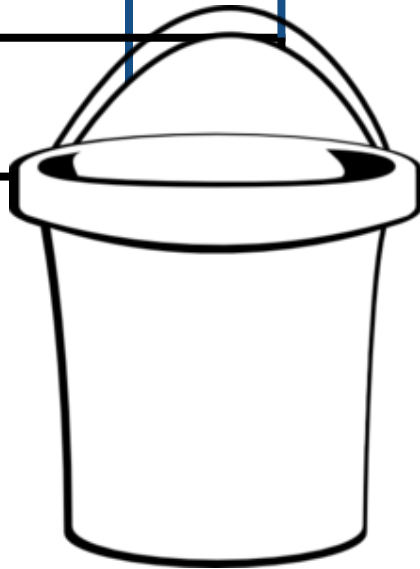
danalindquist@silverbeach.com

www.linkedin.com/in/danalindquist/

Appendix

Pipeline - LDA

Word (162,784 total)		Probability of Word in Bucket (not normalized)																			
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
...																					
Word 28,766.	clinton	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	3557	0.05	0.05
...																					
Word 49,813	european	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	639	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
...																					
Word 124,327	russia	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	1199	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
...																					
Word 145,649	tillerson	0.05	0.05	0.05	0.05	72.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
...																					



Docs for Topic 2

- 8/2016 With Billionaires Backing Her, Hillary Clinton Must Confront How to Deploy Them
Members of the ultra-wealthy such as Mark Cuban, Warren E. Buffett and Michael R. Bloomberg are finding varied roles in a campaign focused in part on income inequality....
- 8/2016 Hillary Clinton Says 'Radical Fringe' Is Taking Over G.O.P. Under Donald Trump
Mrs. Clinton said Mr. Trump was "taking hate groups mainstream" by promoting a racially charged "alt-right" philosophy unprecedented in modern major-party politics....
- 10/2016 Highlights From the Clinton Campaign Emails: How to Deal With Sanders and Biden
The latest leaked emails reveal the careful deliberations aides engaged in on even small details and showed a bitter dispute between the Clintons' daughter and a top aide....
- 1/2015 North Korea Sought Talks and Attached a Hefty Price Tag, South's Ex-Leader Says
In a new memoir, Lee Myung-bak, the South's president from 2008 to 2013, writes that Kim Jong-il pressed hard for a meeting but demanded, among other things, \$10 billion in cash....
- 1/2016 Hillary Clinton Releases Ad Supporting Obama's Gun Control Efforts
With her lead against Senator Bernie Sanders of Vermont slipping in Iowa, Hillary Clinton's campaign on Tuesday unveiled a new television ad that sought to seize on President Obama's popularity among Democratic voters on the issue of gun contr...

Docs for Topic 3

- 9/2015 Streets Closed to Cars for Pope Francis' Visit Transform Philadelphia Security measures have effectively turned the urban core of one of America's biggest cities into a peaceful, pedestrian-only village....
- 8/2016 Donald Trump Endorses Paul Ryan and John McCain in Bid for G.O.P. Unity Mr. Trump, who had caused a rift by withholding support for Mr. Ryan, also called for the re-election of Senator Kelly Ayotte as he sought to move past a tumultuous week....
- 10/2016 Health Law Tax Penalty? I'll Take It, Millions Say A lot of healthy people are defying predictions by the Affordable Care Act architects and refusing to enroll, throwing off the math behind the system....
- 7/2017 Trump Fuels Intrigue Surrounding a Former I.T. Worker's Arrest Speculation by conservative news outlets and a presidential retweet have given the capital something new to talk about this summer. But is it anything more than an overblown Washington story?...
- 3/2017 On Eve of E.U. Anniversary, Pope Warns of Bloc's Fragility Meeting with 27 of the bloc's leaders, Pope Francis offered a blessing for the Continent but cautioned about the forces of populism and extremism....

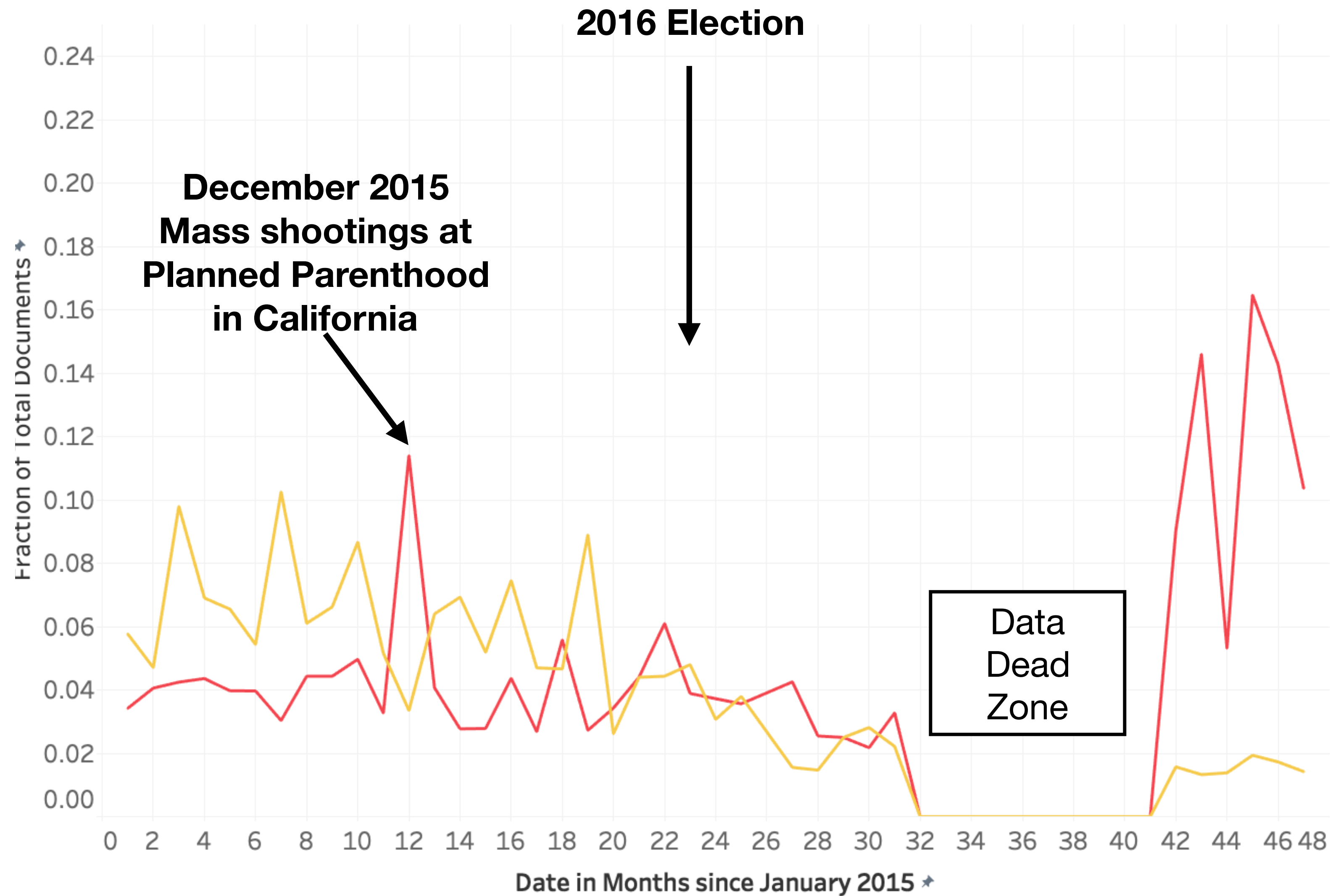
Docs for Topic 7

- 3/2016 Remote Utah Enclave Becomes New Battleground Over Reach of U.S. Control Conservation groups say a new monument here in the red-rock deserts would protect 1.9 million acres of culturally significant land from new mining and drilling....
- 11/2016 Protesters Take Anti-Trump Message to His Doorstep, and Plan Next Steps Beyond the commotion in the streets, liberal activists are preparing legislative challenges and getting ready to support social services they assume will be gutted....
- 12/2016 Denying Conflict, Trump Family Tries to Resolve Potential Problems Mr. Trump has agreed to shut his charity, weighed a plan for an outside monitor to oversee the Trump Organization and ended some international business projects....
- 5/2017 Trump Administration Delays Decision on Leaving Climate Pact The announcement encouraged advocates of the landmark accord, who hope that President Trump's fellow heads of state can pressure him to remain in the pact....
- 10/2015 Migrants Taking Arctic Path to Norway Are Stranded in Russia More than 500 refugees were blocked after taking an unlikely route toward Europe, hoping to bypass unfriendly border guards, barbed-wire fences and cluttered camps....

Docs for Topic 10

- 5/2015 George Pataki Adds a Socially Liberal Voice to the Race for the G.O.P. Nomination The former three-term governor of New York acknowledges facing long odds, but being a moderate could give him a bit of hope for the New Hampshire primary....
- 9/2016 California Today: A Leaning Tower in San Francisco Wednesday: A 58-story skyscraper's structural dilemma, high same-sex marriage rates, and September snow for skiers....
- 4/2017 3 Arrested in Fire That Caused Atlanta Highway Collapse The massive fire weakened an elevated portion of Interstate 85, a major north-south route....
- 7/2017 California Today: A Plan to Cool Down L.A. Friday: Lighter pavements to fight the heat, opposition to banning child marriage, and a sleeper bus service between Los Angeles and San Francisco....
- 2/2015 Old Tradition of Secularism Clashes With France's New Reality In the aftermath of the Charlie Hebdo killings, there are new questions about the concept of state secularism and whether it is being fairly applied in a France where an estimated five million Muslims live and worship....

Results

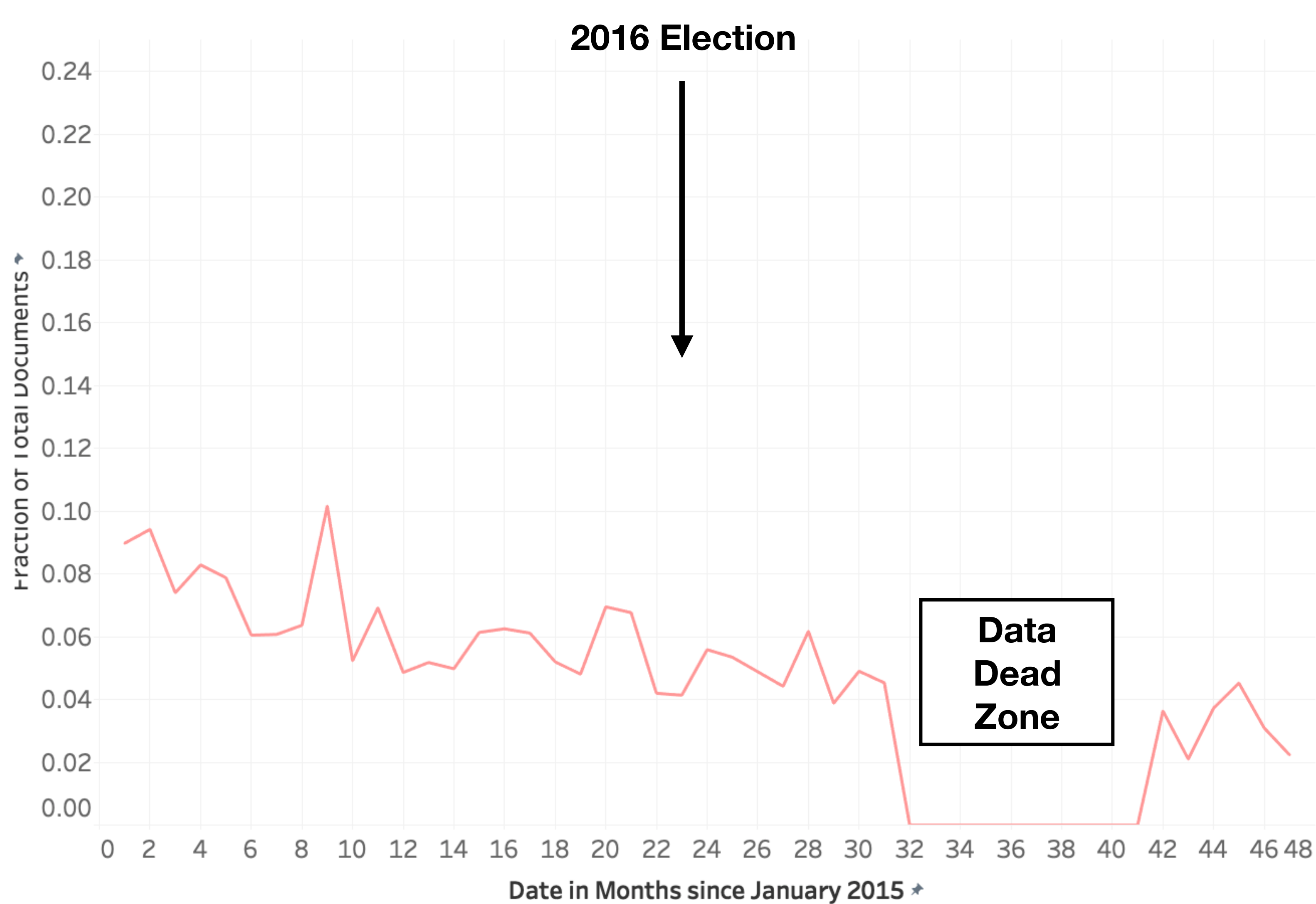


- Topic 7 - decreasing Political struggles Anti-Trump
- Topic 10 - increasing New York California

Docs for Topic 11

- 10/2016 An Online Education Breakthrough? A Master's Degree for a Mere \$7,000 A Georgia Tech computer science program at drastically reduced prices could change the way we think about the problem of college costs....
- 3/2017 Death on a Prison Bus: Extradition Companies' Safety Improvements Lag Federal officials promised last year to look into the mistreatment of detainees, some held for minor offenses, on buses operated by for-profit companies. Little has changed....
- 5/2017 Children Taken From Maryland Couple After YouTube 'Prank' Videos A couple could lose two of their children after critics condemned the videos and accused the parents of abuse....
- 7/2018 As Carr Fire Kills 2 in California, Firefighters Reflect on a Job Now 'Twice as Violent' Since 2012, according to state officials, there has not been a month without a wildfire burning — a stark contrast to previous decades.
- 1/2015 Nigeria: Shell Agrees to Pay \$83.5 Million for Oil Spills The oil giant Shell agreed early Wednesday to pay a Nigerian fishing community ending a three-year legal battle in Britain over two spills in 2008 that destroyed mangroves and seafood that had sustained Bodo villagers....

Results



Topic
11

Topic 11
Fined
Pay
Profit
Job