Political polarization on twitter: Implications for the use of social media in digital governments

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ABSTRACT

This study investigates two competing opinions regarding the role of social media platforms in partisan polarization. The "echo chambers" view focuses on the highly fragmented, customized, and niche-oriented aspects of social media and suggests these venues foster greater political polarization of public opinion. An alternative, which we term the "crosscutting interactions" view, focuses on the openness of the Internet and social media, with different opinions just a click away. This view thus argues that polarization would not be especially problematic on these outlets. Exploiting the variation among members of the U.S. House of Representatives in measured positions of political ideology, this study estimates the association between politicians' ideological positions and the size of their Twitter readership. The evidence shows a strong polarization on Twitter readership, which supports the echo chambers view. Lastly, we discuss the implications of this evidence for governments' use of social media in collecting new ideas and opinions from the public.

1. Introduction

Scholars are increasingly concerned about the negative impact of populist or ideological rhetoric expressed on the Internet (Baum, 2011; Baum & Groeling, 2008; Hong, 2012, 2013; Hong & Nadler, 2016; Levendusky, 2013; Prior, 2007; Sunstein, 2009; Webster & Ksiazek, 2012). Among online media outlets, social media has recently attracted considerable attention in regards to its potential for contributing to increasing polarization of views on the Internet as it creates networks among those sharing similar beliefs. One culprit for this ideological polarization is the ideological fragmentation of those outlets; by providing audiences with an "echo chamber" for their own beliefs, these potentially contribute to the polarization of public opinion (Hong, 2013; Kim & Hong, 2015; Sunstein, 2009). On the other hand, others argue that the openness of the Internet and social media allows citizens to receive a wide spectrum of ideologically different views, which was not possible without the Internet (Garrett, Carnahan, & Lynch, 2011; Mutz & Mondak, 2006). According to this view, those outlets may allow "crosscutting interactions" among people with different views and lead to a decrease in the polarization.

This study examines social media's potential role in contributing to partisan polarization. Our evidence comes from the Twitter activities of members of the U.S. House of Representatives. Specifically, we test whether politicians with unambiguous or extreme ideological positions had, all else equal, greater Twitter readership than their more moderate peers. In other words, we investigate the association between the

ideological positions of politicians (independent variable) and citizens (dependent variable) with the latter measured by the size of politicians' online readership. If online platforms, such as social media, contribute to increasingly polarizing public opinion, then from the perspective of governments serving the public in the digital era, partisan polarization may be viewed as a "wicked" problem—i.e., a problem with no definitive solutions (Churchman, 1967; Rittel & Webber, 1973). The dual trend of a rapid increase in the amount of information available online combined with platforms (such as social media) providing increasingly fragmented, customized, and niche-oriented content to users may not be easily reversed.

The resulting increasingly polarized public opinion may influence the process and integrity of government decision-making in several ways. The large body of research in the e-government literature highlights the growing importance of collecting new ideas and opinions from the public to inform policymaking, a process made possible by new advances in information technology (Bonsón, Royo, & Ratkai, 2015; Hong, 2013; Janssen & Estevez, 2013; Linders, 2012; Misuraca, Broster, & Centeno, 2012; Nam, 2012; Stamati, Papadopoulos, & Anagnostopoulos, 2015). However, if online platforms that collect, analyze, and integrate the voices of citizens are systematically biased towards ideologically extreme opinions, then governments must design a participatory online process that is inclusive enough to integrate a wide range of public opinion while also being shielded from the whims of populist and extreme views.

The results of this study suggest that fragmented online social media outlets such as Twitter have the potential to contribute to partisan polarization. Our evidence indicates that politicians with extreme ideological positions had, all else equal, a greater public audience than their

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moderate peers. This evidence has important implications for social media's potential as a two-way communication tool between governments and the citizenry. Specifically, one can think of the ideological spectrum of the House of Representatives' Twitter accounts as an analogy for the ideological spectrum of public information created by a set of government institutions. Then, the evidence indicates that, among the wide array of online messages created by governments, those containing extreme views may be more likely to be noticed, circulated, and amplified by the public, due to the "echo chamber" nature of social media outlets. If policymakers rely on those outlets in collecting and translating citizen voices, then they may give inappropriately greater weight to the voice of the extremes based on the apparent greater popularity of those views on social media.

This study contributes to several strands of past scholarly work. First, it advances and extends the literature examining the role of new information technology in policymaking (Desai & Kim, 2015; Ferro, Loukis, Charalabidis, & Osella, 2013). Second, it has broader implications for citizen participation and information sharing in networked governance structures (Janowski, Pardo, & Davies, 2012; Pardo, Cresswell, Thompson, & Zhang, 2006; Zhang, Dawes, & Sarkis, 2005). Lastly, the evidence has broad implications for research examining the potential of collaborative governance and citizen coproduction of public services in the digital era (Linders, 2012; Zavattaro, French, & Mohanty, 2015).

The remainder of the paper is structured as follows. Section 2 reviews the literature on competing views of political polarization and social media. Section 3 presents the data used along with a description of the empirical framework. Section 4 presents the major findings, and Section 5 presents a discussion and conclusion of the study.

2. Competing hypotheses

Embodying public values in policy by harnessing the wisdom of crowds may be a blueprint for government action in the digital era (see Janssen & Estevez, 2013; Mergel, 2013; Misuraca et al., 2012). Social media applications, such as Twitter and Facebook, offer novel venues for collecting citizens' insights on relevant policy issues (Hong, 2013; Mossberger, Wu, & Crawford, 2013). Every day thousands of citizens share information published via government Twitter accounts or comment on government websites; in turn, governments are increasingly seeking ways to integrate crowd- or citizen-sourced opinions into their policymaking processes (Mergel, 2010).

One caveat regarding the process of government–citizen interaction through online platforms is that the public opinions collected may be biased towards ideologically polarized views. Past research can be grouped into two broad categories of competing views. One view, the "echo chambers" argument, suggests that political polarization may be more salient in the highly fragmented and customized environment created by social media (Sunstein, 2009). A number of studies have provided empirical support for this line of reasoning. For instance, Adamic and Glance (2005) found that political blogs tend to link to sites sharing similar ideological views. Gruzd and Roy (2014) demonstrated some support for political polarization on Twitter during the 2011 Canadian Federal Election. Finally, Hong (2013) found evidence that politicians with extreme ideological positions tend to be more successful at campaign fundraising online.

On the other hand, a competing view, which we term the "crosscutting interactions" argument, suggests that an open online environment with free access to a wide range of different views promotes the exchange of ideas; this, in turn, works against political polarization. This view thus disagrees that polarization would be problematic on these online media outlets. Mutz and Mondak (2006) find that exposure to different political views fosters political tolerance by increasing people's knowledge of the rationales supporting those views. Even if social networking sites and the

Internet are more fragmented than offline media, citizens may have greater chances to interact with different political perspectives online than they do offline. Garrett et al. (2011) provide empirical support for this argument, demonstrating that people's use of political information sources conforming to their own views is positively correlated with their appetite for following different political perspectives on the Internet.

This study provides an empirical test of these competing views in the context of the U.S. House of Representatives' Twitter usage and their online readership. Specifically, we investigate the association between politicians' ideological positions and the size of the online readership of their Twitter accounts. If the "echo chambers" argument holds, then ideologically unambiguous views may receive greater attention on these outlets. Therefore, we have:

H1. All else being equal, Twitter accounts held by politicians with ideologically extreme views will have a greater online audience (a higher number of Twitter followers) on this outlet than their peers with moderate views ("echo chambers" hypothesis).

In contrast, if social media outlets provide an online forum for "crosscutting interactions" among people with different ideological positions, then we may have the following hypothesis:

H2. All else being equal, Twitter accounts held by politicians with ideologically extreme views will not have a significantly greater online audience (a higher number of Twitter followers) than their peers with moderate views ("crosscutting interactions" hypothesis).

3. Methodology

3.1. Sample

Our sample of politicians includes all members of the 111th U.S. House of Representatives. The members of the U.S. House are selected for the analysis considering that a relatively credible measure of their political ideologies is available. As explained in Section 3.2, political ideology indicators for these politicians are estimated based on the preferences revealed by their voting records; this provides unique and consistent observations of political ideology across a relatively large number of information producers.

This study aims to draw lessons for the practice of digital governments from the use of social media by the U.S. House of Representatives. Among the three branches of government, the legislative branch is chosen as the data source where reliable ideological positions are available. Further, between the two houses of Congress—the Senate and the House of Representatives—the House members are studied because the sample size (i.e., the number of members) is much larger and the House is considered to be "closer to the people" as members are elected every two years as opposed to Senators who are elected every six years. This results in more active communications with the citizenry through social media as the House members need to campaign for the public's vote more often for re-election. Although our sample comes from the social media activities of the House, we believe the results of our analysis can be extended to draw wider implications about the use of social media by political and administrative institutions.

Among the many forms of new information technologies, we focus on Twitter for two reasons. First, at the time of data collection, most politicians in our sample had Twitter accounts whereas fewer maintained public outlets on similar platforms such as blogs or Facebook (Hong & Nadler, 2012). Second, by analyzing Twitter, we can observe a much larger number of variables than we would if considering another similar platform; for example, we can consider the account's date of opening, the number of messages (hereafter, tweets) uploaded, and the size of the readership (hereafter, Twitter followers).