Research Article

Social Media as a Sphere for "Risky" Political Expression: A Twenty-Country Multilevel Comparative Analysis

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Abstract

In the context of the United States, research shows a positive relationship between network heterogeneity and political expression on social media at the individual level. This study builds on that research, relying on multilevel analysis that (1) leverages a twenty-country comparative survey and (2) includes country-level data on freedom of expression. Results show a positive relationship between network heterogeneity and political expression on social media across countries, but that relationship is stronger where freedom of expression is more limited.

Keywords

social media, political expression, network heterogeneity, freedom of expression index, democracy, political communication

This paper examines how a country's freedom of expression shapes "risky" political expression on social media. Political expression has flourished on social media (Halpern and Gibbs 2013; Vaccari et al. 2015), and individuals who express their political views in these environments enjoy an increasingly substantial role, alongside political and media elites, in shaping public narratives about political issues in Western societies (Chadwick 2017; K. Thorson and Wells 2015). Recent research in the

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American context shows evidence of a positive relationship between network heterogeneity and political expression on social media (Barnidge et al. 2018). Expression in these networks can be "risky" in the sense that disagreeable opinions may invite social sanction (Eliasoph 1998; Walsh 2004) or silence (Wells et al. 2017).

Regardless, social media users tend to engage in this kind of expression, whether motivated by a desire to correct the record (Rojas 2010; Sun et al. 2008), persuade others (E. Thorson 2014), or represent their social identities (Correa and Jeong 2011). The present study contributes to this literature by testing a multilevel model that leverages (1) a twenty-country comparative survey that includes items tapping network heterogeneity and political expression on social media and (2) country-level data on freedom of expression. Thus, the study not only provides additional evidence of an established finding in new and different contexts; it also makes a novel contribution to the literature by investigating the role of freedom of expression.

Political Expression in Social Media Environments

Emerging online media afford their users the increased ability to publically express themselves about politics, and, thanks to these affordances, political expression has flourished on social media (Gil de Zúñiga et al. 2014; Halpern and Gibbs 2013; Vaccari et al. 2015). Political expression on social media can take a variety of forms, including posting or commenting on mainstream media content (K. Thorson et al. 2013; Vaccari et al. 2015), creating original commentary or media content (Ardèvol-Abreu et al. 2017; Gil de Zúñiga et al. 2014), discussing politics with other users in comment sections (Halpern and Gibbs 2013; E. Thorson 2014), temporarily changing a profile picture for a political or social cause (Weeks et al. 2017), and interacting with politicians or political groups (Bode 2012). It has also become increasingly common to circulate new kinds of user-generated content on social media platforms, including "memes," "gifs," or "vines" (Highfield and Leaver 2016; Nooney and Portwood-Stacer 2014).

These expressive affordances of social media are noteworthy because the people who engage in public expression in social media environments play an increasingly important role, alongside political and media elites, in shaping public narratives about social and political issues (Chadwick 2017; K. Thorson and Wells 2015). While some recent evidence indicates that social media expression is largely driven by elite politicians and media organizations (Harder et al. 2017; Jensen 2017; Wells et al. 2016), this does not mean that expression is entirely uncritical of elites. Rather, recent evidence also suggests that much of the content created and disseminated on social media reappropriates elite content in critical and/or satirical ways (Freelon and Karpf 2015), and this form of user-generated criticism plays an important role in increasingly complex interplay between the public, the news media, and political elites (Moe et al. 2016). Indeed, individuals who participate in social media expression tend to be engaged with the news media more generally (Kalogeropoulos et al. 2017). They largely see themselves as opinion leaders within their social networks (E. Thorson 2014), and they are increasingly successful at influencing the strategies and goals of political institutions and news media organizations (Chadwick 2017).

Network Heterogeneity in Social Media Environments

While some scholars have argued that filter bubbles limit the heterogeneity of communication in social media environments, most empirical research points toward the opposite conclusion. While it is true that social media sites employ algorithms that may filter out cross-cutting views (Pariser 2011), and it is also true that users themselves sometimes filter out these views by unfriending or unfollowing disagreeable contacts (John and Dvir-Gvirsman 2015; Noel and Nyhan 2011; Yang et al. 2017), recent evidence from both survey-based studies (e.g., Barnidge 2015, 2017; Heatherly et al. 2017; Kim 2011; Lee et al. 2014) and computational studies (e.g., Bakshy et al. 2015; Barberá 2014) suggests that people are exposed to relatively high levels of cross-cutting information in social media environments despite algorithmic or user-based filtration.

Theoretically, social media promote exposure to cross-cutting information for two reasons (Barnidge 2017; Brundidge 2010): (1) People connect with socially distant others—that is, weak ties—for reasons other than politics, which means that weak-tie connections are not pre-selected for particular political views (Huckfeldt et al.), and (2) contextual social norms, which are a major limiting factor of disagreement (Eliasoph 1998; Walsh 2004), do not necessarily discourage the expression of cross-cutting views. Taken together, these ideas suggest that social media diversify both network structure and the content of communication. Moreover, structural and content diversity tend to covary, such that more socially distant connections tend to post more cross-cutting content (Brundidge 2010).

Network Heterogeneity and Political Expression

Political expression in heterogeneous social networks is "riskier" than expression in homogeneous social networks, because disagreement in the wrong social contexts can be met with social disapproval (Eliasoph 1998; Walsh 2004) or silence (Wells et al. 2017). Therefore, to study "risky" political disagreement is to examine the kinds of cross-cutting engagement that is vital for public deliberation (Mutz 2002), precisely because this kind of expression is relatively more prone to self-censorship (Noelle-Neumann 1993), discontinuance of communication (Wells et al. 2017), social ostracization (Eliasoph 1998), or, in the most extreme cases, repressive reprisal by authorities (Aday et al. 2010).

There are three reasons why network heterogeneity and political expression should be positively related (Barnidge et al. 2018). First, some people who are confronted with disagreeable political opinions take "corrective action" (Barnidge and Rojas 2014; Rojas 2010; Sun et al. 2008). While this idea was conceptualized as a response to "hostile" media content, it has also been applied to citizen-to-citizen communication (e.g., Wojcieszak and Rojas 2011). Importantly, corrective action is not geared toward a response to perceived inaccuracies in a strictly factual sense (see, for example, Jun et al. 2017, who find that social media users are reluctant to challenge the factual accuracy of posts); rather, it is motivated by a perception of bias stemming

from the idea that the "wrong" facts have been highlighted or the "wrong" conclusions have been reached (Sun et al. 2008). Thus, some individuals are motivated to "set the record straight" when they encounter something in the public sphere they believe is "wrong" or biased, regardless of whether it is factually correct (Sun et al. 2008).

Second, political expression often takes the form of attempting to persuade others (E. Thorson 2014). That is, some people seek to change opinion through disagreeable expression. This kind of persuasive action differs from corrective action in that it is geared toward changing people's opinions and viewpoints rather than changing the public record. Third, identity-based processes are also related to political expression (Correa and Jeong 2011; Livingstone 2008). Representative expression differs from both corrective and persuasive action, as it is motivated by the belief that a particular identity has gone unrepresented in public discourse.

There is a prominent counter-argument to the hypothesis that network heterogeneity and political expression should be positively related. Noelle-Neumann (1993) argues that people fall silent when they get the impression that they are in the minority for fear of social isolation. This "spiral of silence" phenomenon is particularly likely if people get the impression that their minority view is losing ground compared to a majority view. But there is an important distinction between network heterogeneity and the perception of minority status. Network heterogeneity only means that people with different political and social experiences or views exist within a given network, not that any given viewpoint is a minority view or that it is losing ground. And while some empirical research shows a positive relationship between exposure to diverse viewpoints in social media environments and willingness to self-censor (Kwon et al. 2015), the same study shows no direct or mediated connection between diversity and posting activity. Hence, neither theory nor empirical evidence provides a compelling case for the "competing" hypothesis that network heterogeneity will be negatively related to expression.

Based on the above theory and logic, as well as recent empirical research (e.g., Barnidge et al. 2018), we hypothesize that network heterogeneity will be positively related to political expression on social media. Importantly, the conceptualization of network heterogeneity accounts for both online and offline social networks. Recent research has detected the growing isomorphism between offline and online networks (Rojas 2015). Therefore, we predict that a measure of network heterogeneity that combines the online and offline dimensions will be positively related to political expression in social media contexts:

> **Hypothesis 1 (H1):** Network heterogeneity will be positively related to political expression on social media.

Freedom of Expression

Freedom of expression is more than just a normative democratic ideal; it is a social structure comprising socio-cultural, legal, and technological frameworks that largely shape who says what and to whom (Dutton et al. 2010; Lucchi 2011). Thus, variation

in freedom of expression across countries can be empirically observed, and its influence on public spheres, political systems, and societies can be measured and evaluated (see, for example, the V-Dem Project: Coppedge et al. 2016).

Political and legal theory generally recognize a distinction between negative and positive freedom. Negative freedom refers to freedom *from* restrictions on legal freedoms, such as the freedom of speech or the press, whereas positive freedom refers to freedom *to* access resources that facilitate the enactment of legal freedoms (Christman 2005; Dimova-Cookson 2003; Hirschl 2000). This distinction has been the subject of debate (e.g., Simhony 1993). However, owing to the emergence of questions about social and technological inequality worldwide (Bhalla and Lapeyre 1997; DiMaggio et al. 2001), the core idea behind positive freedom—that equality in terms of access and opportunity is as important to democracy as freedom from legal restriction—has gained renewed interest in both legal philosophy and institutional practice.

This study considers both restrictions against expression and access to opportunities for expression. On the restrictions side, the study examines press freedom and social norms of expression. Press freedom refers not only to the absence of legal restrictions on the press (Hutchins et al. 1947) but also lawsuits or the threat of lawsuits, threats against journalists, denial of access to official sources, or coercive influence on news media content (Becker et al. 2007; Freille et al. 2007; Van de Vliert 2011). Meanwhile, social norms of expression refer to unwritten standards for what constitutes socially acceptable content and contexts of political speech (Eliasoph 1998; Noelle-Neumann 1993; Walsh 2004). The study also considers Internet access as a positive indicator of the freedom of expression. Internet access is considered a major component of positive freedom of expression (Balkin 2004), and the global digital divide is a primary consideration in evaluating the openness and inclusiveness of a democratic society (Bhalla and Lapeyre 1997; DiMaggio et al. 2001). Access is conceptualized not only in terms of the availability of an Internet connection but also ease of access, connection speed and Internet usability, and mobility (Balkin 2004).

Social Media and Freedom of Expression

Social media's influence on political expression cannot be fully understood without accounting for the political, institutional, and cultural factors that facilitate or limit opportunities for expression. While some research suggests that social media have consistent, positive effects on political engagement across national contexts (e.g., Bouilianne 2015), other research suggests that the influence of social media is conditional on the political context in which social media use occurs (Bailard 2014; Wolfsfeld et al. 2013). For example, Wolfsfeld and colleagues found that regime control of the Internet and Internet access have a substantial influence on whether people are able to use social media for the purposes of political mobilization. Drawing on these findings, this study tests the possibility that freedom of expression, as a country-level social structure, shapes the contexts in which people engage in political expression on social media.

More specifically, this study hypothesizes that the influence of network heterogeneity on political expression will be greater where the freedom of expression is relatively more limited, and there are at least three reasons why this equalizing influence may occur. First, social media arguably contribute to the development of more expressive cultural norms. Some scholars have argued that social media have played a key role in the emergence of a communicative culture marked by networked individualism (Rainie and Wellman 2012)—or the idea that people are increasingly networked as individuals rather than embedded in social groups—and affective publics (Papacharissi 2015)—or the notion that these networked individuals are mobilized and connected through the expression of sentiment. Although this study does not test these concepts directly, they serve as examples of arguments about the central role of social media in the emergence of a new cultural logic in which expressing individual sentiment takes precedence over agreement and consensus building. Where opportunities for expression are more plentiful, there are multiple outlets for this kind of expression, including online and offline discussion and engagement with news media content via comments or letters to the editor (Kalogeropoulos et al. 2017). However, where the freedom of expression is more limited, social media and the cultural logic that accompanies it should have a bigger impact on individual-level expression because these sites serve as the primary, if not only, outlet for expressing political sentiment.

Second, social media also facilitate information diffusion, especially in larger, more heterogeneous ego-centric networks (Bakshy et al. 2009; Wells and Thorson 2015). Therefore, social media could expose individuals in less free countries to new and different kinds of political ideas from international mainstream media and global social contacts, giving them more source material about which to express their political sentiment. Third, smart phone adoption is on the rise in the developing world (Poushter 2016), and the use of social media via mobile apps is also increasingly popular (Greenwood et al. 2015). In as much as mobile technologies help overcome global digital divides (DiMaggio et al. 2001), social media use could play a critical role in connecting developing-world citizens with politics and immersing them in emergent cultural logics of expression.

Thus, social media provide an outlet for political expression that should have the biggest impact in societies where freedom of expression is otherwise limited. Where people have less freedom of expression, social media should make them more likely to engage in "risky" expression because social media provides them an opportunity to do so where they otherwise have none. Therefore, the relationship between network heterogeneity and political expression on social media should be relatively stronger in these countries. On the other hand, the relationship should be relatively weaker where freedom of expression is higher, because both risky and nonrisky expression have become normalized in these societies, and thus expression should occur in both homogeneous and heterogeneous networks.

Hypothesis 2 (H2): The positive relationship between network heterogeneity and political expression on social media will be relatively stronger in countries with low freedom of expression and relatively weaker in countries with high freedom of expression.
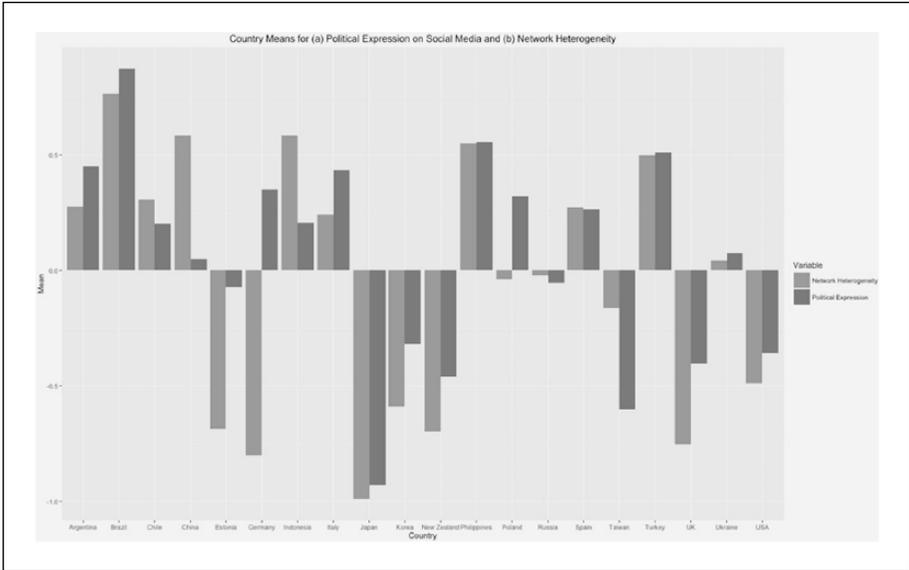
Figure 1. Bar plot of standardized country means for (1) political expression on social media and (2) network heterogeneity.

Method

Sample and Data

This study relies on a survey of individuals in twenty countries[1] fielded online by Nielsen between September 14 and 24, 2015. Nielsen used stratified quota sampling techniques to create samples whose demographics closely match those reported by official census agencies in each country (see, for example, Callegaro et al. 2014). The total sample size is $N = 20,486$, and individual-country sample sizes range from 943 (Korea) to 1,223 (Ukraine). The overall cooperation rate was high, averaging 77 percent across the panel (American Association for Public Opinion Research 2011; CR3).[2]

Political Expression on Social Media

The dependent variable, political expression on social media, was constructed using six items measured on 7-point scales (Cronbach's alpha = .940). Based on prior research (Halpern and Gibbs 2013; Vaccari et al. 2015), items asked how often (0 = *never*, 6 = *all the time*) respondents friend/like politicians on social media, post their thoughts about politics on social media, post on social media about their political experiences, forward political messages they see on social media to other people, change their profile picture to show support for a political cause, and join political groups on social media.[3] The final variable has a mean of 1.64 ($SD = 1.53$). Standardized country means are plotted in Figure 1.

Network Heterogeneity

The independent variable, network heterogeneity, was constructed using the five questionnaire items measure on 7-point scales (Cronbach's alpha = .805). Also based on prior research, this variable taps discussion with weak ties (Huckfeldt et al. 1995), as well as "cross-cutting" discussion (Mutz 2002). Items asked respondents how often they talk politics (1) face-to-face and (2) online with (a) acquaintances and (b) strangers. A fifth item asked respondents how often they talk politics online or offline with people who have political views that are different from their own (0 = *never*, 6 = *all the time*).[4] The final variable has a mean of 1.75 (*SD* = 1.27).[5] Standardized country means are plotted in Figure 1.

Social Interaction on Social Media

Prior research shows that social interaction is related to both network heterogeneity and political expression (Diehl et al. 2016). Therefore, social interaction on social media was controlled in the analyses. The variable was constructed using three survey items measured on 7-point scales (Cronbach's alpha = .796). Items asked respondents how often (0 = *never*, 6 = *all the time*) they use social media to stay in touch with family and friends, to meet new people who share interests, and to contact people they would not meet otherwise (*M* = 3.11, *SD* = 1.52).

Social Media News Use

Likewise, prior research shows that social media news use is related to political expression (Gil de Zúñiga et al. 2012; Valenzuela et al. 2012). The control variable was constructed with three survey items measures on 7-point scales (Cronbach's alpha = .816). Items asked respondents how often (0 = *never*, 6 = *all the time*) they get news from social media, use social media to stay informed about current events and public affairs, and use social media to get news about current events from mainstream media (*M* = 3.35, *SD* = 1.60).

Nonsocial Media News Use

Prior research indicates that controlling for news use in other communication environments is important to isolate the influence of social media (Gil de Zúñiga et al. 2012; Valenzuela et al. 2012). The variable was constructed using four items measured on 7-point scales (Cronbach's alpha = .570). Items asked respondents how often (0 = *never*, 6 = *all the time*) they get news from television news (cable or local network news), printed newspapers, online news websites, and radio (*M* = 3.70, *SD* = 1.14).

Political Talk Frequency

Political talk frequency is also controlled in the analyses (see Eveland and Hivey 2009). The variable was constructed using eight items measured on 7-point scales (Cronbach's alpha = .887). Items asked respondents how often (0 = *never*, 6 = *all the time*) they talk

politics (1) face-to-face and (2) online with (a) their spouse or partner; (b) family, relatives, or friends; (c) acquaintances; and (d) strangers (M = 1.92, SD = 1.27).

Ideological Extremity

Based on prior research (Garrett and Stroud 2014), ideological extremity was measured using an L-R ideological scale. Three items measured on 10-point scales (Cronbach's alpha = .895) asked respondents to indicate their ideology for political issues, economic issues, and social issues. These three items were averaged, and the resulting scale was folded so that moderate ideology = 0 and extreme ideology = 5 (M = 1.62, SD = 1.51).

Political Efficacy

Political efficacy was constructed using two survey items measured on 7-point scales (Cronbach's alpha = .713). Based on previous research (Niemi et al. 1991), items asked respondents whether they agree or disagree (0 = *strongly disagree*, 6 = *strongly agree*) that people like them can influence politics and that they consider themselves well qualified to participate in politics (M = 2.50, SD = 1.49).

Political Interest

Similarly, political interest is an important control variable (see Verba et al. 1995). Two survey items measured on 7-point scales (0 = *not at all*, 6 = *a great deal*) how closely they pay attention to information about what is going on in politics and public affairs, and how interested they are in information about what is going on in politics and public affairs (Cronbach's alpha = .937, M = 3.49, SD = 1.46).

Demographics

The analyses control for a standard set of demographic variables, including age (M = 40.62, SD = 14.57), gender (51 percent female, SE = .50), and education (measured on an 8-point scale where 0 = *none* and 7 = *postgraduate degree, M* = 3.31, SD = 1.30). Finally, socioeconomic status was measured with a two-item index. One item asked about annual household income, while the second asked about subjective perceptions of relative economic well-being (0 = *least well off*, 9 = *most well off*).[6] The two items (r = .33) were standardized and then averaged pairwise (M = −0.02, SD = 0.85).

Country-Level Measure: Freedom of Expression

At the country level, an index tapping freedom of expression was constructed based on the three dimensions of the concept reviewed above: press freedom (e.g., Hutchins et al. 1947), social norms of expression (e.g., Eliasoph 1998), and Internet
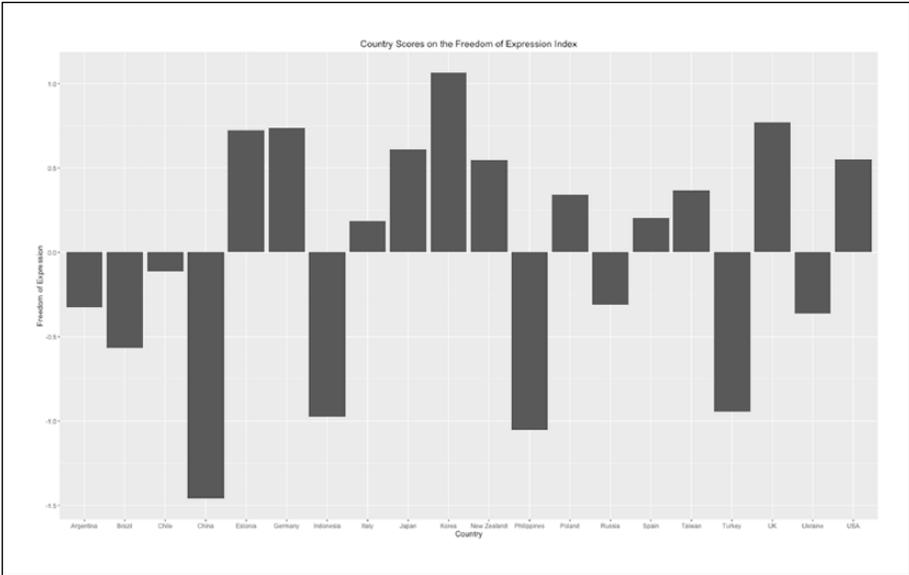
Figure 2. Bar plot of standardized freedom of expression index scores by country.

connectivity (e.g., Balkin 2004). Data for press freedom were taken from www.fredomhouse.org (2015 scores; see Dunham 2016).[7] This index has been criticized for reflecting a neoliberal bias, such that countries that have close ties to the United States and/or that have American-style political institutions tend to score higher than countries that do not (e.g., Giannone 2010; Steiner 2016). However, while these studies show a relatively consistent neoliberal bias in the measure before 1989, they also show that the Freedom House scores align more closely with other indices of democratic performance after that time. That said, our measure counteracts potential bias in the Freedom House measure by including the V-Dem (Varieties of Democracy) freedom of expression index (www.v-dem.net; 2016 dataset; see Coppedge et al. 2016).[8] This index not only provides an alternative measure of press freedom, but it also includes measures of social norms that tap into cultural dimensions of free expression lacking in the Freedom House scores. Finally, Internet connectivity statistics were collected from www.webworldwide.io.[9] The two external indices (Freedom House and V-Dem) were standardized along with the Internet connectivity statistics, and the average of the three items was taken as the final index of freedom of expression (Cronbach's alpha = .867). The index ($M = 0.00$, $SD = 0.72$) ranges from -1.46 (China) to 1.06 (Korea). Country values on the index are plotted in Figure 2.

Analysis and Results

A linear mixed-effects (LME) model (a.k.a. multilevel or hierarchical linear modeling) was used to test H1. First, a series of model comparisons was conducted to determine

Table 1. The Relationship between Network Heterogeneity and Political Expression on Social Media with and without a Cross-Level Interaction with the Freedom of Expression Index.

Variable	Social Media Political Expression	
Random effects	*SD*	
Intercept	0.18	0.16
Network Heterogeneity	0.09	0.07
Residual	1.04	1.04
Fixed effects	*B (SE)*	
Intercept	1.71 (0.04)*	1.70 (0.04)*
Age	−0.01 (0.00)*	−0.01 (0.00)*
Gender (1 = female)	−0.15 (0.02)*	−0.15 (0.02)*
Education	−0.01 (0.01)	−0.01 (0.01)
Socioeconomic Status	−0.01 (0.01)	−0.01 (0.01)
Political Interest	−0.02 (0.01)*	−0.02 (0.01)*
Political Efficacy	0.12 (0.01)*	0.12 (0.01)*
Ideological Extremity	0.03 (0.01)*	0.03 (0.01)*
Political Talk Frequency	0.21 (0.01)*	0.21 (0.01)*
Nonsocial Media News Use	−0.05 (0.01)*	−0.05 (0.01)*
Social Media News Use	0.17 (0.01)*	0.17 (0.01)*
Social Media Social Interaction	0.24 (0.01)*	0.24 (0.01)*
Network Heterogeneity	0.28 (0.02)*	0.28 (0.02)*
Freedom of Expression Index	−0.01 (0.04)	−0.11 (0.05)
Cross-Level Interaction	*B (SE)*	
Network Heterogeneity × Freedom of Expression Index	—	−0.08 (0.02)*
AIC	59,966.64	59,959.81
BIC	60,109.33	60,110.43
Log Likelihood	−29,965.32	−29,960.91

Note. Cell entries are parameter estimates from a linear mixed-effects model. $N = 20{,}486$, Groups = 20. AIC = Akaike information criterion; BIC = Bayesian information criterion.
*$p < .05$.

whether the intercept and effect of network heterogeneity vary between countries. Taken together, these results show that a random slope model is best fit to the data.[10] This model allows us to test the relationship hypothesized in H1 while accounting for between-country variance in the relationship and including freedom of expression as a country-level predictor. Results are summarized in Table 1. Because the covariates have been mean-centered,[11] the fixed intercept (1.71, $SE = .04$, $p < .05$) can be interpreted as the grand mean of political expression (Min. = 0, Max. = 6) adjusted at the mean of the predictors. This estimate varies between countries with a standard deviation of 0.18, which indicates that 96 percent of countries (or about nineteen of twenty) have a mean between 1.35 and 2.07. As hypothesized, the coefficient for network heterogeneity is .28 ($SE = .02$, $p < .05$), and this coefficient also varies between
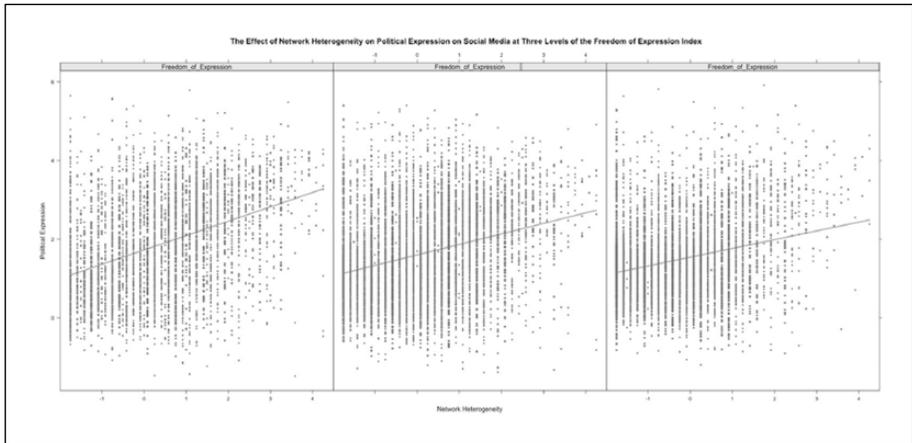
Figure 3. Cross-level interaction between network heterogeneity and the freedom of expression index estimated by the model in Table 1.
Note. Freedom of Expression is lowest in the left-most panel and highest in the right-most panel.

countries with a standard deviation of .09. Therefore, 96 percent of countries have effect sizes between .10 and .46. These results support H1.

H2 was tested by adding a cross-level interaction between network heterogeneity and the freedom of expression index. Results are also reported in Table 1. The interaction term is negative ($B = -.08$, $SE = .02$, $p < .05$), which indicates that there is a stronger effect of network heterogeneity where freedom of expression is low, and there is a weaker (but still positive) effect where freedom of expression is high. These results, which support H2, are visualized in Figure 3.

Discussion

The results indicate a positive relationship between network heterogeneity and political expression on social media. Moreover, this relationship is relatively stronger in countries with low freedom of expression and relatively weaker in countries with high freedom of expression.

These results point toward two specific conclusions. First, social media can act as an outlet for "risky" political expression—that is, political expression in larger, more heterogeneous networks that has the potential for attracting more disagreement (Huckfeldt et al. 2004) or social sanction (Eliasoph 1998; Walsh 2004; Wells et al. 2017). This conclusion fits with a growing body of literature documenting the new forms of expression afforded by social media (e.g., Gil de Zúñiga et al. 2014; Halpern and Gibbs 2013; Vaccari et al. 2015), and how digitally expressive individuals have a growing influence on public narratives and socio-political institutions and actors (Chadwick 2017; K. Thorson and Wells 2015). In addition, this conclusion fits with prior research showing evidence of the positive relationship between network

heterogeneity and social media expression (Barnidge et al. 2018). Whether it is due to corrective action (Sun et al. 2008), attempted persuasion (E. Thorson 2014), or identity representation (Correa and Jeong 2011), people tend to express themselves more where networks are more heterogeneous.

Second, social media are particularly important as outlets for political expression where the freedom of expression is relatively more limited. Social media use influences expression norms (Papacharissi 2015), and they can expose individuals to new and different kinds of information (Bakshy et al. 2009; Wells and Thorson 2015). Moreover, use of social media via smart phones can help overcome digital divides that previously made expression less likely in less technologically connected societies (DiMaggio et al. 2001). Therefore, social media arguably help people in less free societies overcome many of the limitations on political expression imposed by social norms, government censorship of news media, and global divides in technological access and literacy.

These conclusions imply that social media have a positive influence on democracy. Digital optimists have pointed to three reasons that digital media may strengthen democratic governance: They lower information costs (e.g., Dahlgren 2005), they facilitate social connection in a way that promotes political engagement (e.g., Bennett and Segerberg 2012), and they expand the repertoires for political action (e.g., Bimber et al. 2009). Political expression on social media satisfies all of these criteria. Social media lower the cost of "producing" politically expressive content, they encourage connection and interaction with a relatively broad range of others, and they facilitate the dissemination of new forms of content and discourse.

But there may also be a "dark side" to political expression on social media. Although this study offers no direct evidence about issues of trace data and online privacy, the findings of this study are related by extension to this important, ongoing public conversation. Expression on social media leaves a digital trail of information that can be monitored and tracked (e.g., Kreiss and Howard 2010). In more developed democracies, public conversations center around changing notions of the right to privacy (e.g., Madden and Rainie 2015). But in less democratic societies, the governmental capability for surveillance can have even more nefarious outcomes, as was seen, for example, in the repressive action of the Iranian government during the failed "Twitter revolution" (Aday et al. 2010). Thus, while social media can potentially act as a catalyst for democratic revolution (e.g., Eltantawy and Wiest 2011), it can also be used as a tool to monitor dissent, co-opt collective action, and violently repress revolt (Aday et al. 2010; Howard et al. 2011).

The conclusions articulated above are limited in several important ways. First, the study does not test the proposed mechanisms, and future research should employ experimental methods to do so. Next, the study relies on self-reported measures, which could have resulted in the over-reporting of expression. While this problem is typical of survey research, future research should focus on combining survey data with data describing actual social media content. Second, social media items use generic wording (i.e., "social media"). Future research could focus on differences between specific platforms, such as Facebook or Twitter, as these differences may be important to

our understanding of political expression. Third, while the study examines twenty countries—more than many studies in the comparative communication literature—these countries were not chosen at random but rather based on the availability of human and financial resources. Therefore, the study cannot be interpreted as a "random sample" of countries. Fourth, the study relies on an online panel survey, which is not a true probability sample. However, the sample does closely match census data from each of the twenty countries. Fifth, the study is based on cross-sectional data, and it cannot be used to draw causal inferences. Finally, while the study examined the technological, social-cultural, and legal aspects of freedom of expression, future research should focus on other social structures such as (1) media systems and (2) political institutions.

Despite these limitations, this article presents empirical evidence across twenty countries about the positive relationship between network heterogeneity and political expression on social media. Moreover, it also highlights the role of freedom of expression in shaping this relationship, and points toward the potential of social media to act as an outlet for political expression where this freedom is most limited.

Declaration of Conflicting Interests

Funding

Notes

1. The twenty countries are Argentina, Brazil, Chile, China, Estonia, Germany, Indonesia, Italy, Japan, (South) Korea, New Zealand, the Philippines, Poland, Russia, Spain, Taiwan, Turkey, Ukraine, the United Kingdom, and the United States. Questionnaire items were translated for each country by a large group of participating scholars, and responses were back-translated into English by research teams in Europe and New Zealand (see Behling and Law 2000; Cha et al. 2007).
2. Because Neilsen partners with companies that employ a combination of panel and probability-based sampling methods, the limitations of web-only survey designs are minimized in this case (Bosnjak et al. 2016). However, some parameters of the panel invitations are unknown, and therefore, traditional response rates should not be calculated (American Association for Public Opinion Research 2011).
3. For all social media variables, missing cases were recoded to 0 if respondents answered 0 on an item measuring general social media use ("How often do you use social media on a typical day?" [0 = *never*, 6 = *all the time*]).
4. Because the "different views" item was not asked in Indonesia, an imputation technique was used (see, for example, Harrell 2015). Indonesians did receive a "similar views" item. These two items were highly correlated in the other nineteen countries ($r = .78$). The "different views" item was regressed on the "similar views" item in the other nineteen

countries, and the estimated regression weight ($B = .71$) was then multiplied by the "similar views" scores in Indonesia to compute the "different views" scores for that country.

5. One-sample t-tests were conducted to assess differences between each country's mean and the grand sample mean for (1) political expression on social media ($M = 1.64$, $SD = 1.53$) and (2) network heterogeneity ($M = 1.75$, $SD = 1.27$). Means for both variables are illustrated in Figure 1, and full test results are available on request. For expression, notably high test statistics (indicating above-average country means) are observed in Brazil (17.16), Indonesia (13.84), the Philippines (13.51), and China (13.01). Notably low test statistics are seen in Japan (–24.61), Estonia (–20.13), and Germany (–18.20). Nonsignificant test statistics (indicating average country means) are seen in Poland (0.46) and Russia (0.87). For network heterogeneity, high test statistics are seen in Brazil (19.41) and the Philippines (13.63), while low test statistics are seen in Japan (–32.94) and Taiwan (–19.09). Meanwhile, nonsignificant test statistics are observed in China (–0.12) and Ukraine (0.58).

6. The subjective item was used because of the difficulties involved with using the same scale to measure annual household income across different currencies (see, for example, Keller et al. 2010; Litwin and Sapir 2009).

7. The Freedom House Press Freedom Index is created from composite scores for each country's "legal environment for the media, political pressures that affect reporting, and economic factors that affect access to news and information" (freedompress.org/report-types/freedom-press).

8. The V-Dem freedom of expression index (variable name: v2x_freexp_thick) was taken from the most recent year for each country (the oldest score is from 2014 and the newest is from 2016). Higher scores represent countries with more press freedom and more open expression norms.

9. Connectivity statistics include (1) the percentage of Internet users in a country, (2) the percentage of people in a country with broadband access (4Mbps+), (3) the percentage of people with fixed broadband subscriptions, (4) the percentage of people with mobile cellular subscriptions, (5) the average connection speed (kbps) in the country, and (6) the number of Internet servers per million people.

10. A fixed intercept null model (i.e., a model with no predictors and a fixed intercept) is compared with a random intercept null model. Results show that a random intercept model is better fit to data than a fixed intercept model (likelihood ratio = 2,677.55, $p < .05$). Then, a random intercept full model (i.e., a model with all predictors and a random intercept term) is compared with a random slope full model to determine whether the effect for network heterogeneity also varies by country. Results show that a random slope full model is better fit to data than a random intercept full model (likelihood ratio = 176.21, $p < .05$). Taken together, these results show that both the mean of political expression and the effect for network heterogeneity varies significantly between countries.

11. The linear mixed-effects (LME) models control for age, gender, education, socioeconomic status, political interest, political efficacy, ideological extremity, political talk frequency, nonsocial media news use, social media news use, and social interaction on social media. All controls are mean centered.

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