

Policy Precedence: Examining the Connection of Social Media and Bill Sponsorship

How does social media influence representatives? More specifically, how are constituents able to influence issues brought to the docket and how their lawmakers vote through Twitter?

With the skyrocketing importance of social media over the past decade, Twitter has gained a significant audience, with approximately 330 million users. Of these users, about half are United States citizens and a large majority are aged 18 to 34, followed in proportion by the 35 to 50 year-old age group (Parmalee and Bichard 2014). The medium has been increasingly used by political leaders as a mechanism to communicate with constituents about everyday ongoings in politics. For this reason, we argue that Twitter can be seen as a new-age way for constituents to contact their political representatives with greater ease and frequency.

Given this change in avenue of communication among domestic audiences and policy makers, we seek to answer how effective the method of communication is in motivating leaders to act in their constituents' interests. Scholars have discovered that rather than acting in the interest of constituents, politicians act in their own self-interest. To fulfill their goal of reelection, they devote substantial resources to advertising, credit claiming, and position taking (Mayhew 1974; Fiorina 1977; Fenno 1978). Social media largely contributes to those basic activities. It also creates an environment for constituents to exchange dialogue with MCs in real time.

Politicians and their offices respond to correspondences within a 24 hour time period; however, rather than replying via social medium, they respond requesting direct contact like a phone call (Mergel 2012). Social media has also given the pursuit of homestyle an edge up. Since it is real

time interaction, MCs are able to continually present themselves in a positive manner, broadcast how they are allocating resources and share their opinions about what is going on in Washington D.C. Immediate feedback contributes to the building of trust between the constituent and MC. Not only does it promote transparency, but it shows that the MC values two-way communication.

With this literature in mind, we will analyze the interactions and conversations between constituents and political leaders on Twitter to examine whether or not there is a relationship between tweet content and bill sponsorship. We generally find that representatives and the individuals that tweet at them are discussing and responding to topics that are ongoing in politics, including the bills that they are sponsoring. Representatives are using the platform to instantly update the public with their positions on developing situations and respondents are often either condoning or criticizing action taken by representatives. Our results indicate that twitter has in fact become a common and influential method of communication between representatives and constituents.

Data and Methods

To explore the connections between Twitter and representation action, we use a topic model and scrape data from Twitter. We scraped tweets from Twitter throughout March and April 2018. Overall, we collected 5,000 tweets for each United States Senator's main, verified twitter handle. These tweets include both tweets sent out by senators, but also individuals' responses to them. In only a handful of cases, we were not able to collect 5,000 because the profiles were not often used or unpopular and therefore did not have at least 5,000 tweets. Initially, we included every account associated with each senator--main, campaign, and personal.

However, to narrow our focus, we trimmed the sample to only include tweets using the twitter handle for each senator's main account. Most senators had active Twitter profiles in which they (or an individual from their office) tweeted regular updates and stances and to which many other Twitter followers would reply to indicate their stance on the Senator's position or action.

We then analyze tweets to determine what policy issues tweeters are talking about when they mention each U.S. senator. To preprocess the tweets, we use the `quanteda` package. Each tweet is treated as an individual document or a corpus. Across each document, we reduce the words to their root forms. We also remove numbers, characters, and punctuation. Once the data is preprocessed, we use the `topic models` package. Specifically, we use a Latent Dirichlet Allocation (LDA) which generates a set of words based on probabilistic topic representation to get at the underlying topics within the document (Blei 2012). This topic model uses collapsed Gibbs sampling to go through each document and randomly assign words to one of k topics and generate the probability of a word appearing in a topic and a topic appearing in a document.

We run the topic model for each senator's profile and generate 10 topics for each senator. One of the drawbacks of using text analysis is of course that it is not a perfect predictor nor analyzer of content (Grimmer and Stewart 2013). For a handful of senators, there were topics that output nonsensical connections in topics and were therefore not useful in our larger analysis. However, this of course may also be a function of how some Senators may under-utilize their twitters and therefore may not have enough of substantial content to analyze. Overall, we found that our models were fairly stable. After scraping more tweets to increase our overall sample, we reran the LDA models and had many senators whose top topics remained the same as the original models.

The aim of this project was to become familiar with the process of gathering and analyzing data from social media sites, specifically twitter, while working with real-life scenarios. This incorporated the previous section on data collection and processing. However, further empirical methods go beyond the scope of this paper. For this reason, we use the descriptive outcomes of the LDA analysis along with data on senator bill sponsorship to make connections between generated topics and bill sponsorship.

To gather data regarding bill sponsorship, we used congress.gov's database on bill sponsorship. We coded the bills that each senator sponsored in the 2017-2018 session of Congress into a number of meaningful groups. These groups included appropriations, taxes, the federal budget, drug regulations, the environment/resource management, gun rights, foreign policy, health, immigration, corporations, the military/veterans, trade, and education. For our analysis of the connections between twitter content and bill sponsorship, we choose to focus on a handful of Senators that are the leaders or the ranking members of the most powerful committees in the senate. These committees include Rules and Administration, the Judiciary, Commerce, Foreign Relations, Finance, and Member Appropriations (Oleszech). These senators include Richard Shelby, Dianne Feinstein, Bill Nelson, Chuck Grassley, Amy Klobuchar, Bob Menendez, Ron Wyden, John Thune, and Bob Corker. We chose to focus on these senators both to be parsimonious but also because of their positions of power. Given that they are leaders within these committees, each of these senators had sponsored about 100 bills within the 2017-2018 period.

The analysis resulted in mixed findings across the ten senators included in our sample. Of these ten, four models included topics that could clearly pertain to a specific category of bill. The

topical connections include individual rights, corporate rights, and foreign policy. However, many topics not related to legislation also appeared. These topics almost exclusively relate to the discussion of corruption surrounding current political events.

The individual rights topic manifested as terms related to the discussion of gun violence and the second amendment. This topic was found within the tweets of senator Chuck Grassley (IA). Of senator Grassley's total bill sponsorship, 10% fall into the category of individual rights. This percentage is the second highest among Grassley's total bill sponsorship, second only to foreign policy.

Corporate rights were a large topic of discussion over the period of data collection, due to a senate hearing on internet privacy with Facebook founder Mark Zuckerberg. However, of the ten senators, senator John Thune (SD) had the highest involvement with the issue on Twitter. Discussions of corporate rights are not new to senator Thune, as this category of bills accounts for 13.5% of his total bill sponsorship, the highest of any category.

Finally, foreign policy topics were evident in two senators tweets: Bill Nelson (GA) and Bob Menendez (NJ). Nelson's tweets focused primarily on economic concerns, specifically trade and China. Menendez's tweets were more militarily oriented, concerned with the current administration and denuclearization. Of Nelson and Menendez's total bill sponsorships, foreign policy bills account for 7% and 10% of their total sponsorship, respectively. These percentages make foreign policy Nelson's third most common category and Menendez's second.

Overall, we had mixed findings regarding the connections between Twitter and bill sponsorship. However, based on the results from our LDA model, it is clear that both Senators

and citizens are using Twitter to discuss current issues in politics. It is likely that only certain bills passed through congress are getting enough attention that there is significant dialogue between senators and individuals regarding them. Rather, the content seemed to focus more on scandals and bigger picture issues. In future iterations of this project, we would aim to try to parse out what direction the connections could be between tweets and representative action and extend our analysis beyond bill sponsorship.

Works Cited

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