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Dual Impact of Tie Strength and Visibility of Action on Political Participation Types

SIMIN MICHELLE CHEN♦
Brock University, Canada

This study examines the combined effects of visibility of action and tie strength with digitally enabled social movement organizations on mobilizing supporters for high- and low-cost political action Survey findings from this study show that different dimensions of tie strength interact with cost and visibility of political action differently to influence future participation. The findings contribute to our theoretical understanding of the underlying factors that contribute to social media's relationship with political participation and have practical implications for social movement organizers seeking to mobilize online supporters for different types of political action.

Keywords: digitally enabled movements, social media, political participation, tie strength

There is hardly a social movement organization today that does not use social media as a key mobilizing tool precisely because social media sites that are designed to help their users build and maintain social connections with one another do so through features that facilitate the mobilization of users for collective action. The varying successes of digitally enabled social movements to mobilize individuals for collective action have continued to draw the attention of communication scholars. Yet, despite the growing consensus that activities on social media predict and motivate political participation (see Bastos, Mercea, & Charpentier, 2015; Boulianne, 2015; Hsiao, 2018), the role of social media in sustaining social movements is still a contested topic (Kavada, 2015; van Laer, 2010)

Even though there has been academic interest in social ties as an explanatory factor in promoting collective action through social media, results from these studies have remained inconclusive. Previous studies have focused on either weak ties (see Chan, 2016; Choi & Shin, 2016; Tang & Lee, 2013; Tsatsou, 2018) or strong ties (see Nekmat, Gower, Gonzenback, & Flanagin, 2015) but rarely both. In recent years, there has been a growing body of research that investigates the different effects of both weak and strong ties on collective action within a social media setting (see Ai & Zhang, 2019; Valenzuela, Correa, & Gil de Zúñiga, 2018).

However, it is still difficult to draw conclusions about the impact of social ties on collective action. Firstly, this could be because a common practice in the field is to rely on social structures or other proxies to identify tie strength rather than measure ties directly. For instance, Ellison, Steinfield, and Lampe (2007) found that Facebook creates weak tie networks due to Facebook groups whereas Valenzuela and colleagues

Simin Michelle Chen: mchen@brocku.ca
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(2018) conceptualized Facebook as having strong ties. Yet, most individuals have a mix of strong and weak ties on Facebook. This is supported by You and Hon (2019), who found evidence of weak ties (e.g., following Facebook pages satisfies information-seeking needs) and strong ties (e.g., maintaining virtual social relationships satisfies emotional support needs) on Facebook.

Secondly, while there has been scholarly attention on protest participation, there is scant research on different types of action. For instance, some studies have measured participation in terms of civic participation (see Choi & Shin, 2016; Gil de Zúñiga & Valenzuela, 2011) whereas others have measured participation as both political and civic participation (see Gil de Zúñiga, Jung, & Valenzuela, 2012; Valenzuela, Park, & Kee, 2009). Yet, the operationalization of participation is important because different amounts of perceived costs associated with a political activity affect participation behavior. As van Stekelenburg (2013) explained, some forms of political action involve little cost or risk such as signing a petition compared with protesting or occupying a site. This sentiment is echoed by Hsiao (2018), who argued that compared with other types of political participation, street protests involve high personal costs as protesters often risk incurring bodily harm. Therefore, whether social movement supporters perceive the political activity as incurring a high or low personal cost will undoubtedly impact their intention to participate in the activity.

Lastly, the existing research mentioned above suggests that social media inform and motivate people toward collective action because of the interaction between social connections on social media and the features that broadcast users' actions to their personal social networks. The visibility of action, that is, making users' political actions public to their social networks, has been shown to influence users' engagement in collective action through social influence (Haenschen, 2016; Jeong & Lee, 2013; Margetts, John, Hale, & Yasseri, 2016). Through features such as "liking," tagging, sharing, and commenting, social media users can create connections and interact with activists outside their personal social networks, and that can increase users' exposure to political activities and knowledge about politics (Hsiao, 2018).

Importantly, social media features publicize individualized political behavior and impact decisions about whether and when to participate in collective action (Margetts et al., 2016). By providing social information about the participatory behavior of others, social media can impact the perceived benefits of participating in a cause (Margetts et al., 2016). The same features that provide social information about the political behavior of others also allow users to broadcast their actions to their social media networks. Drawing from social movement research where social ties are important for mobilizing participants and social media studies where the publicness of one's actions has an impact on political participation, this study adds to the field by examining the combined effects of tie strength, visibility of action, and cost of action on political participation.

Effects of Social Connections

Social relationships are the catalyst for information diffusion, and trust built through these relationships provides individuals with the motivation for collective action (Klandermans, van der Toorn, & van Stekelenburg., 2008; Liu, 2016). Information related to social movements can be quickly diffused online as social movement organizers use their social connections to deliver calls to action based on their relationship with supporters (Liu, 2016). Importantly, the propensity to be mobilized is dependent on users' social connections on social media (Clark, 2016; Passy & Monsch, 2014; Tang & Lee, 2013). People who know someone active within the movement are more likely to participate in collective action on behalf of the movement (Klandermans, 1997). In fact,

research has shown that knowing social movement supporters is one of the main predictors of political participation (McAdam, 1982; McAdam & Paulsen, 1993; Schussman & Soule, 2005).

This is because through organizational membership, organizers and supporters can foster social ties, which can be activated for mobilization (Klandermans, 1997; McAdam, 1982; Schussman & Soule, 2005). Social ties are often characterized as strong or weak depending on a combination of four dimensions that make up tie strength—reciprocity, emotional intensity, intimacy, and duration of the relationship (Granovetter, 1973). This characterization is important because weak/strong tie strengths have different effects on collective action. By identifying with a social movement group, individuals can foster strong ties through emotional attachment and trust to those involved in the movement, which predicts intention to participate in collective action that requires high costs (Saunders, Grasso, Olcese, Rainsford, & Rootes, 2012; van Zomeren, Postmes, & Spears, 2008). In fact, Civil Rights movement scholars have documented the importance of strong ties in connecting individuals with wider networks of activists within the movement to mobilize them for collective action (Chafe, 1980; McAdam, 1982; Morris, 1984; Ransby, 2003).

Although ties to social movement groups, typically established through organizational membership, have been consistent in the social movement literature, the traditional idea of organizational membership requires rethinking with contemporary grassroots organizers' use of social media. Unlike in the past where becoming a member required more commitment through attending in-person meetings to build social bonds, memberships in contemporary social movement organizations are often forged with a single click by joining online groups. Hence, the idea of membership in contemporary grassroots organizations, enabled by Facebook groups, is a looser concept than traditional forms of membership (Margetts et al., 2016). As such, much is still unknown about the effectiveness of digitally enabled organizations that exist mostly online in creating strong ties via emotional intensity and trust with their online supporters.

While strong ties are essential in mobilizing supporters for high-cost collective action, weak ties act as an information bridge, providing and disseminating information among diverse social groups (Krackhardt, 1992). For instance, Tsatsou's (2018) study of the Mayflower Movement in Taiwan suggested the importance of weak ties in disseminating information related to the movement, enabling student activists to quickly organize because the information was not confined to existing groups of student activists but was spread beyond those groups. Other studies have found Facebook to have both strong and weak ties. For instance, You and Hon (2019) found that the different strengths of social ties on Facebook groups contribute differently to collective action. Specifically, people join Facebook groups with which they share similar interests to get information (e.g., weak ties), and interacting with other Facebook group members helps build trusting and reciprocal relationships (e.g., strong ties).

While it is common for scholars to assign tie strength based on platform type or social structure, Marsden and Campbell (1984) postulated that relationship types, classified as group memberships, friendships, or kinships are simply predictors of tie strength. In their study, Marsden and Campbell (2012) found that people's relationships were only modestly associated with tie strength. The assumption that kinship relations are always strong, friendships are intermediate, and shared affiliation relationships are weak masked the variations in tie strengths that exist within these relationship types. In fact, scholars who cautioned against relying solely on relationship type or familial structure to determine tie strength point to the emotional aspect of tie strength that may have been overlooked or assumed based on the type of relationship (Gilbert, 2012; Marsden & Campbell,

1984, 2012). Consequently, Marsden and Campbell (1984) asserted that direct measures of tie strength may provide a more nuanced understanding of the different aspects of social ties that affect mobilization for different types of collective action, which is one of the goals of this study.

Effects of Visibility of Action and Social Ties: Social Pressure and Norms

While the strength of ties with supporters of social movements and the cost of political activity can both have an impact on participation intention, the technological affordance of social media sites can also have an impact on participation. Social media features that help users maintain and build social relationships share one thing in common—they make political actions visible to users' connections on social media in ways that are not possible in the offline world (Margetts et al., 2016). The public nature of action, a main affordance of social media platforms, impacts the relationship between social ties and participation in collective action; and on social media, such social information is abundant.

While current communication research has shown the importance of visibility of action on social media in helping spread mobilizing messages to others within and beyond one's social network, there is scant research that examines its impact on individual behavior. Limited research in the field has suggested its importance in influencing behavior (Margetts et al., 2016). For instance, Jeong and Lee (2013) found that social media sites were more effective in increasing participants' intention to join a cause than websites. Their findings suggest that the pressure to present a positive image to people they know on social media is a strong motivating factor to induce them to join causes on social media. Similarly, Haenschen (2016) found that social media can influence participation and turnout rates beyond traditional face-to-face methods.

Haenschen's (2016) study built on and supported previous research in voting behavior where social pressure was found to be influential in impacting political participation (see Gerber, Green, & Larimer, 2008, 2010). In an experiment conducted by them, Gerber and colleagues (2010) found that making a person's behavior public or threatening to do so exerted tremendous social pressure. When people expect their political actions to be visible to the people they know, they become more likely to abide by the social norms of their community (Gerber et al., 2008). Gerber and colleagues (2008) discovered that the more social pressure one is exposed to, the more likely the individual will participate in accordance with social norms even when the individual was not predisposed to participate in the first place. Hence, people trying to avert shame or who seek the approval of those in their social groups will be motivated to behave according to group norms.

Findings from Haenschen (2016) and Jeong and Lee (2013) suggest that the influence of online social circles can have an impact on behavior because participation in political actions emphasizes social norms within the community. When users know that their activities will be seen by others within their community, they feel pressured to maintain or portray a positive image in the presence of their social network on social media (Cotterill, John, & Richardson, 2013; Jeong & Lee, 2013; Margetts et al., 2016; van Stekelenburg, 2013). In the context of collective action, people may feel ashamed or proud if they participate in collective action for a cause, depending on whether the social groups they belong to disapprove of or support the type of political action for the cause.

As such, the perception of what people important to them may think about their participation in collective action can affect behavioral intention. Within a social media environment, one of the main ways

individuals learn about the social norms of their online social circle is through actions performed by others on social media. Online actions performed by individuals' social ties such as commenting, liking, and sharing are often publicized to the individual on social media, allowing the individual to get an idea of behaviors that are supported by their social ties. For instance, liking a comment or sharing a post, with or without commentary, is often seen as publicly declaring one's support for a cause or the behaviors associated with the cause (see Clark, 2016).

The public nature of online actions on social media signals to online members the social norms of their group, in turn pressuring individuals to perform offline actions that are perceived as socially desirable within their network, especially when they see others in their network participating in the same actions (see Clark, 2016; Haenschen, 2016). And the pressure to participate in collective action may be even more pronounced if the individual knows that their participation will be publicized to their social ties (see Cialdini & Goldstein, 2004; Gerber et al., 2008, 2010; Haenschen, 2016).

Although visibility of action is an integral feature of social media sites, its effect on collective action remains largely under-examined in extant literature. Examining social media through the perspective of visibility of action, which is a key affordance of social media, can better illuminate the relationship between social movements and social media. This research measures the different components of social ties to identify if there are aspects of tie strength that correlate with political participation because extant research has so far suggested that participation may require different strengths of social ties for mobilization to occur based on levels of perceived risks/costs involved. It is possible that for activities with low personal costs, different aspects of tie strength such as reciprocity and duration may be more important because frequent sharing of information and repeated exposure to mobilizing messages can influence behavior, particularly for low-cost activities. However, for activities that entail high personal risks, trust and emotional closeness may be more important to overcome resistance to participation. By measuring tie strength directly instead of categorizing them into weak or strong ties, it becomes possible to identify aspects of tie strength that matter for high- and low-cost activities, which can inform the communication strategies of organizations using social media for organizing purposes.

Hence, this study seeks to provide further empirical research on the *dual impact* of visibility of action and social ties on different costs of collective action within a social media environment. Particularly, this study seeks to investigate whether the *interaction* between the public nature of one's collective action and tie strength has an impact on intention to participate in high- and low-cost political actions:

H1: *Strength of ties (trust, closeness, reciprocity, and duration) with cause supporters will have a positive effect on intention to participate in high-cost and low-cost political actions if individuals think their actions will be visible to cause supporters compared with when they think their actions are not visible.*

Method

Although grassroots organizers use different types of social media channels to mobilize their supporters, this study focused on the role of Facebook in sustaining and organizing a movement because of its features that facilitate relationship building. Facebook pages enable social movement organizers to build a community of social support and solidarity. For instance, the Women's March Facebook page allows users to find and forge new social ties with other supporters. The features on the Facebook page facilitate social

interactions with social movement organizers, which play an important role in helping group members learn about the social norms of the group.

To measure the effects of tie strength and visibility of action on participation intention in different types of political actions, an online survey was sent to Facebook page supporters of a Women's March chapter from the Midwest. Page supporters are individuals who have either liked or followed the chapter's Facebook page. The recruitment message was pinned to the top of the chapter's Facebook page and was boosted. A total of 1,020 people who liked or followed the chapter's Facebook page participated in the survey.

Dependent Variable

Intention to Participate in Collective Action

I measured collective action in terms of low and high levels of personal costs involved in the collective action. Postmes and Brunsting (2002) distinguished among different types of collective action based on whether the action is individualistic, collectivistic, persuasive, or confrontational. Another way of thinking about collective action can be the amount of time, finances, effort, and risk required to perform a political activity. I first identified the types of political actions the chapter engaged in. I then asked survey participants to indicate the amount of personal cost they associated with signing petitions, calling representatives, donating, voting, event volunteering, marching/rallying, and boycotting, with 1 = "low cost," 2 = "moderate cost," and 3 = "high cost," which were later reduced to 1 = "low cost" and 2 = "high cost."

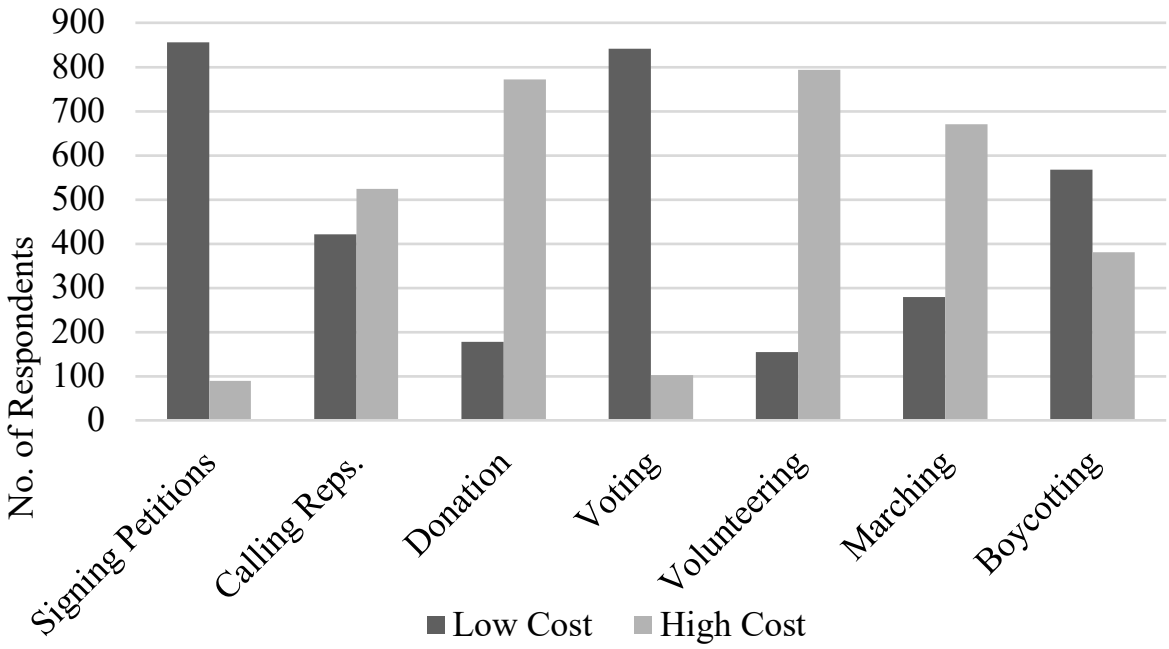

Figure 1. Perceived cost of action.

I then asked participants to rate on a 7-point scale the likelihood of participating in each of the same list of actions in the next 12 months, with 1 = "extremely unlikely," 6 = "extremely likely," and 7 = "undecided."

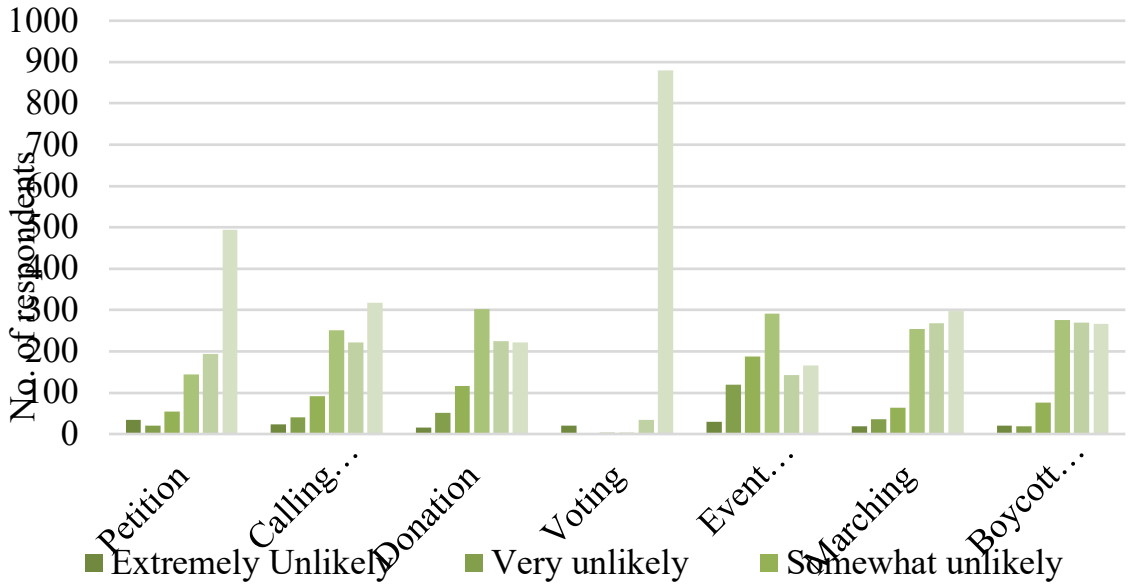

Figure 2. Likelihood of participation.

Independent Variables

Visibility of Action

To measure whether the knowledge of their political actions becoming public influences participation intention in future collective action, respondents were asked to imagine that their acts of activism were visible to all supporters of the chapter's Facebook page. They were asked to rate on a 7-point Likert scale that ranged from 1 = "very unlikely" to 7 = "very likely" their likelihood of participating in a low-cost activity if their actions were made public to Facebook page supporters (M = 2.53, SD = 1.47). They were also asked about the likelihood of participating in the same low-cost activity if their actions were private from supporters of the Facebook page (M = 2.29, SD = 1.27).

To measure how visibility affected participation intention in high-cost activity, respondents were also asked whether they would participate in a high-cost activity if their actions were made public to supporters of the Facebook page (M = 3.41, SD = 1.72). Similarly, they were asked about the likelihood of participating in the same high-cost activity if their actions were private from supporters of the Facebook group (M = 3.12, SD = 1.54). Lastly, respondents were asked about the extent to which they thought

supporters of the Facebook page would see their actions if they were made public by the organizers (M = 2.68, SD = 1.27).

Social Ties Measurement

To measure tie strength directly, I followed Granovetter's (1973) conceptualization of tie strength wherein tie strength is determined by "a combination of the amount of time, emotional intensity, intimacy, and reciprocal services that characterize the tie" (p. 1361). Furthermore, Krackhardt (1992) argued that while interaction and time are important indicators of tie strength, trust is needed to overcome resistance and uncertainty during times of social change or crisis. Therefore, taking into consideration the limitations of measuring tie strength solely on relationship types, I measured tie strength on its dimensions such as reciprocity, closeness, trust, and duration.

To measure reciprocity, survey respondents were asked to indicate their frequency of reciprocity (e.g., through comments/replies, likes/reactions) with other Facebook page supporters' posts, replies, or comments. They were also asked how often they read posts by other members of the Facebook page as well as their replies or comments. Respondents were also asked how often other Facebook page supporters interacted with (e.g., commented/replied, liked/reacted) their posts, replies, or comments. All three items were coded on a 7-point scale, with 1 = "never" and 7 = "more than once a day" (Cronbach's α = .76, M = 4.38, SD = 1.27).

To measure the level of closeness respondents felt toward the organization, they were asked to indicate how close (e.g., affection, attachment, or bond) they felt toward other Facebook page supporters. This item was coded on a 5-point scale ranging from 1 = "not at all close" to 5 = "extremely close." (M = 2.44, SD = 0.938). Trust is an important component of affect. Hence, respondents were also asked to indicate to what extent they trusted supporters of the Facebook page. This item was coded on a 5-point scale with 1 = "never" and 5 = "always" (M = 3.67, SD = 0.867).

To measure the duration of respondents' engagement with the chapter's Facebook page, they were asked to indicate the amount of time they typically spent reading posts, comments, or private messages made by the administrators of the Facebook page. They were also asked to indicate the amount of time they typically spent interacting with (e.g., by liking/reacting, commenting/replying, sharing) posts, comments, or private messages made by the administrators of the Facebook page. Both items were coded on a 7-point scale with 1 = "no time at all" and 7 = "more than 30 minutes" (Cronbach's α = .68, M = 2.25, SD = 0.92).

I performed an exploratory factor analysis using Oblimin rotation based on the rationale that dimensions of tie strength are correlated with one another. Results from Bartlett's test of sphericity were statistically significant at a $p < .01$ level, indicating that the correlations were sufficiently large enough to conduct an exploratory factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was .733, above the recommended threshold of .6 (see Kaiser, 1974). Since both assumptions were met, principal axis factoring was used to extract three factors that met Kaiser's eigenvalue greater than 1 criterion (see Fabrigar, MacCallum, Wegener, & Strahan, 1999). These three factors explained about 71.15% of the

cumulative variance. These three dimensions of tie strength aligned with Granovetter's (1973) and Krackhardt's (1992) concept of tie strength where the strength of a tie is determined by extent of reciprocity, intensity of affection, and time. Although Cronbach's alpha scores for affection and time were below .7, their low scores were attributed to the lack of variability in results since there were only two question items for each dimension. Since affection and time as dimensions of tie strength were both conceptually supported, and it is not the goal of this research to create a scale for tie strength, both measurements of affection and time were included in the analysis despite their low alpha scores. As such, I created three tie strength indices (reciprocity, affect, and duration) by averaging the responses to the questions that comprised each of the three factors.

Table 1. Summary Statistics and Factor Analysis Results for Tie Strength.

			Factor Loadings		
	Mean	SD	(1) Reciprocity	(2) Time	(3) Affection
Reciprocity (Cronbach's α = .759)	4.38	1.27			
How often do you *interact* with other FB page members' posts, replies, or comments?	4.71	1.45	.813	−.017	−.036
How often do other members *interact* with your posts, replies, or comments on the FB page?	3.07	1.92	.740	−.013	.048
How often do you *read* posts, replies, or comments made by other members on the FB page?	5.34	1.19	.644	.031	.005
Duration (Cronbach's α = .675)	2.25	0.92			
How much time do you typically spend *reading* posts, comments, or private messages made by the WMMN FB page administrator?	2.63	1.14	.024	.758	−.053
How much time do you typically spend *interacting* with posts, comments, or private messages made by the WMMN FB page administrator?	2.01	.955	−.030	.694	.060
Affect (Cronbach's α = .506)	3.06	.74			
In general, how *close* (e.g. affection, attachment, bond) do you feel toward members of the WMMN FB page?	2.54	.926	.132	.057	.562
In general, how often can you *trust* members of the WMMN FB page?	3.71	.825	−.049	−.016	.570

Notes. Affection scale was on a 5-point Likert scale, whereas reciprocity and duration scales were both on a 7-point Likert scale. FB = Facebook, WMMN = Women's March Minnesota.

Control Variables

Perceived Social Norms

Adapting from Fishbein and Ajzen (2010), respondents were asked how much they thought people important to them on Facebook would approve or disapprove of their participation in both low-cost and high-cost activities. These items were coded on a 7-point Likert scale ranging from 1 = "strongly disapprove" to 7 = "strongly approve" (Cronbach's α = .862, M = 5.60, SD = 1.09).

Prior Involvement in Political Participation

According to van Zomeren and colleagues (2008), researchers of collective action often rely on proxies for collective action rather than actual behavior. Hence, in this study respondents were asked to indicate whether they had participated in political activities in the last 12 months that ranged from attending a public hearing to demonstrations and voting in political elections. The items were coded such as 1 = "yes" and 0 = "no." A composite index was created by taking the sum of all the political activities they were engaged in during the last 12 months and used in the analyses (M = 6.03, SD = 1.63).

Need to Belong

Research has shown that people form social connections quickly under most situations and try to maintain stable relationships and avoid the dissolution of existing connections when possible (Baumeister & Leary, 1995; Malone, Pillow, & Osman, 2011). Supporters' individual differences in their need to belong affect behavior because the higher the need to belong, the more likely people are concerned with others' evaluation and acceptance of them. Therefore, they will more likely comply with behaviors that are expected of them to maintain or obtain good standing within their social networks (Leary, Kelly, Cottrell, & Schreindorfer, 2013). Respondents were asked a set of 10 questions that measured an individual's need to belong on a 7-point Likert scale developed by Leary and colleagues (2013). Individual items were coded as 1 = "strongly disagree" and 7 = "strongly agree" and exhibited high reliability (Cronbach's α = .814, M = 3.94, SD = 0.87). A composite score to measure the respondents' need to belong was created by taking the mean of all 10 items and was used in the analyses.

Demographics

Studies have shown that individuals with higher income and educational background are more politically involved (Kelly & Breinlinger, 1995; Schussman & Soule, 2005) and use digital media for political purposes (van Laer, 2010). Hence, respondents were asked to indicate their highest level of education with 1 = "less than high-school diploma" and 5 = "graduate degree" (M = 5.07, SD = 1.07), their household income for the past 12 months before taxes with 1 = "under $5,000" and 29 = "more than $250,000" ($M$ = 20.13, Mdn = $85,000–$89,999, SD = 6.94). Schussman and Soule (2005) have also found that liberals are more likely to engage in certain political activities than non-liberals. Respondents were also asked where they would place themselves on the political scale that ranged between liberal (97%), moderate (2%), and

conservative (1%). Respondents were also asked what geographical region best described where they currently lived, with 1 = "major city (47%)," 2 = "suburbs (34%)," and 3 = "rural town (19%)."

Statistical Analysis

I predicted in my hypothesis that visibility of action would have a different impact on intention to participate in *high*- and *low*-cost collective action, depending on the visibility of the action. Specifically, the higher the scores for affect, interaction, or duration, the higher the intention to participate in collective action when participants think their action is visible/public compared with when they think their action is nonvisible/private (H1). In other words, participants were asked about their intention to participate in both high and low costs of action when their actions were both publicly or privately visible (e.g., high_public, low_public, high_private, low_private). To examine whether visibility influenced individuals' intention to participate in collective action based on their tie strength with cause supporters on social media, a mixed effects model with both fixed and random effects was performed. The impact of respondents on the outcome was modeled as a random effect with a random intercept, and predictors were included as fixed effects (Garson, 2013; Snijders, 2005).

Since visibility and cost of action groups were predictor variables determined by research design, and each respondent had one value of tie strength across all four groups, tie strength, visibility, and cost of action were all modeled only as fixed effects. As individuals' need to belong, injunctive norms, and prior political involvement were believed to have an impact on their intention to participate, these variables were also included in the model as control variables. Since there was little variability in the demographics of supporters, demographic variables were excluded from the analysis.

To assess the effects of visibility on participation intention, I dummy coded cost variables into low cost = 0 and high cost = 1. To test my assumptions, I examined the interaction between tie strength and visibility on intention to participate first for activities that were perceived to be low cost, and then for activities that were perceived to be high cost. To answer my hypothesis, I first examined the main effect of visibility and tie strength for low-cost activities and high-cost activities separately (M1). I then added the interaction effect to test my hypothesis (M2). I conducted these two analyses separately for each of the measures of tie strength.

Low-Cost Activities

Trust

The intention to participate in low-cost political action was .309 ($p < .001$) based on the trust dimension of tie strength. This means that for every 1-unit increase in average trust scores toward WMMN supporters, the intention to participate in low-cost action increased by .309. To examine the effects of visibility and tie strength on intention to participate in low-cost action, the interaction term trust × visibility was added to the model. The interaction was negative, but it was not statistically significant ($B = -.077$, $p > .05$).

Closeness

The intention to participate in low-cost political action was .286 ($p < .001$). When the interaction term closeness × visibility was added to the model, it was not statistically significant ($B = .0005$, $p > .05$).

Duration

The intention to participate in low-cost political action was .202 ($p < .001$). When the interaction term duration × visibility was added to the model, the intention to participate in low-cost action was lower when the action was private compared with when it was public at a significant level ($B = -.133$, $p < .05$). And the effect was significantly stronger for public activities than it was for private activities.

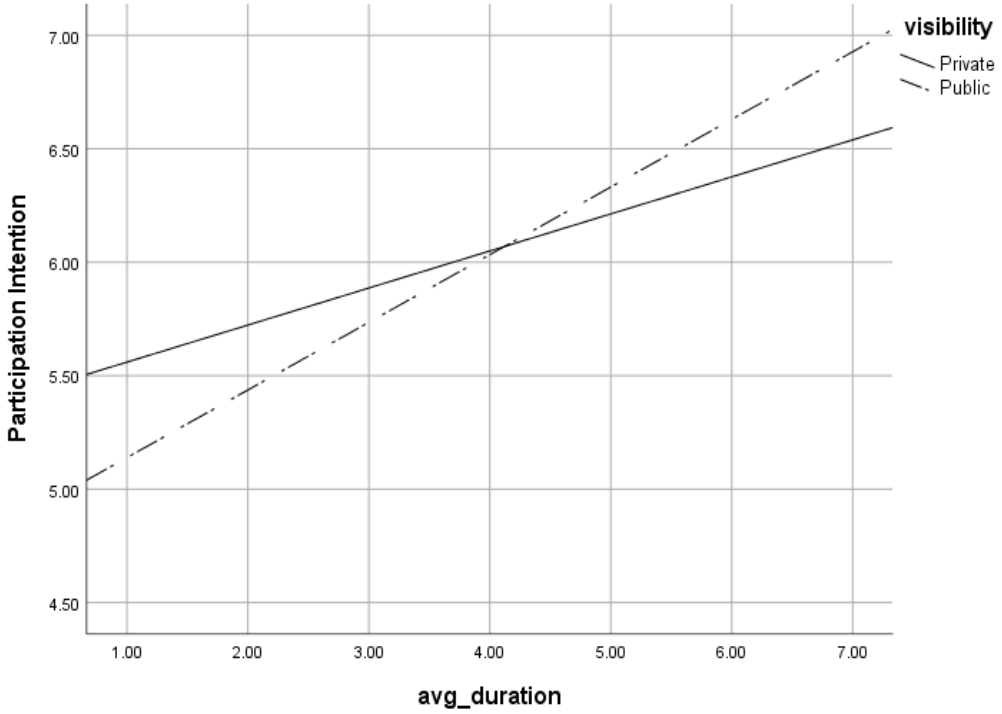

Figure 3. Likelihood of participation in low-cost activities—duration.

Reciprocity

The intention to participate in low-cost political action was .138 ($p < .001$). When the interaction term reciprocity × visibility was added to the model, this interaction was not significant ($B = -.044$, $p > .05$).

Table 2. Effects of Visibility on Tie Strength for Low-Cost Actions.

	M1	**M2**	**M1**	**M2**	**M1**	**M2**	**M1**	**M2**
Visibility	.259 (.0567)***	.544 (.255)*	.256 (.057)***	.255 (.162)	.183 (.060)**	.376 (.213)	.250 (.056)***	.556 (.151)***
Trust	.309 (.050)***	.349 (.061)***	—	—	—	—	—	—
Closeness	—	—	.286 (.047)**	.286 (.056)***	—	—	—	—
Reciprocity	—	—	—	—	.138 (.036)***	.161 (.034)***	—	—
Duration	—	—	—	—	—	—	.202 (.047)***	.270 (.056)***
Prior Political Participation	.095 (.027)***	.094 (.027)***	.073 (.027)**	.073 (.027)**	.063 (.030)*	.062 (.030)*	.090 (.027)**	.089 (.027)**
Belonging	−.129 (.049)**	−.129 (.049)**	−.112 (.049)*	−.112 (.049)*	−.089 (.052)	−.089 (.052)	−.129 (.050)**	−.130 (.050)*
Injunctive norm	.068 (.040)	.068 (.040)	.071 (.040)	.071 (.040)	.067 (.040)	.067 (.040)	.072 (.040)	.073 (.040)
Trust × Visibility	—	−.077 (.067)	—	—	—	—	—	—
Closeness × Visibility	—	—	—	.0005 (.061)	—	—	—	—
Reciprocity × Visibility	—	—	—	—	—	−.044 (.047)	—	—
Duration × Visibility	—	—	—	—	—	—	—	−.133 (.061)*
N	1297	1297	1299	1299	1065	1065	1297	1297

Notes. **p* < .05 ***p* < .01 *** *p* <.001. The coefficient for visibility shows the effect of visibility when the action is private; the coefficients for Trust × Visibility, Closeness × Visibility, Reciprocity × Visibility, and Duration × Visibility show the interaction effects of affect and visibility when the action is private.

High-Cost Activities

Trust

The intention to participate in low-cost political action was .315 ($p < .001$). However, when the interaction term trust × visibility was added to the model, the interaction was not significant ($B = -.106$, $p > .05$).

Closeness

The intention to participate in low-cost political action was .296 ($p < .001$). When the interaction term closeness × visibility was added to the model, the interaction was not significant ($B = .0003$, $p > .05$).

Duration

The intention to participate in high-cost political action was .115 ($p = .005$). When the interaction term duration × visibility was added to the model, the interaction was significant ($B = -.132$, $p < .05$).

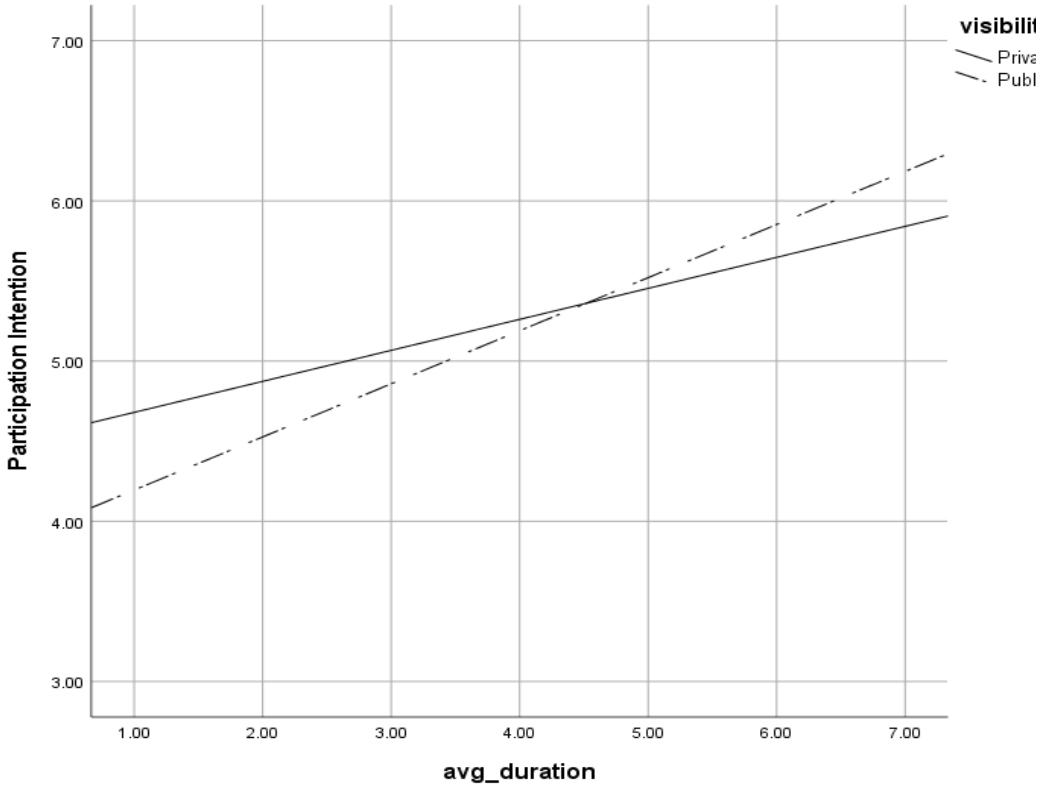

Figure 5. Likelihood of participation in high-cost activities—duration.

Reciprocity

The intention to participate in high-cost political action was .128 ($p < .05$). When the interaction term interaction × visibility was added to the model, the intention to participate in high-cost actions was lower when the actions were private compared with when it was public at a statistically significant level ($B = -.101$, $p < .05$).

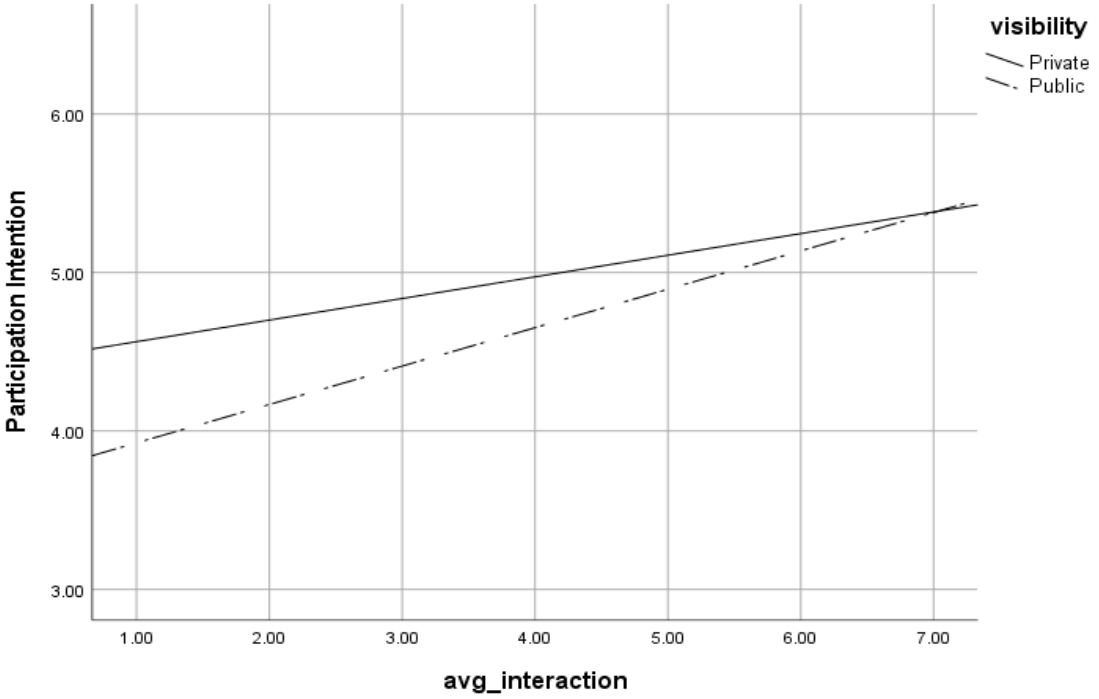

Figure 6. Likelihood of participation in high-cost activities—reciprocity.

Table 3. Effects of Visibility on Tie Strength for High-Cost Actions.

	M1	**M2**	**M1**	**M2**	**M1**	**M2**	**M1**	**M2**
Visibility	.285 (.055)***	.679 (.248)**	.294 (.055)***	.293 (.157)	.272 (.060)***	.717 (.218)**	.291 (.055)***	.596 (.149)***
Trust	.315 (.069)***	.367 (.076)***	—	—	—	—	—	—
Closeness	—	—	.296 (.064)***	.296 (.071)***	—	—	—	—
Reciprocity	—	—	—	—	.128 (.053)*	.179 (.058)**	—	—
Duration	—	—	—	—	—	—	.208 (.064)**	.275 (.071)**
Prior political participation	.176 (.037)***	.175 (.037)***	.150 (.037)***	.150 (.038)***	.124 (.043)**	.122 (.043)**	.167 (.038)***	.166 (.038)***
Belonging	−.139 (.068)*	−.139 (.068)*	−.126 (.068)	−.126 (.068)	−.123 (.075)	−.123 (.075)	−.143 (.069)*	−.144 (.069)*
Injunctive norm	.141 (.049)**	.141 (.049)**	.155 (.048)**	.155 (.048)**	.199 (.053)***	.199 (.053)***	.155 (.049)**	.154 (.049)**
Trust × Visibility	—	−.106 (.065)	—	—	—	—	—	—
Closeness × Visibility	—	—	—	.0003 (.060)	—	—	—	—
Reciprocity × Visibility	—	—	—	—	-	−.101 (.048)*	—	—
Duration × Visibility	—	—	—	—	—	—	—	−.132 (.060)*
N	1204	1204	1206	1206	999	999	1204	1204

Notes. *$p < .05$ **$p < .01$ *** $p < .001$. The coefficient for visibility shows the effect of visibility when the action is private; the coefficients for Trust × Visibility, Closeness × Visibility, Reciprocity × Visibility, and Duration × Visibility show the interaction effects of affect and visibility when the action is private.

Discussion

This study investigated whether the technological affordance of visibility on social media impacts future participation in collective action based on cost of action and tie strength. This study extends the theoretical framework of tie strength on political action by measuring the effect of visibility of action, a key affordance of social media, on high and low costs of political action. Survey findings showed the value of leveraging the affordance of visibility in the mobilization process, especially for supporters who had high levels of interaction and time spent with the chapter. For low-cost activities, as time spent with the chapter increased, the higher was the likelihood of participation when the action was public compared when when it was private. Similarly, as the time spent with the chapter and extent of interaction with supporters increased, the higher was the likelihood of participation in high-cost activities when the action was public compared with when it was private. The affect dimension of tie strength had no effect on intention to participate in both high- and low-cost activities regardless of the publicness of the action. Hence, H1 was partially supported.

These findings suggest that the perception of other members seeing their actions when organizers tagged and shared them on Facebook influences supporters' behavioral intention to participate in collective action. Hence, the strength of tie with the chapter matters for publicly visible actions. Specifically, duration and reciprocity with supporters have a stronger effect on participation intention when supporters think their actions are public compared with when they are private. This is in support of previous research (see Haenschen, 2016; Jeong & Lee, 2013; Margetts et al., 2016; Panagopoulos, 2010). Although this study measures a range of political actions, it supports previous research that found a positive relationship between strong ties and political participation (see Ai & Zhang, 2021; Valenzuela et al., 2018; You & Hon, 2019). Specifically, this study confirms previous speculation that emotional closeness nurtured on Facebook can foster participation in high-cost actions such as protest participation (Valenzuela et al., 2018).

While the survey results supported previous research on the positive impact of public visibility on political participation, they advance the field by demonstrating aspects of tie strength and cost of action in affecting this relationship. The survey findings show that high levels of reciprocity and duration had a positive and significant effect on the intention to participate in high-cost actions when supporters think their actions will be visible to other supporters. This could be because higher levels of reciprocity and duration with the chapter can acculturate supporters to the social norms of participating in collective action. By making political actions and beliefs visible to the network, social media increase exposure to the social norms of the network, thereby enabling the influence of social pressure on participation. Hence, the more active supporters are in the chapter, the higher the pressure of being norm compliant. This is because the social benefits or drawbacks (e.g., feelings of pride or shame) likely carry greater weight for active supporters than they may for non-active supporters.

While the survey results show that average time spent with the chapter predicted participation intention in low-cost actions, higher levels of interaction among supporters and more time spent with the chapter predicted participation in high-cost activities. Furthermore, visibility had a higher impact on intention to participate in low-cost collective actions than in high-cost collective actions. This could be because supporters may need more persuasion to participate in high-cost actions that involve greater risk, time, and

effort. Therefore, increased interaction among other supporters through discussions and virtual symbols of support (e.g., like/react) may be necessary to motivate them to participate in high-cost actions when they perceive their actions to be visible to the supporters of the Facebook chapter. Interestingly, trust and closeness had no statistical impact on high- and low-cost actions as visibility increased. This could be because trust and emotional attachment to supporters of the movement are enough to motivate behavior without the need for social pressure tactics.

These findings suggest that the organizers can increase mobilization for collective action when mobilizing messages are paired with social pressure tactics. As explained by Yardi and Boyd (2010), interactions and conversations with both like-minded individuals and different-minded individuals can strengthen supporters' identification with the movement. Passy and Monsch (2014) found that social interactions were more important in mobilizing individuals to participate in protests concerning controversial causes compared with mainstream ones. This suggests that people may require more persuasion via social interaction before participating in politically divisive causes. Conversational interactions are also critical in encouraging individuals to become active members rather than being mere sympathizers (Passy & Monsch, 2014).

As a platform meant to foster, maintain, and deepen existing connections, Facebook has features such as the comments section, react/like, and private messaging that provide digitally enabled organizations, who may otherwise have limited opportunities to build connections with supporters offline, the possibility of connecting with their supporters. Yet, there are technological limitations that can impact organizers' effectiveness in sustaining interest in the movement. For instance, Facebook algorithms distribute content based on the user's previous interactions on the social media site, posing a challenge for social movement organizations. Facebook's algorithmic control of content affects the visibility of content and can alter the types of content and messages social movement organizations post. The amount of interaction supporters have with the content can mean the difference between going viral and being buried in an algorithmic silence (Tufekci, 2017).

Algorithmic filtering also has a spillover effect that can hinder opportunities to interact with the chapter because social media algorithms often play a role in filtering which messages will be made visible and to whom (Dumitrica & Felt, 2020). Hence, supporters may not be aware of collective action opportunities that may allow them to establish bonds with the chapter outside of Facebook. Consequently, this calls into question the ability of digitally enabled grassroots organizations to sustain interest in a movement if they rely solely on social media. Unless organizations have the resources to pay for sponsored content to bypass algorithmic filtering, it will be difficult for them to build social bonds.

Limitations and Future Research

Although the survey results should be seen within the limits of the characteristics unique to this Midwest chapter of the Women's Movement, and even though the findings may not be representative of other social movement organizations, this study can still inform future social movement communication practices. Specifically, this study showed the importance of cultivating higher levels of reciprocity and time spent with the chapter to increase the impact of visibility on participation in high- and low-cost activities. This in turn will create a virtuous cycle because Facebook's "algorithm privileges interaction over recency,"

where posts that get "new replies" gain more exposure regardless of when they were posted (Kaun & Uldam, 2018, p. 2199). Even if feelings of trust and closeness might be difficult to engender on social media alone, encouraging interaction among supporters online and increasing time spent on the chapter's social media page can still have a positive effect on supporters' intention to participate in political actions through social pressure tactics.

However, relying on online interaction and relevant content to increase time spent on the Facebook page may not be enough to motivate participants to engage in high-cost action, unless those communication practices are paired with social pressure messages that leverage visibility of action. It must be noted that although the results have a p value of $<.05$, the larger standard errors mean these results should be understood with caution. Furthermore, as strengths of ties were measured separately, it is difficult to separate interaction effects and draw strong conclusions statistically, given the possibilities of confounding effects. Future research seeking to test interaction effects can get a bigger sample to sufficiently test these interaction effects across different social movements and consider comparing whether strong or weak ties have a stronger effect on high- or low-cost actions.

This study adapted measures from previous research but did not conduct psychometric testing for strength of ties and visibility of action measures. While there was evidence of construct validity, future research should conduct psychometric testing before using the scales in their study. Future research can run a confirmatory factor analysis to establish construct and discriminant validity of reciprocity, closeness, trust, and duration should they wish to further use and develop this scale. Similarly, future research that seeks to measure visibility of action within a social media environment using multi-item scales should conduct psychometric testing to establish validity. While this study has its limitations, the findings can help social movement organizers modify communication practices and leverage visibility of action to mobilize supporters more effectively for specific forms of collective action.

References

Ai, M., & Zhang, N. (2021). Strong-tie discussion, political trust and political participation: A comparative study of mainland China, Hong Kong and Taiwan. *The International Communication Gazette, 83*(5), 497–516. doi:10.1177/17480485211029061

Bastos, M. T., Mercea, D., & Charpentier, A. (2015). Tents, tweets, and events: The interplay between ongoing protests and social media. *Journal of Communication, 65*(2), 320–250. doi:10.1111/jcom.12145

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529. doi:10.1037/0033-2909.117.3.497

Boulianne, S. (2015). Social media use and participation: A meta-analysis of current research. *Information, Communication & Society, 18*(5), 524–538. doi:10.1080/1369118X.2015.1008542

Chafe, W. H. (1980). *Civilities and civil rights: Greensboro, North Carolina, and the Black struggle for freedom*. New York, NY: Oxford University Press.

Chan, M. (2016). Social network sites and political engagement: Exploring the impact of Facebook connections and uses on political protest and participation. *Mass Communication and Society, 19*(4), 430–451. doi:10.1080/15205436.2016.1161803

Choi, D.-H., & Shin, D.-H. (2016). A dialectic perspective on the interactive relationship between social media and civic participation: The moderating role of social capital. *Information, Communication & Society, 20*(2), 151–166. doi:10.1080/1369118X.2016.1154586

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology, 55*(1), 591–621. doi:10.1146/annurev.psych.55.090902.142015

Clark, L. S. (2016). Participants on the margins: #BlackLivesMatter and the role that shared artifacts of engagement played among minoritized political newcomers on Snapchat, Facebook, and Twitter. *International Journal of Communication, 10*, 235–253. Retrieved from https://ijoc.org/index.php/ijoc/article/view/3843

Cotterill, S., John, P., & Richardson, L. (2013). The impact of a pledge request and the promise of publicity: A randomized controlled trial of charitable donations. *Social Science Quarterly, 94*(1), 200–216. doi:10.1111/j.1540-6237.2012.00896.x

Dumitrica, D., & Felt, M. (2020). Mediated grassroots collective action: Negotiating barriers of digital activism. *Information, Communication & Society, 23*(13), 1821–1837. doi:10.1080/1369118X.2019.1618891

Ellison, N. B., Steinfield, C., & Lampe, C. (2011). Connection strategies: Social capital implications of Facebook-enabled communication practices. *New Media & Society*, *13*(6), 873–892. doi:10.1177/1461444810385389

Fabrigar, L. R., MacCallum, R. C., Wegener, D. T., & Stranhan, R. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*(3), 272–299. doi:10.1037/1082-989X.4.3.272

Fishbein, M., & Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. New York, NY: Psychology Press.

Garson, D. G. (2013). Fundamentals of hierarchical linear and multilevel modeling. In D. G. Garson (Ed.), *Hierarchical linear modeling: Guide and applications* (pp. 3–26). Thousand Oaks, CA: SAGE Publications.

Gerber, A. S., Green, D. P., & Larimer, C. W. (2008). Social pressure and voter turnout: Evidence from a large-scale field experiment. *The American Political Science Review, 102*(1), 33–48. doi:10.1017/S000305540808009X

Gerber, A. S., Green, D. P., & Larimer, C. W. (2010). An experiment testing the relative effectiveness of encouraging voter participation by including feelings of pride or shame. *Political Behavior, 32*(3), 409–422. doi:10.1007/s11109-010-9110-4

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. doi:10.1111/j.1083-6101.2012.01574.x

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. doi:10.1177/0093650210384984

Gilbert, E. (2012, February). *Predicting tie strength in a new medium*. Paper presented at the ACM 2012 Conference on Computer Supported Cooperative Work, ACM, Seattle, WA. doi:10.1145/2145204.2145360

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology, 78*(6), 1360–1380. 201–233. Retrieved from https://www.jstor.org/stable/2776392

Haenschen, K. (2016). Social pressure on social media: Using Facebook status updates to increase voter turnout. *Journal of Communication, 66*(4), 542–563. doi:10.1111/jcom.12236

Hsiao, Y. (2018). Understanding digital natives in contentious politics: Explaining the effect of social media on protest participation through psychological incentives. *New Media & Society, 29*(9), 3457–3478. doi:10.1177/1461444817749519

Jeong, H. J, & Lee, M. (2013). The effect of online media platforms on joining causes: The impression management perspective. *Journal of Broadcasting & Electronic Media, 57*(4), 439–455. doi:10.1080/08838151.2013.845824

Kaun, A., & Uldam, J. (2018). "Volunteering is like any other business": Civic participation and social media. *New Media & Society, 20*(6), 2186–2207. doi:10.1177/1461444817731920

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36. https://doi.org/10.1007/BF02291575

Kavada, A. (2015). Creating the collective: Social media, the Occupy Movement and its constitution as a collective action. *Information, Communication & Society, 18*(8), 872–886. doi:10.1080/1369118X.2015.1043318

Kelly, C., & Breinlinger, S. (1995). Identity and injustice: Exploring women's participation in collective action. *Journal of Community & Applied Social Psychology, 5*(1), 41–57. doi:10.1002/casp.2450050104

Klandermans, B. (1997). *The social psychology of protest*. Cambridge, MA: Blackwell Publishers.

Klandermans, B., van der Toorn, J., & van Stekelenburg, J. (2008). Embeddedness and identity: How immigrants turn grievances into action. *American Sociological Review, 73*, 992–1012. doi:10.1177/000312240807300606

Krackhardt, D. (1992). The strength of strong ties: The importance of philos in organizations. In N. Nohria & R. Eccles (Eds.), *Networks and organizations: Structures, form and action* (pp. 216–239). Boston, MA: Harvard Business School Press.

Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2013). Construct validity of the need to belong scale: Mapping the nomological network. *Journal of Personality Assessment, 95*(6), 610–624. doi:10.1023/B:SERS.0000029096.90835.3f

Liu, J. (2016). Digital media, cycle of contention, and sustainability of environmental activism: The case of anti-PX protests in China. *Mass Communication and Society, 19*(5), 604–625. doi:10.1080/15205436.2016.1203954

Malone, G. P., Pillow, D. R., & Osman, A. (2011). The general belongingness scale: Assessing achieved belongingness. *Personality and Individual Differences, 52*(3), 311–316. doi:10.1016/j.paid.2011.10.027

Margetts, H., John, P., Hale, S., & Yasseri, T. (2016). *Political turbulence: How social media shape collective action*. Princeton, NJ: Princeton University Press.

Marsden, P. V., & Campbell, K. E. (1984). Measuring tie strength. *Social Forces, 63*(2), 482–501. doi:10.2307/2579058

Marsden, P. V., & Campbell, K. E. (2012). Reflections on conceptualizing and measuring tie strength. *Social Forces, 91*(1), 17–23. doi:10.2307/41683178

McAdam, D. (1982). *Political process and the development of Black insurgency, 1930–1970*. Chicago, IL: The University of Chicago Press.

McAdam, D., & Paulsen, R. (1993). Specifying the relationship between social ties and activism. *American Journal of Sociology*, *99*(3), 640–667. Retrieved from http://www.jstor.org/stable/2781286

Morris, X. (1984). *Origins of the Civil Rights movements*. New York, NY: The Free Press.

Nekmat, E., Gower, K. K., Gozenback, W. J., & Flanagin, A. J. (2015). Source effects in the micro-mobilization of collective action via social media. *Information, Communication & Society, 18*(9), 1076–1091. doi:10.1080/1369118X.2015.1018301

Panagopoulos, C. (2010). Affect, social pressure and prosocial motivation: Field experimental evidence of the mobilizing effects of pride, shame and publicizing voting behavior. *Political Behavior, 32*(3), 369–386. doi:10.1007/s11109-010-9114-0

Passy, F., & Monsch, G.-M. (2014). Do social networks really matter in contentious politics? *Social Movement Studies, 13*(1), 22–47. doi:10.1080/14742837.2013.863146

Postmes, T., & Brunsting, S. (2002). Collective action in the age of the Internet: Mass communication and online mobilization. *Social Science Computer Review, 20*(3), 290–301. doi:10.1177/089443930202000306

Ransby, B. (2003). *Ella Baker & the Black Freedom movement: A radical democratic vision*. Chapel Hill: University of North Carolina Press.

Saunders, C., Grasso, M., Olcese, C., Rainsford., & Rootes, C. (2012). Explaining differential protest participation: Novices, returners, repeaters, and stalwarts. *Mobilization: An International Journal, 17*(3), 263–280. doi:10.17813/MAIQ.17.3.BQM553573058T478

Schussman, A., & Soule, S. (2005). Process and protest: Accounting for individual protest participation. *Social Forces, 84*(2), 1083–1108. doi:10.1353/sof.2006.0034

Snijders, T. (2005). Fixed and random effects. In B. S. Everitt, & D. C. Howell (Eds.), *Encyclopedia of statistics in behavioral science* (pp. 664–665). Chichester, UK: Wiley.

Tang, G., & Lee, F. L. F. (2013). Facebook use and political participation: The impact of exposure to shared political information, connections with public political actors, and network structural heterogeneity. *Social Science Computer Review, 31*(6), 763–773. doi:10.1177/0894439313490625

Tsatsou, P. (2018). Social media and informal organization of citizen activism: Lessons from the use of Facebook in the Sunflower Movement. *Social Media + Society, 4*(1), 1–12. doi:10.1177/2056305117751384

Tufekci, T. (2017). *Twitter and tear gas: The power and fragility of networked protest*. New Haven, CT: Yale University Press.

Valenzuela, S., Correa, T., & Gil de Zúñiga, H. (2018). Ties, likes, and tweets: Using strong and weak ties to explain differences in protest participation across Facebook and Twitter Use. *Political Communication, 35*(1), 117–134. doi:10.1080/10584609.2017.1334726

Valenzuela, S., Park, N., & Kee, K. (2009). Is there social capital in a social network site?: Facebook use and college students' life satisfaction, trust, and participation. *Journal of Computer-Mediated Communication, 14*(4), 875–901. doi:10.1111/j.1083-6101.2009.01474.x

van Laer, J. (2010). Activists "online" and "offline:" The internet as an information channel for protest demonstrations. *Mobilization: An International Journal, 15*(3), 347–366. doi:10.17813/maiq.15.3.8028585100245801

van Stekelenburg, J. (2013). The political psychology of protest. *European Psychologist, 18*(4), 224–234. doi:10.1027/1016-9040/a000156

van Zomeren, Postmes, T., & Spears, R. (2008). Towards an integrative social identity model of collective action: A quantitative research synthesis of three social psychological perspectives. *Psychological Bulletin, 134*(4), 504–535. doi:10.1037/0033-2909.134.4.504

Yardi, S., & Boyd, D. (2010). Dynamic debates: An analysis of group polarization over time on Twitter. *Bulletin of Science, Technology & Society, 30*(5), 316–327. doi:10.1177/0270467610380011

You, L., & Hon, L. (2019). How social ties contribute to collective actions on social media: A social capital approach. *Public Relations Review, 45*(4), 1–11. doi:10.1016/j.pubrev.2019.04.005