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Joseph Kahne & Benjamin Bowyer

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The Political Significance of Social Media Activity and Social Networks

JOSEPH KAHNE and BENJAMIN BOWYER

This paper examines panel data from two waves of the Youth Participatory Politics Survey, a nationally representative sample of young people in the United States. It employs a cross-lagged design to investigate the extent to which common forms of online activity create pathways to online and offline forms of political activity. Specifically, we examine the influence of Friendship-Driven (FD) and Interest-Driven (ID) online activity on online participatory politics and on offline forms of political action. Our findings reveal that FD and ID activity relate to political engagement, but in different ways. In addition, we find that the size of young people's social networks interacts with both FD and ID online activity to promote political activity. This indicates that having exposure to "weak-ties" (resulting from large social networks) promote higher levels of political engagement. These findings demonstrate the need to specify the kinds of online activities in which youth are engaged and, more broadly, the political significance of social media and social networks

Keywords Political Participation, Social Media, Youth, online politics, social networks

Most 18-year-olds eligible to cast their first presidential ballots in the 2012 election were born in 1994, the same year that Yahoo!, the Sony PlayStation, and Amazon.com appeared. For these individuals, who have matured in the shadow of Web 2.0, digital media have played a central role in the development and maintenance of their social relationships. Lenhart (2015) found that 92% of teens (ages 13 to 17 years) go online every day, with 24% reporting being online almost constantly. Furthermore, the rate of social media use by 18- to 29-year-olds has grown precipitously, from 41% in 2006 to 90% in 2015 (Perrin, 2015).

Online activity is also transforming young people's engagement with politics. In general, the Internet has become a dominant force when it comes to how campaign funds

Joseph Kahne is the Ted and Jo Dutton Professor of Educational Policy and Politics in the Graduate School of Education at UC Riverside. Benjamin Bowyer is Senior Researcher at the Civic Engagement Research Group at the Graduate School of Education at UC Riverside.

Address correspondence to Graduate School of Education, University of California, Riverside, 1207 Sproul Hall, Riverside, CA 92521. Joseph Kahne E-mail: jkahne@ucr.edu

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are raised, information is accessed, perspectives are shared and discussed, and individuals are mobilized to act politically. Youth politics, in particular, now includes a meaningful online component, as has been exemplified by Black Lives Matter, the DREAMer movement, and countless examples of flash activism (Earl, in press). What is less clear, however, is whether, when, and why engagement with social media is associated with political participation.

In this study, we assess the potential significance of two broad categories of online activity: friendship-driven (FD) and interest-driven (ID) engagement (see Ito et al., 2009; Jenkins, 2009). We test the hypotheses that these practices will create on-ramps to political activity, both online and offline, by fostering politically relevant skills and online social networks that prompt exposure to political issues. Our analyses employ a cross-lagged model, drawing on data from the 2013 and 2015 waves of the Youth Participatory Politics (YPP) Survey, a nationally representative panel of youths who were 15 to 27 years of age in 2013. Our findings illustrate the importance of FD and ID online activity for the development of youth political engagement, both online and offline. In addition, they highlight the importance of online social networks as a mechanism for leveraging weak social ties that promote participation.

The Impact of Social Media Use on Youth Political Participation

Although numerous studies detail rates of online social media use among youth and adult populations, and although the correlations between such activities and a range of political activities have been explored, scholars are still working to clarify whether and when particular forms of online activity with social media foster political engagement. A meta-analysis (Boulianne, 2009) of early studies of the relationship between Internet use and offline political participation found that although most of those studies identified a positive association between the two, that association was typically not very strong. As scholarship has advanced and new media have continued to evolve, more recent research has focused more specifically on the relationship between social media use and political participation. Boulianne's (2015) meta-analysis of this research found that most of the studies examined reported a positive association between social media use and political engagement. However, because the vast majority of those studies relied on cross-sectional survey data, they were severely restricted in their ability to test hypotheses about the causal relationships between the variables; the few studies to employ panel data were much less likely to report a positive, statistically significant relationship between social media use and political participation than were those using cross-sectional data (Boulianne, 2015).

There are important distinctions between different forms of online activity and social networking site (SNS) use that may be consequential for their relationships with political engagement. Some scholars have focused on particular technologies (e.g., smartphones) or social media platforms (e.g., Facebook, Google+, or Twitter). For example, in their two-wave panel study of adolescents in Belgium, Theocharis and Quintelier (2016)examined the relationship between Facebook use and political participation. Other studies have compared the effects of the use of different social media platforms (e.g., Pasek, More, & Romer, 2009; Zhang, Seltzer, & Bichard, 2013) and still others have combined the frequency with which several platforms are used into a measure of social media use (e.g., Xenos, Vromen, & Loader, 2014).

A different analytical approach places emphasis on the purposes (e.g., information search) and interactive dynamics (e.g., sharing among peers) of online engagement. For example, Ekström and Östman (2015), in their two-wave panel survey of Swedish youths, distinguished among three types of online activity: information gathering, social interaction, and creative production. Creative production was found to a have a direct effect on offline and online political participation, whereas the effects of information gathering and social interaction were indirect. The latter forms of online activity were both found to lead to greater engagement in online political discussion, which in turn led to greater online and offline political participation. Similarly, Gil de Zúñiga, Molyneux, and Zheng (2014) distinguished between two types of social media usage: use for news and use for social interaction. Their analysis of a two-wave panel study of American adults found that either type of social media use at Time 1 was associated with greater political participation, both offline and online, at Time 2.

We believe there are several advantages to the kinds of analytic strategies that emphasize the specific purposes and dynamics of online engagement as opposed to those emphasizing technologies and platforms. First, technologies and platforms change frequently. Moreover, because most platforms (e.g., Facebook, Instagram, Twitter) can be used for a variety of purposes and in multiple ways, focusing on a specific platform does not clarify what it is about the activity that leads to a given outcome. In contrast, attending to the purposes and dynamics of online engagement allows for clearer specification and assessment of why a given activity may have a given effect.

When conceptualizing the purposes and dynamics of online activity that may foster increased political engagement, several conceptual distinctions appear helpful. Specifically, Jenkins (2009) has detailed the degree to which youths often are immersed in participatory cultures in which participants create and share with others; experienced participants help less experienced ones acquire knowledge and skills and solve problems; and participants develop a sense of connection with one another, often resulting in the formation of large social networks. In addition, in a first-of-its-kind large-scale ethnographic study, Ito and colleagues (2009) found that youths often engage in participatory cultures through two forms of online activity: friendship-driven (FD) activity and interest-driven (ID) activity. Thus, rather than grouping online activity into a unidimensional category or focusing on a particular technological platform (e.g., Facebook or Twitter), Ito and colleagues' distinction is based on the reasons behind youth engagement and on the nature of the social interactions that users have online.

Online FD engagement is conducted through social media, primarily for the purposes of maintaining and cultivating relationships with one's friends and family members. These practices often center on day-to-day interactions with one's peers from school and the neighborhood. They often involve SNS, such as Instagram or Facebook, to engage in activities like sending messages, sharing status updates, or forwarding videos to friends or family.

Online ID participation, by contrast, revolves around an individual's interests (e.g., music, sports, fandom, gaming, crafts). ID participation generally involves creating online content, sharing perspectives, and circulating information. It includes activities like participating in an online forum or group related to one's interests and creating media, such as blogs or podcasts, related to one's interests.

It is important to note that there are some blurry or overlapping borders between varied forms of youth online activity and political participation. As part of their engagement in FD and ID activities, individuals often exchange information or perspectives related to political issues. In addition, as van Deth (2014) has detailed, the affordances of new digital media combined with more self-expressive and engaged approaches to

political participation (see Dalton, 2008) have expanded the forms of political participation. Even activities that are not located in the political arena or directly targeted at influencing political actors can be thought of as constituting political participation if they are used by participants "to express their political aims and intentions" (van Deth, 2014, p. 359). Indeed, some online activities might fit the definition of both political participation and ID or FD activity, as they may have multiple motivations, both political and nonpolitical (Hooghe, 2014). However, from a conceptual standpoint, there is a difference for most young people between socializing or pursuing an interest in sports, for example, and political engagement. And both ethnographic and survey research confirms that, for the clear majority of youths, engagement with social media is spurred far more by a desire to socialize with friends and family, to engage with interests in sports, hobbies, and popular culture, and to be entertained than by a desire to engage with political issues or causes (Ekström & Östman, 2015; Ito et al., 2009). These and related studies also find, however, that unintended or incidental exposure to political issues occur online and that these can be politically significant (e.g., Wojcieszak & Mutz, 2009).

Indeed, the incidental exposure to political issues that occurs while engaging in FD and ID activities is part of what makes them politically significant. In particular, two chief reasons we expect FD and ID activities to be important to young people's political participation are that (a) they allow for the practice of skills that are highly relevant to online forms of political participation and (b) they lead to engagement in social networks that expose youths, often incidentally, to political discussions and mobilization efforts that, in turn, increase rates of political participation. These expectations parallel findings from studies of offline organizational participation. Indeed, just as young people's involvement with nonpolitical organizations such as religious institutions and extracurricular clubs often leads to the development of forms of social capital, including expanded skills and social networks, that ultimately lead to increased levels of civic engagement (McFarland & Thomas, 2006; Smith, 1999), participation in FD and ID online activities may develop relevant skills and networks that foster online political activity.

Specifically, scholars of political participation have identified civic skills as an essential resource that spurs engagement, because those who possess them "are more likely to feel confident about exercising those skills in politics and to be effective… when they do" (Verba, Schlozman, & Brady, 1995, p. 305). In offline contexts, involvement in activities such as jobs, religious institutions, and voluntary organizations that have nothing do with politics can help individuals develop skills like giving speeches or organizing meetings that they can subsequently apply to political causes (Verba et al., 1995). Likewise, many skills employed during both FD and ID activities may be highly useful when engaging in political activity in online settings. Indeed, FD and ID practices are closely aligned with a set of politically driven practices that we term *online* participatory politics: interactive, peer-based acts through which individuals and groups seek to exert voice and influence, both individually and collectively, on issues of public concern (Cohen, Kahne, Bowyer, Middaugh, & Rogowski, 2012; Kahne, Middaugh, & Allen, 2015). We expect that the skills developed when engaged in FD and ID online activity (for example, creating a video, remixing content, or starting a Facebook group) as well as broad familiarity with online social networking practices will support online participatory political acts ranging from blogging and circulating political news, starting a new political group, to mobilizing one's social network on behalf of a cause or for an event. Hargittai and Shaw (2013) find, for example, that Internet skills are related to both accessing and discussing online political content and petition signing. In short, in line with Verba and colleagues' (1995) model, online skills and familiarity with online practices, even when

developed in other contexts, represent a resource that is expected to make participation in political life more likely.

In addition, we expect that social networks that are cultivated when engaging in FD and ID online activity will promote political engagement. In particular, engagement in FD and ID activities may expose young people to political discussion and recruitment efforts that promote political participation. Empirical evidence regarding digital contexts provides support for these expectations. Wojcieszak and Mutz (2009) found that participation in online discussion groups tied to leisure activities such as hobbies often prompted incidental exposure to discussions of political issues. This inadvertent exposure to politics may spark greater political engagement or expose individuals to requests to participate in politics. For example, online political discussion, especially with people with whom one has relatively "weak ties," is associated with greater online political participation (Valenzuela, Kim, & Gil de Zúñiga, 2012). Moreover, research in varied national contexts demonstrates that individuals who are mobilized online to engage in political activity become more likely to participate politically online (Best & Krueger, 2005; Bond et al., 2012; Lilleker & Koc-Michalska, 2017; Vissers, Hooghe, Stolle, & Maheo, 2012).

In short, we expect that online engagement in FD and ID activity will promote engagement in online participatory politics both due to the development of relevant skills and due to exposure to political content and mobilization efforts through social networks. This leads us to the following pair of hypotheses regarding the effects of FD and ID online activity on changes in young people's levels of engagement in online participatory politics:

H1: FD online activity leads to an increase in online participatory politics.

H2: ID online activity leads to an increase in online participatory politics.

There is debate in the literature regarding whether a distinction should be drawn between online and offline political engagement. While many prior studies distinguish between online and offline political participation (e.g., Best & Krueger, 2005; Schlozman, Verba, & Brady, 2010), empirical evidence from U.S. and European contexts indicates a blurring of the boundary between online and offline for some political activities (Gibson & Cantijoch, 2013; Hirzalla & Zoonen, 2011; Oser, Hooghe, & Marien, 2013). Despite these areas of convergence, we find it important to distinguish between online and offline political participation. For one thing, Gibson and Cantijoch (2013) find that online, expressive political activities are empirically distinct from offline forms of political participation. Moreover, while studies consistently find that engagement with social media impact online engagement with politics, there is uncertainty in the literature regarding whether online social media activity affects offline political participation. Of the 23 coefficients estimating the relationship between social media use and offline participation reported in the six panel studies included in Boulianne's (2015) meta-analysis, only 57% were positive and just 26% were statistically significant.

These mixed findings highlight the need to more fully conceptualize whether and why engagement with friends or interests on social media might lead to offline political participation. We would not expect, for example, that FD and ID online activities would foster the development of technical skills that enable offline political activity because such skills are not used offline. At the same time, the social networks that are cultivated when engaging in online activity might be expected to promote political action in both online and offline settings. Online social networks, as discussed earlier, might lead youths to be exposed to political discussions that peak interest in and engagement with political issues

and they might make political mobilization by others more likely. Consistent with these expectations, online political discussion enables the development of young people's capabilities as citizens, and thus leads to greater political participation (Lee, Shah, & McLeod, 2013; Shah, Cho, Eveland, & Kwak, 2005). Similarly, studies have shown that political mobilization through social media leads to greater participation in a variety of offline political acts, ranging from voting to protest demonstrations (Anduiza, Cristancho, & Sabucedo, 2013; Dale & Strauss, 2009; Enjolras, Steen-Johnsen, & Wollebaek, 2013; Lilleker & Koc-Michalska, 2017; Valenzuela, 2013; but see Best & Krueger, 2005 and Vissers et al., 2012, for evidence that online mobilization may be medium-specific). In short, because they would likely facilitate recruitment efforts and exposure to political discussion, we would expect that FD and ID activities will lead to offline political action, as well as to online participatory politics:

H3: FD online activity leads to an increase in offline political action.

H4: ID online activity leads to an increase in offline political action.

Relatedly, if, as is postulated here, FD and ID engagement promote both online and offline political activity because they lead to exposure to political discussions and to mobilization efforts, then it stands to reason that these effects should be amplified when individuals engage in FD and ID activity in the context of larger online social networks. Such expectations are consistent with the literature on social ties (Granovetter, 1973). In addition, McAdam and Paulsen (1993) show that social ties provide highly significant structural supports for recruitment into activism. Scholars have also begun to examine these dynamics in the digital domain in a way that highlights the role of social networks, especially how social media promote the development of weak ties. Gil de Zúñiga and Valenzuela (2011), for example, analyze data from a nationally representative survey and find that participation in online networks is associated with increased exposure to discussion about public affairs among those with whom one has weak ties (e.g., coworkers and acquaintances), which, in turn, predicts increased civic behavior. Thus, we expect that the size of a young person's social network will amplify the effects that FD and ID online activities have on both online participatory politics and offline political action. Specifically, we test the following four hypotheses regarding these interactions between the size of youths' online social networks and their levels of FD and ID activity:

H5: There is a positive interaction between FD online activity and the size of one's online social network on online participatory politics.

H6: There is a positive interaction between FD online activity and the size of one's online social network on offline political action.

H7: There is a positive interaction between ID online activity and the size of one's online social network on online participatory politics.

H8: There is a positive interaction between ID online activity and the size of one's online social network on offline political action.

Data and Methods

We build upon recent research by testing these hypotheses with data from two waves of the YPP Survey, a nationally representative, three-wave survey of young people in the United States that was conducted with Co-PI Cathy Cohen at the University of Chicago between 2011 and 2015. The survey includes multiple measures of political engagement and online activity. All three waves of the Youth and Participatory Politics Survey will be made available as part of ICPSR's CivicLEADS collection https://www.icpsr.umich.edu/icpsrweb/content/civicleads/index.html. This unique panel data set allows us to explore the ways in which forms of online activity affect the development of political engagement among youths who have grown up in the Web 2.0 world.

The analyses use the data for those respondents who completed both the second and third survey waves (hereafter, Wave 2 and Wave 3).[1] The surveys were administered by GfK Group (formerly, Knowledge Networks) in English- and Spanish-language versions. Most respondents completed the survey online, although in Wave 2 the survey was administered by telephone interview to some respondents ($N = 129$) who did not respond to invitations to take the online survey. All surveys in Wave 3 were completed online. Both survey waves included oversamples of African-American and Latino youths, and the sampling frames were stratified by age and race/ethnicity.

The Wave 2 survey was administered between July 7, 2013, and November 7, 2013, to a sample of 2,343 young people between the ages of 15 and 27 years. This sample was drawn from three primary sources. The first consisted of a direct sampling of 18- 27-year-olds in GfK's KnowledgePanel (KP), a probability-based Internet panel designed to be representative of the U.S. population.[2] The second, also drawn from the KP, was created by contacting panelists GfK knew to be parents of someone in the target age range (i.e., 15 to 27 years old); if the panelist's household contained at least one person in the target population, then one eligible household member was selected at random to complete the survey.[3] The third sample source was an address-based sample that used the U.S. Postal Service Delivery Sequence File as its sampling frame.

Data collection for the Wave 3 survey took place between June 6, 2015, and November 14, 2015. GfK attempted to contact all eligible Wave 2 respondents with a request to complete the Wave 3 survey.[4] Overall, a total of 1,033 respondents completed both the Wave 2 and Wave 3 surveys, representing a retention rate of 44% of the 2013 sample. Table 1 reports the numbers of completed surveys and retention rates by the original (Wave 2) sample source.

The survey questions employed in our analyses are described later; descriptive statistics and the full wording for all survey questions are reported in supplemental Appendix A. We have grouped the survey variables according to whether they are treated as endogenous or exogenous in the analyses.

Endogenous Variables

Online Activity: Friendship-Driven and Interest-Driven Activity. Following Ito and colleagues (2009), we differentiate between two basic types of online social activity: *friendship-driven (FD) activity* and *interest-driven (ID) activity.* FD activity was measured using a battery of five questions that asked respondents about the frequency with which they "interact with family and friends" through digital and social media. These questions explored how often respondents engaged with friends and family members on social networking sites (SNS) through such activities as "sending messages, sharing status updates, or chatting online,"

Table 1
Retention rate across survey waves, by sample source

	Number of Participants		
Sample Source	Wave 2 (2013)	Wave 3 (2015)	Retention Rate (%)
KP Direct	1,003	566	56%
KP Parents	755	359	48%
ABS	585	108	18%
Total	2,343	1,033	44%

Note. KP = GfK Group's KnowledgePanel; ABS = address-based sampling of the U.S. Postal Service Delivery Sequence File.

and "tagging friends and family members in posts, photos, or videos." The interactions covered by these questions represent a range of the most common activities on Facebook and other SNS and have been identified as especially integral components of the social lives of young people today (Lenhart, 2015). For each of the five items about online FD activities, respondents indicated the frequency of their activity along a five-point scale ranging from "never" to "daily." These items are treated as ordinal scales in our analyses. The YPP data reveal such interactions were quite common: 44% of panelists reported engaging in at least one form of FD activity on a daily basis in 2015.

ID activity was similarly assessed, using a battery of five questions about respondents' engagement with others online with respect to their "major interests." The types of ID activity covered by these questions include sharing original content online and participating in online groups related to one's interests. Crucially, the ID-activity questions all involve interactions with other people; searching online for information about one's interests is not sufficient to qualify as an ID activity. As with the FD-activity questions, each question about online ID activities asked respondents to rate the frequency of their habits on a five-point scale ranging from "never" to "daily." The data reveal that ID activities were not as commonplace among YPP respondents as FD activities were: 18% of those surveyed reported engaging in at least one ID activity daily in 2015.

Political Engagement. The surveys included several questions designed to measure young people's engagement with politics. In order to test whether the effects of FD and ID activity extend to political activity in both online and offline contexts, we distinguished between two kinds of political activity: *online participatory politics* and *offline political action*.

Following Jenkins's (2009) framework, our measure of online participatory politics includes the kinds of participatory activities that also occur when youths are engaged in forms of online participatory culture (circulating content, collaborating with others, creating content, and connecting with others). We measure this with four survey questions that asked respondents about the frequency with which they used digital and social media to create, circulate, comment on, and send messages that concern political information. Specifically, respondents were asked how often in the previous 12 months they had recirculated online political content, created and circulated original political content, commented online about political content, and posted status updates or sent electronic

messages about politics. Responses were reported on a five-point scale ranging from "never" to "several times a week"; consequently, we treated these data as ordinal measures in our analyses. These online political activities are less commonplace than either FD or ID activities: just 10% in the Wave 3 survey reported doing at least one act of online participatory politics on a weekly basis.

To examine whether the influence of FD and ID online engagement extends beyond online practices, we created a measure of *offline political action*. The four political activities that comprise this measure encompass a range of behaviors in which people can engage to influence the political system, including attending political events, donating money to political campaigns, taking part in protests, and working on election campaigns. Each variable is dichotomous: in each question, respondents were asked whether they had engaged in the activity during the previous 12 months. Twelve percent of YPP panelists said that they engaged in at least one of these activities in the 2015 survey.

Political Interest. Some scholars have suggested that the relationship between use of digital and social media and political engagement may be explained by these variables' mutual association with political interest (Boulianne, 2009). To test this possibility, in one of the models reported here we include a four-point ordinal scale measuring *political interest* as an endogenous control variable.

Online Political Group. Similar to the potential impact of political interest, an observed relationship between online ID activity and political engagement could be driven by involvement in online groups that are political in nature. To control for this possibility, we create a measure of involvement in an *online political group* based on responses to the question, "What interests are you most involved with online?" Respondents were presented a list of interest categories and were allowed to select multiple categories. A dummy variable indicates whether participants selected "political" as one of these interests. Nine percent of respondents in both waves of the survey indicated that a political group was one of their main online interests.

Network Size. The size of an individual's online social network is measured along a six-point scale according to respondents' estimates of how many "people are on your list of 'followers,' 'friends,' 'connections,' or contacts" on the SNS that they use most often. Respondents who answered that they "do not use any social networking sites" are excluded from the analyses that include network size. Those who said that they were "not sure" how many people were on their list had their value for this variable set to the sample mean.

Exogenous Variables

The YPP Survey also included a number of variables that, for the purposes of our analyses, are treated as exogenous control variables. Some of these variables were regarded as time invariant: *race/ethnicity, country of birth, gender*, and whether the respondent's *mother possesses a college degree*. In addition, we treated *age* as a time-invariant variable, because the relative order of the panelists with respect to age remained the same across the two waves of the survey. A further control variable indicating whether the *respondent possesses a college degree* was measured independently in both waves, but we treated it as time invariant, employing only the Wave 3 data in our analyses herein.

Two other control variables were measured independently in each survey wave: *region of residence* (operationalized as a set of dummy variables) and *household income*.

Analytic Approach

In order to test our hypotheses about the relationship over time between political participation and online activity, we employ longitudinal structural equation modeling. Each longitudinal structural equation model contains two components: a measurement model and a structural model. Four of our main constructs of interest are operationalized as latent variables, measured by the indicators described in the previous section. The measurement model provides an estimate of how well the observed indicators correspond to the underlying latent variables. Confirmatory factor analysis is employed to estimate how much variation in each indicator is shared with the other indicators of the concept (the factor loading), and how much is unique to that indicator as a result of measurement error. In this way, the model accounts for the random and systematic sources of measurement error that are inherent in the constructs' indicators. Subsequently, our estimates of the associations between the latent constructs will be more accurate (Kline, 2010). Because our endogenous variables are all either dichotomous or measured on an ordinal scale, we applied a mean- and variance-adjusted weighted least squares (WLSMV) estimator to each model in order to correct for non-normality, and we report robust standard errors and mean- and variance-adjusted test statistics.[5]

Prior to estimating the structural models to test our hypotheses, we estimated a series of models that confirmed that our measurement model fits the survey data well and is invariant across the two waves of the survey, a critical prerequisite to the estimation of a longitudinal structural equation model (Little, 2013).[6] Figure 1 illustrates the measurement model for the four endogenous variables.Following convention, the latent variables are depicted in the figure as large circles; their indicators, as squares; and the error terms unique to each indicator, as smaller circles. Paths connect each latent variable to each of its indicators; the two variables measuring online activity—FD activity and ID activity—have five indicators each in both waves of the survey, and the two political engagement variables each have four. Curved arrows between the error terms indicate that we allow each indicator's error term at Wave 2 to be correlated with its error term at Wave 3. Finally, as depicted by the curved arrows between the latent variables, we allow all of the endogenous variables to be correlated with one another within and across the two survey waves.

In the structural models, we estimate cross-lagged models that specify paths between each of the endogenous variables over time, using the panel data to estimate the causal relationships within this system of variables. These include autoregressive effects between each variable's measurement at Wave 2 and its measurement at Wave 3, as well as cross-lagged effects between each endogenous variable at Wave 2 and the other endogenous variables at Wave 3. The former provides estimates of the intertemporal stability of the variables, and the latter assesses the extent to which each variable in Wave 2 predicts change in the other variables from Wave 2 to Wave 3, holding other covariates constant.

Our first structural model includes the endogenous variables—online participatory politics, offline political action, FD activity, and ID activity—and the exogenous control variables. Figure 2 represents a simplified version of this model that depicts the paths between the endogenous variables.In this model, causal paths (*straight arrows*) connect the endogenous variables measured at Wave 2 and each endogenous variable at Wave 3. No causal paths exist between the four endogenous variables at Wave 2; instead, as indicated by the curved arrows, we allow the endogenous variables at Wave 2 to covary

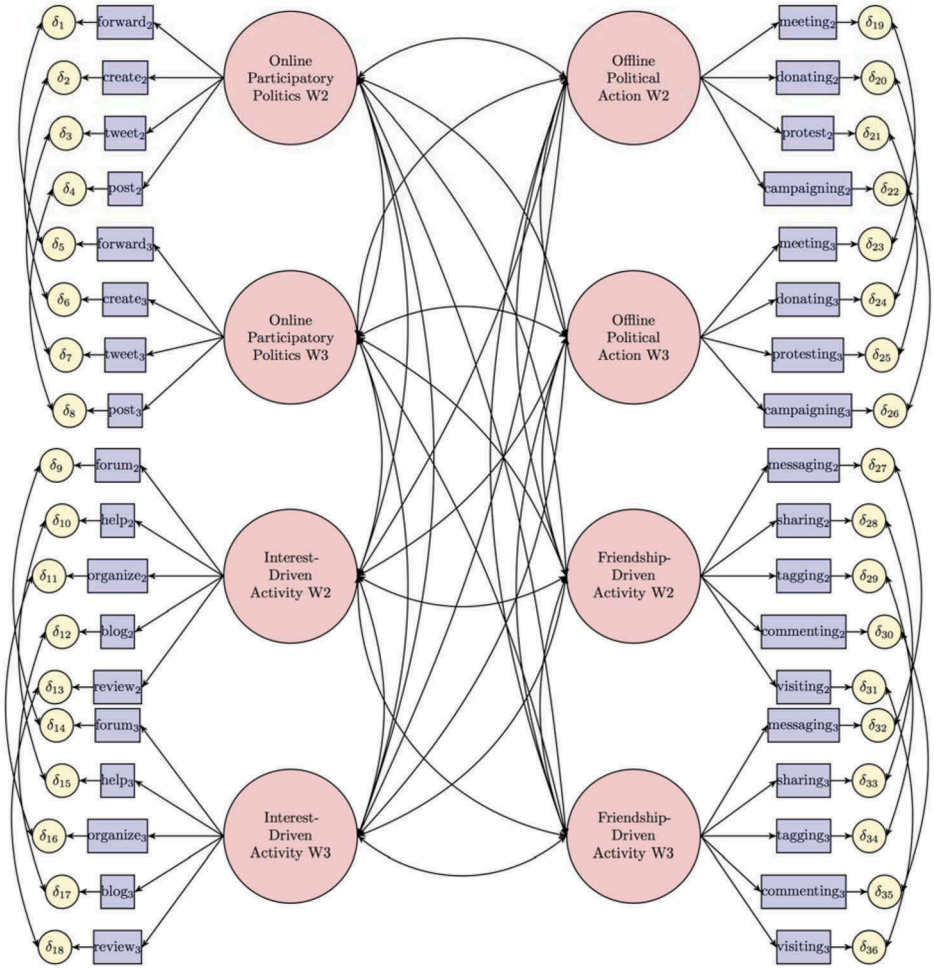

Figure 1. Measurement model for the four endogenous variables in our study. Large circles indicate latent variables; squares are indicators; smaller circles are the error term unique to each indicator. Paths are drawn between each latent variable and its indicators; curved arrows between error terms indicate that an indicator's error term at Wave 2 (W2) was allowed to be correlated with that indicator's error term at Wave 3 (W3); curved arrows between latent variables indicate that we allowed each endogenous variable to be correlated with another within and across the two survey waves. Question wording for the indicators is included in supplemental Appendix A.

with one another, without imposing any assumptions about the causal relationships between them. In addition to the paths shown in Figure 2, our model includes regression paths between the exogenous control variables and each endogenous variable. Specifically, there are paths between the time-invariant control variables and the endogenous variables at both Waves 2 and 3, whereas the time-varying control variables are allowed to affect only those endogenous variables measured at the same point in time. A second structural model includes political interest and involvement in an online political group as additional endogenous variables.

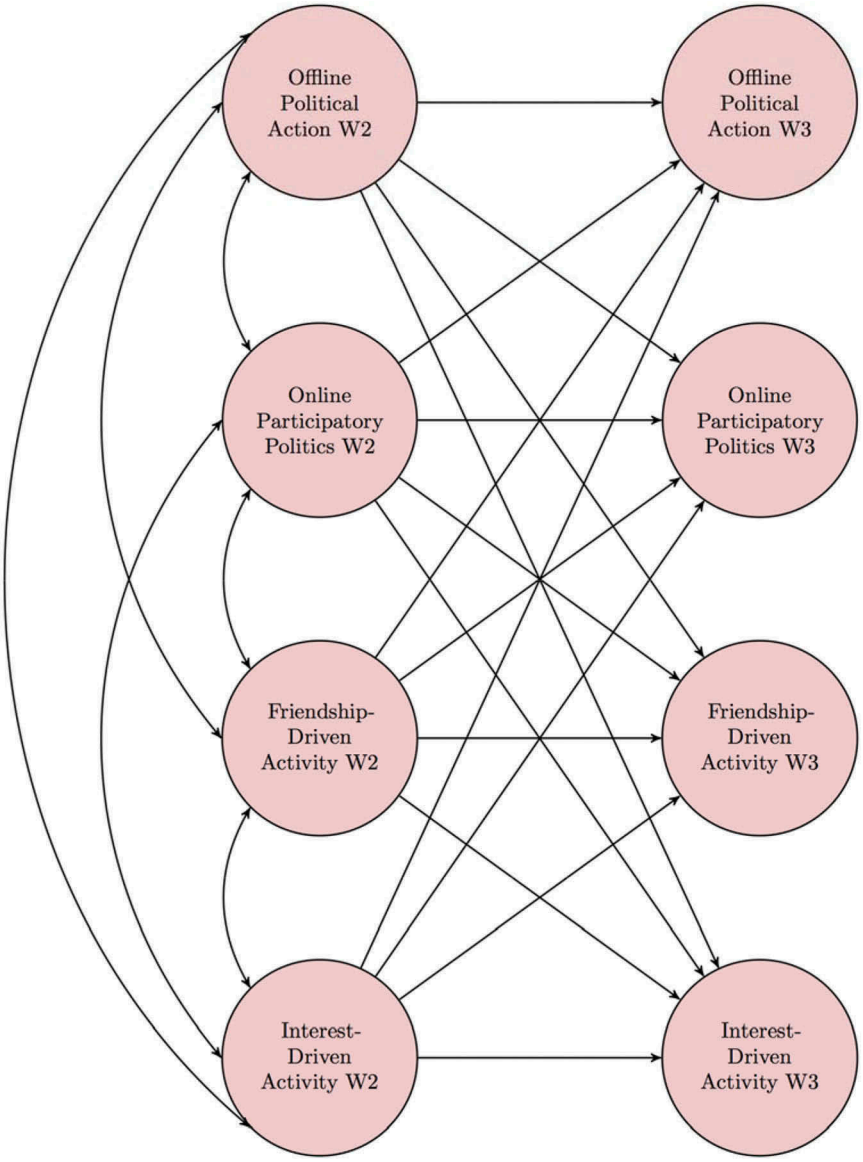

Figure 2. Simplified representation of the cross-lagged model used to test the relationships between political participation and online activity. Straight arrows signify the effects of each variable at Wave 2 (W2) on the variables at Wave 3 (W3); curved arrows indicate that the variables at W2 are allowed to covary with one another, without imposing any assumptions about the causal relationships between them.

The final step in the analysis is to examine whether social network size moderates the effects of online activity on political engagement. Network size, measured at both Waves 2 and 3, is included in the equation as a predictor variable, along with latent variables that represent the moderator effects between network size and each of the two forms of online activity. In constructing the latter variables, we mean-center each of the indicators before

taking their product, in order to mitigate the multicollinearity problems that arise from including the product variable along with the two variables that were multiplied to create it (Little, 2013). These mean-centered products are then included as indicators of the latent variable for the interaction between the independent variable and the moderator. Also because of concerns about multicollinearity, we estimate two separate models: one that includes the interaction between network size and ID activity and another that includes the interaction between network size and FD activity.[7]

Results

We test the hypotheses regarding the relationships between online activity and political participation across the two survey waves with a series of structural equation models. Model 1 includes cross-lags between the four endogenous latent variables (online participatory politics, offline political action, FD online activity, and ID online activity) from Wave 2 to Wave 3. In addition, each endogenous latent variable at each time point is regressed on the control variables (the time-invariant covariates and the covariates measured at that point in time). Model 2 includes political interest and involvement in an online political group as additional endogenous variables.

Table 2 presents the estimated effects between each endogenous variable at Wave 2 on each of the endogenous variables at Wave 3 for Models 1 and 2.[8] As expected, the autoregressive paths between each latent variable at Wave 2 and its measurement at Wave 3 are all positive and statistically significant, indicating a considerable degree of intertemporal stability for all four constructs.

The coefficients of more relevance to our first four hypotheses are the cross-lagged effects between the two forms of online activity and the two types of political participation. Looking first at the results for online participatory politics in Model 1, our analysis provides support for H1: FD activity at Wave 2 has a positive, statistically significant effect on online participatory politics at Wave 3. This indicates that, all else being equal, respondents who were most involved with FD online activities at Wave 2 tended to experience a greater increase in online participatory politics between the waves than did those who reported less involvement with FD online activity at Wave 2. Contrary to the expectations of H2, however, ID activity does not have a statistically significant effect on online participatory politics.

Turning next to the results for offline political action, we observe a different pattern of relationships. H3 is not supported: FD activity at Wave 2 does not appear to lead to an increase in offline political action from Wave 2 to Wave 3. However, consistent with H4, ID activity had a positive and statistically significant cross-lagged effect on offline political action. That is, there is evidence that ID online activity leads to greater political participation and that the effects of FD and ID activity differ. In line with the theory that FD and ID online activity will lead to the development of online skills, FD activity is associated with a growth in online participatory politics. At the same time, ID activity appears to lead to greater offline political action, which is more consistent with an explanation that online activity allows young people to cultivate social ties that promote political engagement.

In addition, the results of our cross-lagged model indicate that the two forms of political engagement are related to each other over time. As expected, the cross-lagged effect of each form of engagement on the other across the two waves is positive. However, only the relationship between offline political action in Wave 2 and online participatory

Table 2
Estimated effects of Wave 2 endogenous variables on Wave 3 endogenous variables, using longitudinal structural equation models

		Model 1[a]			Model 2[b]		
Wave 2 Variable	Wave 3 Variable	Unst.	SE	Std.	Unst.	SE	Std.
Online participatory politics	Online participatory politics	0.302***	0.064	0.318	0.246***	0.066	0.259
Offline political action	Online participatory politics	0.241**	0.080	0.286	0.176*	0.081	0.218
FD activity	Online participatory politics	0.196**	0.059	0.178	0.208***	0.057	0.190
ID activity	Online participatory politics	0.068	0.070	0.058	0.039	0.068	0.034
Political interest	Online participatory politics	–	–	–	0.043	0.041	0.045
Online political group	Online participatory politics	–	–	–	0.158*	0.076	0.194
Online participatory politics	Offline political action	0.100	0.084	0.098	0.022	0.081	0.020
Offline political action	Offline political action	0.573***	0.097	0.633	0.480***	0.106	0.535
FD activity	Offline political action	0.040	0.054	0.034	0.042	0.053	0.034
ID activity	Offline political action	0.146*	0.069	0.116	0.134*	0.066	0.103
Political interest	Offline political action	–	–	–	–0.009	0.063	–0.009
Online political group	Offline political action	–	–	–	0.250*	0.106	0.276
Online participatory politics	FD activity	0.002	0.062	0.002	0.012	0.064	0.014
Offline political action	FD activity	0.024	0.062	0.031	0.021	0.065	0.028
FD activity	FD activity	0.637***	0.037	0.628	0.641***	0.037	0.632
ID activity	FD activity	0.021	0.053	0.019	0.008	0.054	0.007
Political interest	FD activity	–	–	–	–0.017	0.037	–0.020
Online political group	FD activity	–	–	–	0.010	0.073	0.013
Online participatory politics	ID activity	–0.002	0.055	–0.002	0.029	0.057	0.036
Offline political action	ID activity	0.117*	0.057	0.160	0.152*	0.062	0.218

(*Continued*)

Table 2
(*Continued*)

Wave 2 Variable	Wave 3 Variable	Model 1[a]			Model 2[b]		
		Unst.	SE	Std.	Unst.	SE	Std.
FD activity	ID activity	0.105**	0.039	0.110	0.107**	0.041	0.113
ID activity	ID activity	0.541***	0.048	0.531	0.550***	0.051	0.546
Political interest	ID activity	–	–	–	0.063	0.037	0.077
Online political group	ID activity	–	–	–	–0.145*	0.069	–0.205
Online participatory politics	Political interest	–	–	–	–0.066	0.079	–0.086
Offline political action	Political interest	–	–	–	0.215**	0.077	0.331
FD activity	Political interest	–	–	–	0.067	0.065	0.076
ID activity	Political interest	–	–	–	–0.113	0.082	–0.120
Political interest	Political interest	–	–	–	0.301***	0.039	0.396
Online political group	Political interest	–	–	–	0.387***	0.068	0.588
Online participatory politics	Online political group	–	–	–	0.006	0.091	0.006
Offline political action	Online political group	–	–	–	0.185	0.096	0.233
FD activity	Online political group	–	–	–	0.045	0.092	0.042
ID activity	Online political group	–	–	–	–0.175	0.106	–0.153
Political interest	Online political group	–	–	–	0.119*	0.060	0.129
Online political group	Online political group	–	–	–	0.591***	0.084	0.736

Notes. Unst. = unstandardized regression coefficient; SE = standard error of the unstandardized coefficient; Std. = standardized regression coefficients; FD = friendship-driven; ID = interest-driven. A dash indicates no data. Model 1 and Model 2 both include a measurement model and a structural model that includes exogenous control variables in addition to the endogenous variables reported here (see supplemental Appendix C for these estimates).

[a]Fit statistics for Model 1: $N = 901$; $X^2(1101) = 1{,}304$; $p < .001$; comparative fit index (CFI) = .995; root mean square error of approximation (RMSEA) [95% confidence interval (CI)] = .014 [.011, .017].

[b]Fit statistics for Model 2: $N = 891$; $X^2(1231) = 1{,}447$; $p < .001$; CFI = .994; RMSEA [95% CI] = .014 [.011, .017].

* $p < .05$. ** $p < .01$. *** $p < .001$. All two-tailed.

politics in Wave 3 was found to be statistically significant. The effect of online participatory politics in Wave 2 on offline political action is not significant.

Although FD and ID online activity do appear to have some effects on young people's engagement in the two forms of political participation in our analysis, we found less evidence that political participation leads to an increase in FD or ID online activity. Offline political action at Wave 2 does appear to lead to an increase in ID activity, but online participatory politics does not lead to an increase in ID activity, nor does either form of political participation lead to a change in FD activity over time.

Our failure to find a cross-lagged effect of online participatory politics on FD activity is particularly noteworthy, given the similarity in the types of activities included in both constructs. This supports the hypothesis that online activity leads to political participation, but not the other way around. On a related note, FD activity at Wave 2 has a positive, statistically significant effect on engagement in ID activity, but we do not observe a cross-lagged effect of ID activity on FD activity. These results indicate that FD activity—the most common form of online activity—leads to increased involvement in the other forms of online activity we measured (i.e., ID activity and online participatory politics), but ID activity and online participatory politics do not lead to increases in FD activity.

To test the robustness of the findings of Model 1, Model 2 adds *political interest* and *involvement in an online political group* as endogenous variables and includes their cross-lagged effect on the other endogenous variables. Contrary to expectations, political interest at Wave 2 does not have a statistically significant effect on either form of political engagement at Wave 3. On the other hand, those young people who were involved in an online political group in Wave 2 show statistically significant increases in both offline political action and online participatory politics over time, all else equal. The most important finding, though, is that the inclusion of political interest and involvement in an online political group in Model 2 does not substantively alter the other endogenous variables' effects on one another that we observed in Model 1. In particular, FD activity at Wave 2 is associated with an increase in online participatory politics, and ID activity at Wave 2 is associated with a statistically significant increase in offline political action. This gives support to the interpretation that involvement in interests online can encourage greater participation in politics among youths.

The final set of models (reported in Table 3) test Hypotheses 5, 6, 7, and 8 regarding whether the size of an individual's online social network moderates the effects of online activity on political engagement. As a first step, Model 3 adds network size to the same set of endogenous and exogenous variables included in Model 1. Network size in Wave 2 appears to have no effect on changes in either offline political action or online participatory politics over time. The relationships between the other endogenous variables remain unchanged from Model 1, even though Model 3 excludes those respondents who reported in Wave 2 that they did not use any SNS.

Model 4 adds the interaction between FD activity and network size at Wave 2 as a predictor of the two forms of political engagement at Wave 3. This interaction does not have a statistically significant effect on online participatory politics, contrary to Hypothesis 5. This suggests that it is the volume of FD activity alone that influences online political activity, irrespective of how many "friends" one interacts with online. However, there is support for Hypothesis 6. The interaction between FD activity and network size has a positive, statistically significant on offline political action. So, while neither network size nor FD activity alone is found to affect offline political action, youths who had a large network *and* were heavily involved in FD activity did display greater-than-average growth in offline political action between Waves 2 and 3.

Table 3
Estimated effects of Wave 2 endogenous variables and network size on Wave 3 endogenous variables, using longitudinal structural equation models

		Model 3[a]			Model 4[b]			Model 5[c]		
Wave 2 Variable	Wave 3 Variable	Unst.	SE	Std.	Unst.	SE	Std.	Unst.	SE	Std.
Online participatory politics	Online participatory politics	0.323***	0.074	0.336	0.338**	0.073	0.353	0.339***	0.073	0.353
Offline political action	Online participatory politics	0.230**	0.085	0.334	0.214*	0.083	0.298	0.214*	0.083	0.297
FD activity	Online participatory politics	0.199**	0.064	0.181	0.188**	0.062	0.171	0.188**	0.062	0.171
ID activity	Online participatory politics	0.025	0.052	0.027	0.030	0.051	0.031	0.030	0.051	0.031
Network size	Online participatory politics	–0.009	0.026	–0.015	–0.013	0.025	–0.021	–0.013	0.025	–0.021
FD activity X Network size	Online participatory politics	–	–	–	0.042	0.029	0.060	–	–	–
ID activity X Network size	Online participatory politics	–	–	–	–	–	–	0.083***	0.020	0.147
Online participatory politics	Offline political action	0.158	0.090	0.142	0.118	0.093	0.107	0.118	0.092	0.108
Offline political action	Offline political action	0.512***	0.097	0.646	0.560***	0.101	0.679	0.559***	0.101	0.678
FD activity	Offline political action	0.084	0.063	0.067	0.083	0.062	0.066	0.083	0.062	0.066
ID activity	Offline political action	0.133*	0.052	0.122	0.126*	0.053	0.115	0.126*	0.053	0.115
Network size	Offline political action	–0.057	0.032	–0.079	–0.023	0.030	–0.033	–0.023	0.030	–0.033
FD activity X Network size	Offline political action	–	–	–	0.120**	0.036	0.152	–	–	–

ID activity X Network size	Offline political action	–	–	–	–	–	–	0.080***	0.026	0.124

Notes. Unst. = unstandardized regression coefficient; SE = standard error of the unstandardized coefficient; Std. = standardized regression coefficient; FD = friendship-driven; ID = interest-driven. A dash indicates no data. Models 3, 4, and 5 all include a measurement model and a structural model that includes exogenous control variables in addition to the endogenous variables reported here (see supplemental Appendix C for these estimates).

[a]Fit statistics for Model 3: $N = 818$; $X^2(1140) = 1{,}237$; $p < .001$; comparative fit index (CFI) = .992; root mean square error of approximation (RMSEA) [95% confidence interval (CI)] = .010 [.004, .014].

[b]Fit statistics for Model 4: $N = 818$; $X^2(1409) = 1{,}780$; $p < .001$; CFI = .971; RMSEA [95% CI] = .018 [.015, .020].

* $p < .05$. ** $p < .01$. *** $p < .001$. All two-tailed.

Similarly, Model 5 includes the interaction between ID activity and network size. Consistent with Hypotheses 7 and 8, the results indicate that this interaction has a positive, statistically significant effect on both offline political action and online participatory politics. That is, while network size by itself is not associated with increased political participation, it does seem to amplify the effects of ID activity on political participation, both online and offline.

Limitations

One potential limitation of our findings is that our measures do not specifically exclude politically oriented behavior from the activities we treat as FD or ID. This raises the question of whether the relationships between ID and FD and political participation are due to already politically interested individuals engaging in political activity as part of their FD and ID engagement. With respect to ID activity, Model 2 includes controls for both political interest and a variable that indicates if a respondent identified "politics" as one of their main online interests. That we still find that ID activity at Wave 2 leads to increase in offline political action in Wave 3 lends strong support to the interpretation that the political significance of ID activity was due to incidental exposure rather than due to exposure driven by an interest in politics. Still, in future work, having a more direct measure of incidental exposure would help to clarify this relationship.

There is greater potential overlap between our measures of FD activity and our measures of political engagement. In particular, several of the online activities included in our measures of FD activity and online participatory politics are quite similar. This might lead some to question whether the latter activity is a subset of the former. Our data analysis, however, indicates FD and online participatory politics are measuring distinct constructs. First of all, the results of our measurement models support the contention that our four main endogenous variables—FD activity, ID activity, online participatory politics, and offline political action—are distinct concepts. In addition, the cross-lagged models that we employ allow us to gauge the reciprocal influences among FD, ID, online participatory politics, and offline political action over time. In particular, FD activity at Wave 2 is allowed to influence online participatory politics at Wave 3 and online participatory politics at Wave 2 is allowed to influence FD at Wave 3. If online participatory politics were just a particular form of FD activity, then we would expect to find that these cross-lagged effects to be mutually reinforcing. Instead, the only statistically significant effect leads from FD activity at Wave 2 to online participatory politics at Wave 3; online participatory politics at Wave 2 does not seem to lead to greater FD activity in Wave 3.

Our interpretation of these findings is that the skills acquired when engaged in FD activity online facilitates future engagement in online participatory politics. That is, the similarity in the two types of activity helps young people go from interacting with their friends and family to expressing their political opinions. Unfortunately, our study did not include measures of online skills that would allow us to test these hypotheses directly. This underscores the need for studies that consider additional factors such as skill development in an effort to better understand the varied ways that online activity can be politically relevant.

Discussion

Taken together, these findings provide some of the strongest evidence to date regarding the political significance of common forms of online activity. This study draws on a large, nationally representative data set, with panel data enabling cross-lagged analysis that allows us to test the over-time relationships between FD and ID online activity and political participation. Most importantly, we find that FD and ID online activity create pathways to greater online *and* offline

political engagement. Prior research indicates that adolescence is a key period for political socialization and activation (Nie, Junn, & Stehlik-Barry, 1996), and political engagement during adolescence and young adulthood is a strong predictor of future patterns of engagement or disengagement (Plutzer, 2002). Consequently, our findings highlight the need for scholars to examine multiple forms of online activity alongside politically oriented online activities when seeking to understand youth political development and engagement.

The study also makes clear the limitations associated with treating online engagement as a uniform activity that is assessed, for example, with indicators such as time spent online or level of engagement with a particular platform (e.g., Facebook). Specifically, we focused on FD and ID online activity. Of the two, FD online activity was the most common, with 44% of respondents from our nationally representative sample reporting engaging in at least one FD-type activity on a daily basis (compared with 18% reporting at least one ID activity every day). We also found that the two forms of online activity we examined had differing effects on political action: FD online activity promoted later engagement in online participatory politics, whereas ID online activity promoted offline political activity. In addition, we found that network size interacts with both FD and ID online activity to promote offline political activity and that network size interacts with ID online activity to promote online participatory politics.

Thus, at the same time that these findings highlight the importance of attending to common forms of online activity, they also provide useful insight into when and why such activities matter. Specifically, our findings indicate that social ties, and weak ties in particular, are influential when it comes to both online and offline political engagement. For those individuals who had large social networks (more weak ties), both FD and ID participation led to increased levels of offline political activity and ID participation in conjunction with large social networks led to increased engagement in online participatory politics. In short, it appears that high numbers of weak ties (as indicated by having large social networks) provide an important bridge between FD and ID online activity and offline political action.

Such interpretations also highlight a question for future research: What accounts for the relationship between weak ties and online and political engagement? In non-digital contexts, two explanations that are commonly put forward for this relationship are that (a) those with weak ties are exposed to more political content which, in turn, activates political interest and (b) those with weak ties are more likely to be subject to recruitment efforts which, in turn, promote engagement. In future work, it would be valuable to test these and other plausible explanations for the "strength of weak ties" in online contexts. Such studies would also help us to delve into what several scholars have identified as the porous boundaries between largely social- and interest-oriented online activity and politically oriented content (Ekström & Shehata, 2016; Jenkins, Shresthova, Gamber-Thompson, Kligler-Vilenchik, & Zimmerman, 2016; van Deth, 2014).

The contrasting findings with respect to the effects of FD activity and ID activity also suggest that it would be valuable to investigate whether these two forms of online engagement differ in the degree to which they foster weak ties. In general, we would expect that ID networks would be characterized to a greater degree by weak ties than FD participation. Compared with those taking part in FD online activity, individuals engaged in online ID communities are generally less likely to interact with one another in face-to-face contexts and to be more diverse in terms of geography, age, and political perspective. FD engagement, in contrast to ID engagement, generally takes place between individuals who know each other offline and to a greater degree are likely characterized by strong ties (see Ito et al., 2009). This dynamic might help explain why we found ID activity, but not FD activity (independent of social network size) promotes offline political activity (also see Kahne, Lee, & Feezell, 2013).

This explanation would not, however, explain why FD activity, but not ID activity, was found to promote increased engagement in online participatory politics.

This finding is more consistent with an explanation that focuses on how FD activity can lead to the development of civic skills that facilitate political participation (Verba et al., 1995). Two further pieces of evidence lend support to this interpretation. The effect of FD activity on online participatory politics does not appear to be conditional on network size; this indicates that it is the amount of friendship-driven activity, not the quantity of "friends," which provides important practice of the skills required for online participatory politics. In addition, FD activity in Wave 2 is found to lead to an increase in ID activity in Wave 3. This is likewise consistent with an interpretation that sees FD activity as giving young people practice employing online skills that facilitate their participation in their interests online, whether they are political or not. Such findings, while framed somewhat differently, are also consistent with Ekström and Shehata's (2016) focus on porous boundaries between nonpolitical and political activities. The fact that similar skills and practices are used in online FD and ID activities and in online participatory politics increases the degree to which there are easily traversed boundaries and enables online political engagement.

Finally, while not a central focus of this study, the relationship between online political activity and offline political activity is also worthy of attention (see especially, Kim, Russo, & Amnå, 2017). Some scholars find that online and offline political activity are relatively independent (e.g., Emmer, Wolling, & Vowe, 2012), others find that online political engagement leads to greater offline political participation (Bode, Vraga, Borah, & Shah, 2014; Gil de Zúñiga et al., 2014), and some find online and offline participation to be reciprocally reinforcing (e.g., Harlow & Harp, 2012; Vissers & Stolle, 2014). We found that the pathway leading from offline political activity to online participatory politics was statistically significant. The pathway from online participatory politics to offline political activity was also positive, but not statistically significant. Given the importance of better understanding the relationships between online and offline politics, in future work, it would be valuable to examine factors that might be responsible for these relationships. For example, Kim and colleagues (2017) find that the nature of the relationship between online and offline political activity varies with respect to the age of the youths who are involved.

In sum, our findings provide strong support for the premise that FD and ID online activity foster political participation and this highlights the political significance of weak ties as embodied in large social networks. In doing so, this study helps to deepen our understanding of ways that common forms of engagement with social media can influence youth political development and participation in the digital age.

Supplemental Material

Supplemental data for this article can be accessed on the publisher's website at https://doi.org/110.1080/10584609.2018.1426662

Notes

1. Many of the survey questions changed between the first and second waves of the survey; consequently, this study draws upon second- and third-wave data only, in order to ensure that observed changes over time do not merely reflect the effects of changes in measurement.

2. For a full description of the probability-based methods used by GfK to construct and maintain a representative Internet panel, see http://www.knowledgenetworks.com/ganp/reviewer-info.html.

3. The Wave 2 survey also included a small sample ($N = 17$) that was drawn by contacting KP members who were African-American and at least 55 years old. These panelists were asked whether they had any grandchildren who were in the target group (African-American and 15 to 17 years old); if so, one eligible grandchild was selected to complete the survey.

4. Respondents who had left GfK's online panel in the interim and had specifically asked not to be contacted to participate in any future surveys were excluded.

5. Specifically, we employed the lavaan package (version 0.5–23; Rosseel, 2012), implemented within R (version 3.4.1), to estimate each model.

6. The results of these measurement models can be found in supplemental Appendix B.

7. In order to create the interaction terms, the indicators of interest-driven and friendship-driven online activity had to be treated as numeric variables rather than ordinal scales. Doing so did not alter the substantive or statistical significance of the estimated relationships of either form of online activity on either of the political engagement variables.

8. Full results of these longitudinal structural equation models, including control variables, can be found in supplemental Appendix C.

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ORCID

Benjamin Bowyer http://orcid.org/0000-0002-7696-9956

References

Anduiza, E., Cristancho, C., & Sabucedo, J. M. (2013). Mobilization through online social networks: The political protest of the indignados in Spain. *Information, Communication & Society*, *17*(6), 750.

Best, S. J., & Krueger, B. S. (2005). Analyzing the representativeness of Internet political participation. *Political Behavior*, *27*(2), 183–216.

Bode, L., Vraga, E., Borah, P., & Shah, D. V. (2014). A new space for political behavior: Political social networking and its democratic consequences. *Journal of Computer-Mediated Communication*, *19*(3), 414–429.

Bond, R. M., Fariss, C. J., Jones, J. J., Kramer, A. D. I., Marlow, C., Settle, J. E., & Fowler, J. H. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature*, *489*(7415), 295–298.

Boulianne, S. (2009). Does Internet use affect engagement? A meta-analysis of research. *Political Communication*, *26*(2), 193–211.

Boulianne, S. (2015). Social media use and participation: A meta-analysis of current research. *Information, Communication & Society*, *18*(5), 524–538.

Cohen, C., Kahne, J., Bowyer, B., Middaugh, E., & Rogowski, J. (2012). *Participatory politics: New media and youth political action* [YPPSP research report]. Retrieved from http://ypp.dmlcentral.net/publications/107

Dale, A., & Strauss, A. (2009). Don't forget to vote: Text message reminders as a mobilization tool. *American Journal of Political Science*, *53*(4), 787–804.

Dalton, R. (2008). Citizenship norms and the expansion of political participation. *Political Studies*, *56*(1), 76–98.

Earl, J. (in press). Technology and social media. In D. A. Snow, S. A. Soule, H. Kriesi, & M. Holly (Eds.), *The Blackwell companion to social movements* (2nd ed.). Malden, MA: Blackwell.

Ekström, M., & Östman, J. (2015). Information, interaction, and creative production: The effects of three forms of Internet use on youth democratic engagement. *Communication Research*, *42*(6), 796–818.

Ekström, M., & Shehata, A. (2016). Social media, porous boundaries, and the development of online political engagement among young citizens. *New Media and Society*, 1–20. doi:10.1177/1461444816670325

Emmer, M., Wolling, J., & Vowe, G. (2012). Changing political communication in Germany: Findings from a longitudinal study on the influence of the Internet on political information, discussion and the participation of citizens. *Communications*, *37*(3), 233–252.

Enjolras, B., Steen-Johnsen, K., & Wollebaek, D. (2013). Social media and mobilization to offline demonstrations: Transcending participatory divides? *New Media & Society*, *15*(6), 890–908.

Gibson, R., & Cantijoch, M. (2013). Conceptualizing and measuring participation in the age of the Internet: Is online political engagement really different to offline? *Journal of Politics*, *75*(3), 701–716.

Gil de Zúñiga, H., Jung, N., & Valenzuela, S. (2012). Social media use for news and individuals' social capital, civic engagement and political participation. *Journal of Computer-Mediated Communication*, *17*(3), 319–336.

Gil de Zúñiga, H., Molyneux, L., & Zheng, P. (2014). Social media, political expression, and political participation: Panel analysis of lagged and concurrent relationships. *Journal of Communication*, *64*(4), 612–634.

Gil de Zúñiga, H., & Valenzuela, S. (2011). The mediating path to a stronger citizenship: Online and offline networks, weak ties, and civic engagement. *Communication Research*, *38*(3), 397–421.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360–1380.

Hargittai, E., & Shaw, A. (2013). Digitally savvy citizenship: The role of Internet skills and engagement in young adults' political participation around the 2008 presidential election. *Journal of Broadcasting & Electronic Media*, *57*(2), 115–134.

Harlow, S., & Harp, D. (2012). Collective action on the Web. *Information, Communication & Society*, *15*(2), 196–216.

Hirzalla, F., & Zoonen, L. V. (2011). Beyond the online/offline divide: How youth's online and offline civic activities converge. *Social Science Computer Review*, *29*(4), 481–498.

Hooghe, M. (2014). Defining political participation: How to pinpoint an elusive target? *Acta Politica*, *49*(3), 338–341.

Ito, M., Baumer, S., Bittanti, M., Boyd, D., Cody, R., Stephenson, B. H.,… Tripp, L. (2009). *Hanging out, messing around, and geeking out*. Cambridge, MA: MIT Press.

Jenkins, H. (2009). *Confronting the challenges of participatory culture: Media education for the 21st century*. Cambridge, MA: MIT Press.

Jenkins, H., Shresthova, S., Gamber-Thompson, L., Kligler-Vilenchik, N., & Zimmerman, A. (2016). *By any media necessary: The new youth activism*. New York, NY: NYU Press.

Kahne, J., Lee, N. J., & Feezell, J. T. (2013). The civic and political significance of online participatory cultures and youth transitioning to adulthood. *Journal of Information Technology and Politics*, *10*, 1–20.

Kahne, J., Middaugh, E., & Allen, D. (2015). Youth, new media, and the rise of participatory politics. In D. Allen & J. S. Light (Eds.), *From voice to influence: Understanding digital citizenship in the digital age* (pp. 35–55). Chicago, IL: The University of Chicago Press. Retrieved from http://ypp.dmlcentral.net/publications/203

Kim, Y., Russo, S., & Amnå, E. (2017). The longitudinal relation between online and offline political participation among youth at two different developmental stages. *New Media & Society*, *19*(6), 899.

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.

Lee, N.-J., Shah, D. V., & McLeod, J. M. (2013). Processes of political socialization: A communication mediation approach to youth civic engagement. *Communication Research*, *40*(5), 669–697.

Lenhart, A. (2015). *Teens, social media and technology overview 2015*. Retrieved from http://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/

Lilleker, D. G., & Koc-Michalska, K. (2017). What drives political participation? Motivations and mobilization in a digital age. *Political Communication*, *34*(1), 21–43.

Little, T. D. (2013). *Longitudinal structural equation modeling*. New York, NY: Guilford Press.

McAdam, D., & Paulsen, R. (1993). Specifying the relationship between social ties and activism. *American Journal of Sociology*, *99*(3), 640–667.

McFarland, D. A., & Thomas, R. J. (2006). Bowling young: How youth voluntary associations influence adult political participation. *American Sociological Review*, *71*(3), 401–425.

Nie, N. H., Junn, J., & Stehlik-Barry, K. (1996). *Education and democratic citizenship in America*. Chicago, IL: University of Chicago Press.

Oser, J., Hooghe, M., & Marien, S. (2013). Is Online Participation Distinct from Offline Participation? A Latent Class Analysis of Participation Types and Their Stratification." *Political Research Quarterly*. *66*(1), 91–101.

Pasek, J., More, E., & Romer, D. (2009). Realizing the social Internet? Online social networking meets offline civic engagement. *Journal of Information Technology & Politics*, *6*(3–4), 197–215.

Perrin, A. (2015). *Social media usage: 2005–2015*. Retrieved from http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/

Plutzer, E. (2002). Becoming a habitual voter: Inertia, resources, and growth in young adulthood. *American Political Science Review*, *96*(1), 41–56.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1–36.

Schlozman, K. L., Verba, S., & Brady, H. E. (2010). Weapon of the strong? Participatory inequality and the Internet. *Perspectives on Politics*, *8*(2), 487–509.

Shah, D. V., Cho, J., Eveland, W. P., Jr., & Kwak, N. (2005). Information and expression in a digital age: Modeling Internet effects on civic participation. *Communication Research*, *32*(5), 531–565.

Smith, E. (1999). The effects of investments in the social capital of youth on political and civic behavior in young adulthood: A longitudinal analysis. *Political Psychology*, *20*(3), 553–580.

Theocharis, Y., & Quintelier, E. (2016). Stimulating citizenship or expanding entertainment? The effect of Facebook on adolescent participation. *New Media & Society*, *18*(5), 817–836.

Valenzuela, S. (2013). Unpacking the use of social media for protest behavior: The roles of information, opinion expression, and activism. *American Behavioral Scientist*, *57*(7), 920–942.

Valenzuela, S., Kim, Y., & Gil de Zúñiga, H. (2012). Social networks that matter: Exploring the role of political discussion for online political participation. *International Journal of Public Opinion Research*, *24*(2), 163–184.

van Deth, J. W. (2014). A conceptual map of political participation. *Acta Politica*, *49*(3), 349–367.

Verba, S., Schlozman, K. L., & Brady, H. E. (1995). *Voice and equality: Civic voluntarism in American politics*. Cambridge, MA: Harvard University Press.

Vissers, S., Hooghe, M., Stolle, D., & Maheo, V. A. (2012). The impact of mobilization media on off-line and online participation: Are mobilization effects medium-specific? *Social Science Computer Review*, *30*(2), 152–169.

Vissers, S., & Stolle, D. (2014). Spill-over effects between Facebook and on/offline political participation? Evidence from a two-wave panel study. *Journal of Information, Technology, and Politics*, *11*(3), 259–275.

Wojcieszak, M. E., & Mutz, D. C. (2009). Online groups and political discourse: Do online discussion spaces facilitate exposure to political disagreement? *Journal of Communication*, *59*, 40–56.

Xenos, M., Vromen, A., & Loader, B. D. (2014). The great equalizer? Patterns of social media use and youth political engagement in three advanced democracies. *Information, Communication & Society*, *17*(2), 151–167.

Zhang, W., Seltzer, T., & Bichard, S. L. (2013). Two sides of the coin: Assessing the influence of social network site use during the 2012 U.S. presidential campaign. *Social Science Computer Review*, *31*(5), 542–551.