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## Undercurrents of echo chambers and flame wars: party political correlates of social media behavior

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### ABSTRACT

In this study, we examine how political party preference and politically active social media use associate with social media behaviors – namely, conformist, provocative, and protective – in the context of the current political sphere in Finland. In our empirical analysis, we use a nationally representative dataset collected from 3,724 Finnish citizens in 2018. Our research confirms the assumption that there are notable differences in the social media behaviors of the supporters of different political parties. Additionally, our research shows that politically active social media use increases the occurrence for all three aforementioned behaviors. The study's results also confirm that major differences in online behavior exist among the new identity parties' supporters, who rely heavily on post-materialist and neoconservative political values.

### KEYWORDS

*Social media; online participation; political party preference; selective exposure; echo chambers; political polarization*

### Introduction

The beginning of the social media era was accompanied by high hopes for the internet and social networking sites to be liberating, democratizing, and equalizing socio-technological innovations that might enable unparalleled forms of deliberation while also strengthening democratic processes (see Van Dijk & Hacker, 2018, p. 3–5). In its ideal form, the internet allows users to form networks without geographical or structural barriers and to be exposed to diverse information and opinions. Although digital platforms have undoubtedly increased opportunities for information exchange and engagement, they have also resulted in detrimental effects on social activity.

Social media facilitates all manner of negative interactions, with conversations made up of self-defeating disputes, distressing arguments, ad hominem attacks, and hate speech (e.g., Santana, 2014). Such situations have been described as *flame wars* or *flaming* (Jane, 2015; Lee, 2005). A similar term, *trolling*, has also emerged on a broader scale referring to activity of purposefully antagonizing other users (Coles & West, 2016). Both flaming and trolling are frequently witnessed behaviors during interactions concerning political issues, which may prove beneficial for users due to the potential

effectiveness of an aggressive communication style in achieving political goals (Jane, 2015; Quandt, 2018). As such, similarly to the political demagogues of the past, political influencers on social media currently utilize provocative discourse to disseminate viewpoints and various forms of information.

In addition to the harmful consequences of antagonistic communication, research shows that in the online context, users tend to form interest-based communities, which can increase the distance between population groups while also jeopardizing societal cohesion. According to past research, people tend to gravitate toward like-minded others in both “real life” (Lazarsfeld & Merton, 1954; McPherson, Smith-Lovin, & Cook, 2001) and digital surroundings (Gaines & Mondak, 2009; Koiranen, Koivula, Keipi, & Saarinen, 2019; Sunstein, 2001). As a consequence of this conscious or unconscious selective behavior, users may isolate themselves in the so-called *echo chambers* (Sunstein, 2001). In other words, to keep multi-complex social media content consistent with individual preferences and filter out conflicting views, many users engage in specific behaviors in order to actively avoid unwanted content or interactions that transmit such content.

While various behaviors leading to harmful

phenomena, such as echo chambers and flame wars, are perceived to be closely connected to politics, little is known about how political identity channels those behavioral tendencies, especially in multiparty contexts such as in Finland. As such, the focus of this study is on Finnish party supporters' behaviors on social media platforms. Addressing the behavioral differences among party supporter groups enables us to assess how ideological cleavages affect the development of these undesired outcomes. Since political online content is known to polarize opinions (Stroud, 2010; Vaccari et al., 2016), we are also interested in exploring the extent to which users' online political activities explain different behavioral undercurrents of echo chambers and flame wars. Thus, we ask the following research questions (RQs): *RQ1) Is politically active social media use associated with differences in users' behaviors on social media? RQ2) Is political party preference associated with differences in users' behaviors on social media?*

To gain a more detailed understanding of how political motivators associate with different behaviors, we assess how the relations between behaviors and politically active social media use as well party preference overlap. Recent research shows that politically active social media users tend to support more extreme political values (Koiranen, Koivula, Saarinen, & Keipi, 2020a) and are more likely to become entangled in identity bubbles (Koivula, Kaakinen, Oksanen, & Räsänen, 2019a). In this respect, politically active social media use may encourage supporters of different parties to leverage different online behaviors. Thus, we ask: *RQ3) To what extent does party preference interact with politically active social media use when assessing various behaviors on social media?*<sup>1</sup>

The article is structured as follows. First, we present the theoretical framework and define some prevalent online behaviors. Next, we introduce the study context by focusing specifically on the Finnish political sphere and formulate our hypotheses to address the RQs. Before discussing the results, we introduce the data and our methods. In the conclusion, we summarize our work's theoretical and practical contributions in terms of the associations involving politically active social media

use, party preference, and online behaviors, as specified in RQ1–RQ3.

## Literature review

### *Research background: social behavior in ideologically blended social contexts*

Social networking sites such as Facebook, Instagram, and Twitter, are built on the idea that people create and share content, with voluntary disclosure among multiple users. However, an ongoing conflict between two fundamental needs – *privacy* and *disclosure* – is inherent in such interactions (Brandtzæg, Lüders, & Skjetne, 2010). Thus, on social media sites, diverse social networks can become primary obstacles to sharing and disclosing content online. This tension between private and public spheres – often referred to as *context collapse* – imposes a difficult task on users and requires them to apply a variety of behaviors, such as self-censoring and conforming, to cope with the problem (Brandtzæg et al., 2010).

Arguably, the need for different means to deal with the conflict between private and public realms is amplified when social action is connected to politics. For example, different types of conflicts and harmful modes of communication have become prominent forces in current political discussions on social media (Quandt, 2018; Zhu, Skoric, & Shen, 2017). Simultaneously, politically active social media users are more likely to belong to social cliques based on highly personalized, selective, and identity-driven use of social media (Koivula et al., 2019a). Nonetheless, users who have a consistent political preference and clear political values connected to their preference are more likely to produce and share political content on social media (Koiranen et al., 2020a). Thus, while these social risks of political action seem to restrict social action to some extent, they do not entirely attenuate participation in the political sphere of social media. However, this may indicate that the need for different behavioral styles to control interaction in social networks is greater when the interaction is related to ideological issues.

In this study, we concentrate on three different behavioral styles, namely protective, provocative, and conformist (see Malinen, Koivula, Keipi, &

Koiranen, 2018). *Protective behavior* is related to the communication style where people are able to restrict the content to which they are exposed and the networks to which they belong. By engaging in protective behavior, users can adjust both their own and others' visibility in different networks (ibid.). This conscious or unconscious selection of like-minded users and pre-accepted information can be perceived as significantly affecting the formation of social media networks.

Social psychological theories have long acknowledged that people tend to seek information that is consistent with their preexisting attitudes and beliefs and that they fail to take dissenting information into account (Festinger, 1957). Selective exposure (searching for information that supports preexisting beliefs) and selective avoidance (actively avoiding information that challenges those beliefs) are psychological mechanisms used to reduce feelings of dissonance (ibid.). Selective behavior has been frequently observed in the context of online political information, and several studies have found that in the highly choice-driven media environment, people tend to follow sources that do not challenge their political opinions (Garrett, 2009; Jacobson, Myung, & Johnson, 2016; Stroud, 2010; Vaccari et al., 2016).

Simultaneously, sociologists have suggested that people tend to connect with those who share similar backgrounds, values, and views. Called homophily, this phenomenon is perceived as a powerful force in people's social lives in general (Kossinets & Watts, 2009; Lazarsfeld & Merton, 1954; McPherson et al., 2001), as well as in the formation of online networks (Boutyline & Willer, 2017; Koiranen et al., 2019). As such, it is not unusual for users to exhibit selective behavior toward the content they see and the networks they form.

However, previous research also shows that users' dispositions toward reading contrasting political information vary significantly across individuals (Vaccari et al., 2016), and users tend to not actively or consciously avoid information that they might disagree with (Garrett, 2009). In this sense, we propose that selective exposure and homophily do not prevent users from encountering diverse and opposing information or points of view. Instead, they may even foster exposure to political

disagreement, for example, due to social and informational recommendations based on social relationships that overrule ideological preferences. Furthermore, users may also ignore the risk of conflict and purposefully create content meant to provoke others.

*Provocative behavior* is readily apparent and surprisingly prevalent in cyberbullying, trolling, hate content production, and online harassment that target certain individuals or groups by expressing some form of negative sentiment (Coles & West, 2016; Hawdon, Oksanen, & Räsänen, 2015). It is assumed that online interaction is especially liable to disputes because it is asynchronous, lacks typical non-verbal cues, and creates an environment where other people are felt to be distant due to their physical absence (Keipi & Oksanen, 2014; Keipi, Oksanen, Hawdon, Näsi, & Räsänen, 2017).

While flame wars, provocation, and trolling can be regarded as negative examples of communication in social media networks, an echo chamber can be described as a negative example of a network structure in which communication exists. Accordingly, from the perspective of deliberative democracy, the ideal situation is positioned between these two extreme examples, in which people with different perspectives and political backgrounds join a deliberative dialogue in the public sphere without expressing anger or hate (Wright & Street, 2007). These kinds of ideal conversations and maintenance of networks require *conformist behavior*. Conformism in discourse offers many benefits as it facilitates constructive deliberation and increases people's willingness to consider and adopt other points of view (Santana, 2014). However, as previously stated, it is not an easy task to generate deliberative discussion on social media platforms, especially concerning politics. Thus, it is important to learn how supporters of different parties act in these online social spaces and how actively they demonstrate behaviors that might strengthen democratic processes or – in a non-ideal case – undermine them.

### **Research context: online political sphere in Finland**

Our study focuses on Finland, which represents one of the Nordic welfare societies and is known as a fairly homogeneous nation with a relatively

small share of foreign-national residents, a high-quality educational system, low rates of poverty, and small income disparities (Pfau-Effinger, 2004). As in other Nordic countries, the class-based three-pole model has traditionally been prominent in the Finnish political system (Westinen, 2015). First, the Social Democratic Party of Finland (SDP) and the Left Alliance (LA) have jointly represented the interests of workers and their unions. Second, the National Coalition Party (NCP) has demonstrated the most positive attitudes toward the interests of entrepreneurs and the upper strata. Finally, the Center Party of Finland (CPF) has promoted the interests of farmers and other people living in rural regions. (Koiranen, Koivula, Saarinen, & Räsänen, 2017; Koivula, 2019; Westinen, 2015)

Nonetheless, as in other Western democracies, the Finnish political sphere has become more polarized, leading to a new political cleavage based on post-materialist and neoconservative values<sup>2</sup> (Knutson, 2018; Norris & Inglehart, 2019; Westinen, 2015). Post-materialist values are perceived as highly connected with issues concerning non-material goals, such as self-expression, minority rights, and environmentalism (Inglehart, 1990). Subsequently, the intergenerational shift toward post-materialism has given rise to a counter-revolutionary *cultural backlash* among people who actively reject such values (see Norris & Inglehart, 2019). In Finland, cultural backlash materialized during the 2010s especially, as the populist and neoconservative Finns Party (FP) emerged at the core of the political system by gaining major election victories. In contrast to other Finnish parties, the FP has emphasized skepticism toward multiculturalism and the European Union (e.g., Hatakka, 2017; Jungar & Jupskås, 2014). In Finland, the Green League (GL) has been the major counterforce to the FP. While the GL's primary policies, especially regarding environmental protection, have become the mainstream of political discourse, the GL has extended its scope to other post-materialist issues (Koivula, Koiranen, Saarinen, & Keipi, 2020; Mickelsson, 2015; Saarinen, Koivula, Koiranen, & Sivonen, 2018). Additionally, the LA has now become aligned with the GL, whose current political goals are strongly based on the shared post-materialist values of equality, tolerance, and minority rights (Koivula et al., 2020).

Concurrently with the shift toward post-materialist questions in the political arena, new digital technologies have disrupted the means of political participation. Social media platforms now play a crucial role in new political processes (Bennett & Segerberg, 2012). According to Bennett (2012, p. 37), the individualization of societies and the emergence of information technology and social media “have given rise to an era of personalized politics in which individual expression displaces collective action frames in the embrace of political causes.” In this sort of *connective action*, social media can be regarded as a prominent part of the public sphere, where different political actors attempt to disseminate their own political goals to the public and create collective awareness of their ideological ambitions.

In Finland, it seems that the new identity parties – the GL, the FP, and the LA – have gained more political benefits with the aid of social media and other online forms of connective action. First, research shows that the new identity parties' supporter and member groups utilize social media more actively for political purposes (Koiranen et al., 2020a; Koiranen et al., 2017). This is partly related to the new identity parties' sociodemographic structures. Generally, the active users of social media are more likely to be younger, more educated, and urban area residents (Koiranen, Keipi, Koivula, & Räsänen, 2020a). Because these same structural factors are highly connected to ideological and political tendencies (Koivula, 2019), the parties that represent these population segments have benefited more from social media and new forms of participation (Koiranen et al., 2020a).

In addition to sociodemographic characteristics, recent research indicates that external pressures (such as the rise of connective action) may lead to different reactions among the parties because of parties characteristics, such as parties' origins, institutionalized structures and practices, and primary goals (Koskimaa, 2020). Thus, party characteristics may encourage supporters, rank-and-file members, party activists, and politicians to participate on behalf of their party in different ways. Empirical evidence shows that neoconservative populist parties may be motivating supporters to participate actively online. For example, in the Swedish

political context, right-wing populist parties are perceived as being more able to evoke reactions and engage their supporters through social media platforms in the form of likes, comments, and shares (Larsson, 2019). Similarly, Hatakka (2017) shows how the FP's close (but complex) relations with loose populist online movements have leveraged party's position in the field of parliamentary politics. Thus, it seems that populist parties' structures, practices, and goals might be more suitable for promoting activism in the online public sphere.

In addition to the differences in the political parties' positions in connective action, a recent research report funded by the Finnish Council of State supports the idea that antagonistic content on social media is more embedded in post-materialist and neoconservative issues (Knuutila, Kosonen, Saresma, Haara, & Pöyhtäri, 2019). First, different parties' representatives vary in how much harmful content they receive. The report reveals that representatives from the GL and the LA reported receiving significantly more degrading messages than the other parties' representatives. Second, most of the antagonistic content that Finnish politicians received was sent by a minority of people who had anti-immigration tendencies and supported neoconservative values (ibid.). Thus, it seems that similar to other Western countries (see Papacharissi, 2004; Quandt, 2018), political conflicts related to struggles between post-materialist and neoconservative values spark incivility in Finland's online context as well.

### **Research hypotheses: mixing the connections of political activity and party preference**

As concluded, social media has been transformed into an ideologically segregated social space, where networks filled with different social, cultural, and ideological premises collide with one another (in cases of flaming) and are simultaneously isolated from one another (in cases of echo chambers). In this complex social setting, users attempt to manage their own and the others' presence with different behavioral means. The dissonance among a person's different roles in various contexts is pronounced when politics is embedded in social action. As such, we hypothesize that (H1) *politically active users are more likely to leverage protective,*

*provocative, and conformist behaviors on social media than politically non-active users.*

We also argue that the context-related social pressure for utilizing different behavioral means may have altering outlets, depending on ideological standing. Evidence indicates that due to sociodemographic structures (Koiranen et al., 2020a), party characteristics (Koskimaa, 2020), and the highlighted importance of post-materialist and neoconservative questions (Knuutila et al., 2019; Koiranen et al., 2020a), supporters of the new identity parties could be experiencing a greater need to enact different behaviors for coping with the pressure formed by ideologically blended social media networks. Similarly, we expect that the pronounced activities of supporters of the new identity parties may be partly related to reciprocal mechanisms of a polarized political field. In other words, activities of political counterparts may elicit behavioral responses from those who oppose those activities. Therefore, we expect that (H2) *supporters of the FP manifest provocative behavior more than others,* and (H3) *supporters of the GL and the LA resort to protective behavior more than others.*

While analyzing the association of political activity and party preference with behavioral tendencies, we also assess how these two independent variables interact with each other. As previous research shows, differences in political values are amplified among those who use social media actively for political purposes (Koiranen et al., 2020a). Following the same logic, ideological factors may raise a higher need for behaviors among politically active supporters and simultaneously polarize utilized behavioral practices among different parties' politically active supporters. Therefore, we hypothesize that (H4) *the party differences in behaviors are highlighted among politically active social media users supporting different parties.*

## **Materials and methods**

### **Participants**

The research data were collected by drawing a simple random sample of 8,000 Finnish citizens from the Finnish Population Register. The target population was defined as all Finnish-speaking citizens aged 18–74. All the persons selected for the

sample were contacted by mail and offered the opportunity to respond to the questionnaire either on paper or online. A total of 2,470 Finns responded to the survey (paper form:  $N = 2,011$ ; online form:  $N = 459$ ), amounting to a 31% response rate as those who could not be reached were omitted from the initial sample. To guarantee enough observations from the social media users, the data were supplemented with an online survey of 1,254 respondents, aged 18–74, administered by a market research company. Consequently, the final data included 3,724 observations. (see Sivonen, Koivula, Saarinen, & Keipi, 2018.)

In this study, we focused exclusively on the participants who reported using social media and applied different behaviors ( $N = 2,790$ ), accounting for 77% of the original data. To find out the social media users from the original data, we included only those respondents who reported at least some level of social media usage on any platform and some social media behaviors (see the variable descriptions in the next section). In our final sample, 64% ( $N = 1,779$ ) of the respondents were from the probability sample, and 36% ( $N = 1,011$ ) were from the nonprobability sample. The potential selection bias was considered by comparing the sample distribution of the social media users with the distribution of Finnish social media users according to the most recent (2018) Official Statistics of Finland. To balance the final sample to correspond with the population criteria regarding the age distribution of social media users, we computed post-stratification weights based on available official statistics (see Malinen et al., 2018; Sivonen et al., 2018).

### Measures

The respondents' tendencies to apply different behaviors were measured with several questions. For example, the respondents were asked whether they had hidden or removed unpleasant social media content or people from their social networks, intentionally shared content that was offensive or provoked others, or restricted their self-expression out of fear of offending others (see Table 1). Based on those questions and with the aid of factor analysis,<sup>3</sup> we identified three different behaviors in relation to selective exposure and social interaction

**Table 1.** Descriptive statistics of dependent variables.

|  | Obs.         | M          | SD         | Alpha      |
|--|--------------|------------|------------|------------|
| <b>Conformist use</b>  | <b>2,790</b> | <b>2.5</b> | <b>0.9</b> | <b>0.6</b> |
| The fear of offending others limits my posting of my opinions on social media    |              | 3.1        | 1.3        |            |
| I try to give others on social media an improved image of who I am               |              | 2.4        | 1.2        |            |
| I very often "like" other users' posts in order to show support and empathy      |              | 2.1        | 1.1        |            |
| <b>Provocative use</b>   | <b>2,790</b> | <b>2.2</b> | <b>0.8</b> | <b>0.6</b> |
| I purposefully share material on social media that I believe will provoke others |              | 1.5        | 0.9        |            |
| I comment on others' posts on social media even when I disagree with them        |              | 2.2        | 1.2        |            |
| <b>Protective use</b>  | <b>2,790</b> | <b>2.3</b> | <b>1.2</b> | <b>0.6</b> |
| I have hidden content that conflicts with my points of view on social media      |              | 1.8        | 1.3        |            |
| I have hidden or removed annoying or bothersome users on social media            |              | 2.8        | 1.6        |            |

on social media: *conformist*, *provocative*, and *protective behavior* (see Malinen et al., 2018).

The first composite variable, *conformist behavior*, included items regarding the fear of offending others' feelings, creating a good impression online, and supporting others. The second variable, *provocative behavior*, consisted of items related to deliberately provoking others on social media and the tendency to disagree with other users. The third variable, *protective behavior*, which describes the aim of protecting oneself from harmful or offensive online content using selective avoidance behavior, comprised items about hiding undesirable content and removing or hiding annoying persons from social networks. The descriptive statistics with the internal consistencies of composite variables and initial questionnaire forms are presented in Table 1.

In the analysis, we predicted the behaviors outlined above according to the two main independent variables – politically active social media use and political party preference. We also assessed whether those associations were confounded by background factors and whether they interacted with each other.

As for *politically active social media use*,<sup>4</sup> we used a categorical variable that divided the participants into four groups: 1) *non-active*, 2) *following political discussions*, 3) *participating occasionally*, and 4) *participating weekly*. The variable is based on the four different variables whose data we combined into one independent variable. First, we filtered "non-active" – those who did not use social media for political purposes at all. Second, we formed a category for

**Table 2.** Descriptive statistics of independent variables.

| Variable  | Obs.  | Mean/<br>Pr | SD    | Min   | Max   |
|---|-------|-------------|-------|-------|-------|
| <i>Politically active social media use</i>      | 2,790 |             |       | 1.0   | 4.0   |
| Non-active                                      |       | 0.28        |       |       |       |
| Following                                       |       | 0.30        |       |       |       |
| Participating occasionally                      |       | 0.32        |       |       |       |
| Participating weekly                            |       | 0.10        |       |       |       |
| <i>Party preference</i>                         | 2,790 |             |       | 1.00  | 8.00  |
| CPF   |       | 0.10        |       |       |       |
| FP  |       | 0.06        |       |       |       |
| NCP   |       | 0.19        |       |       |       |
| SDP   |       | 0.12        |       |       |       |
| GL  |       | 0.16        |       |       |       |
| LA  |       | 0.07        |       |       |       |
| Other   |       | 0.09        |       |       |       |
| None  |       | 0.21        |       |       |       |
| <i>Gender</i>                                   | 2,783 |             |       | 0.00  | 1.00  |
| Male  |       | 0.48        |       |       |       |
| Female  |       | 0.52        |       |       |       |
| <i>Age (continuous)</i>                         | 2,785 | 47.95       | 15.82 | 18.00 | 74.00 |
| <i>Education</i>                                | 2,785 |             |       | 1.00  | 4.00  |
| Primary   |       | 0.09        |       |       |       |
| Upper-second                                    |       | 0.32        |       |       |       |
| Tertiary  |       | 0.35        |       |       |       |
| Master  |       | 0.24        |       |       |       |
| <i>General use of social media (continuous)</i> | 2,790 | 2.08        | 0.54  | 1.00  | 4.56  |

“following” by separating those who at least sometimes followed political discussions on social media. Third, we differentiated “participating occasionally” by combining those participants who at least sometimes used social media for participating in political discussions, creating political content, or sharing political content. Fourth, we created a category for “weekly participating” by classifying those who at least weekly used social media for participating in political discussions, creating political content, or sharing political content.

The participants were asked about their *political party preference*<sup>5</sup> with the question, “Which of the following political parties is the most important to you?” Respondents could choose from nine parliamentary political parties, answer an open-ended question regarding a smaller party, or choose the option “none.” In the analysis, we focused on the differences among the supporters of the six largest parliamentary parties but also considered those who did not prefer any party or chose the smaller party.

The control variables included a set of typical factors addressing social media use and political preferences, namely age, gender, and education (Koiranen et al., 2020a, 2020a). We also controlled for the frequency of *general use of social media*<sup>6</sup> with a composite variable, which included items

inquiring about users’ frequency of reading and participating in discussions on blogs, forums, social networking sites, social messaging applications, and online news forums. The descriptive statistics of the applied variables are shown in Table 2.

### Analysis strategy

In the first phase of the analyses,<sup>7</sup> we used separate models for each dependent variable by using ordinary least squares (OLS) models. We began each section with the simple regression models to assess the direct associations of the main independent variables and behavioral means. Then, the multiple regression models were constructed by introducing the control variables into the models within the main independent variables. Based on the multiple regression models, we also conducted post-hoc analyses with the different control groups of independent variables by employing the pairwise comparisons with Bonferroni corrections.

In the separate models, we analyze the extent to which politically active social media use modified the association between party preference and behavioral means. Here, we conduct interaction analyses by adding interaction terms, including party preference and politically active social media use, into the base models with the control variables.

### Results

We begin our analysis by answering RQ1 and assessing whether politically active social media use contributed to social media users’ different behaviors (see Table 3). We found that politically active social media use was strongly associated with conformist behavior. According to the results, the association was weakened – but not completely diminished – by the adjustment for the background variables, namely the general use of social media, age, gender, and education. The model suggested that those who participated occasionally ( $B = 0.45$ ;  $p < .001$ ) or weekly ( $B = 0.44$ ;  $p < .001$ ) in political discussions on social media were more likely to apply conformist behavior. Moreover, those who followed political content ( $B = 0.20$ ;  $p < .001$ ) were more likely to exhibit the behavior than those who were not politically active at all. The pairwise comparison did not reveal a statistically significant difference



**Table 3.** Social media behaviors by politically active social media use and background variables, OLS regression analysis with unstandardized coefficients and standard errors.

| VARIABLES   | Conformist        |                    | Provocative        |                    | Protective        |                    |
|---|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
|   | M1                | M2                 | M1                 | M2                 | M1                | M2                 |
| <i>Politically active social media use (omitted "None")</i> |                   |                    |                    |                    |                   |                    |
| Following   | 0.40***<br>(0.05) | 0.20***<br>(0.04)  | -0.13***<br>(0.03) | -0.21***<br>(0.04) | 0.33***<br>(0.06) | 0.10<br>(0.06)     |
| Participating occasionally                                  | 0.80***<br>(0.04) | 0.45***<br>(0.05)  | 0.37***<br>(0.03)  | 0.23***<br>(0.04)  | 0.80***<br>(0.06) | 0.41***<br>(0.06)  |
| Participating weekly  | 0.90***<br>(0.06) | 0.44***<br>(0.07)  | 0.97***<br>(0.06)  | 0.68***<br>(0.07)  | 1.05***<br>(0.09) | 0.58***<br>(0.10)  |
| <i>Gender (omitted "Male")</i>                              |                   |                    |                    |                    |                   |                    |
| Female  |                   | 0.29***<br>(0.03)  |                    | -0.26***<br>(0.03) |                   | 0.31***<br>(0.04)  |
| Age   |                   | -0.01***<br>(0.00) |                    | -0.00<br>(0.00)    |                   | -0.02***<br>(0.00) |
| <i>Education (omitted "Primary")</i>                        |                   |                    |                    |                    |                   |                    |
| Upper-secondary   |                   | -0.09<br>(0.06)    |                    | -0.01<br>(0.05)    |                   | -0.20**<br>(0.08)  |
| Tertiary  |                   | -0.07<br>(0.06)    |                    | -0.06<br>(0.05)    |                   | -0.05<br>(0.08)    |
| Master  |                   | -0.01<br>(0.07)    |                    | -0.10<br>(0.05)    |                   | -0.04<br>(0.08)    |
| <i>General use of social media</i>                          |                   |                    |                    |                    |                   |                    |
| Observations  | 2,790             | 2,735              | 2,790              | 2,735              | 2,790             | 2,735              |
| R-squared   | 0.13              | 0.26               | 0.19               | 0.24               | 0.09              | 0.20               |

Unstandardized coefficients, robust standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

between those who participated on a weekly basis and those who did so less frequently, but occasional ( $B = 0.24$ ;  $p < .001$ ) and weekly ( $B = 0.23$ ;  $p < .01$ ) participants differed significantly from followers.

Politically active social media use was strongly associated with provocative behavior as well. However, following political discussion was not associated with provocative use. Additionally, there was a substantial difference between those who participated weekly and those who participated less frequently. The models indicated that background factors did not completely explain the associations. The second model indicated that those who participated occasionally ( $B = 0.23$ ;  $p < .001$ ) or weekly ( $B = 0.68$ ;  $p < .001$ ) in political discussions were more likely to behave provocatively. The pairwise comparison suggested significant differences between weekly and occasional participants ( $B = 0.55$ ;  $p < .001$ ). Moreover, those who only followed political discussions were even less likely to behave provocatively ( $B = -0.21$ ;  $p < .001$ ) compared with those who did not use social media for political purposes.

Protective behavior was explained in the same way as other behaviors. Based on the multiple regression model, the association was diminished after controlling for the background variables. However, the second model indicated that

occasional ( $B = 0.41$ ;  $p < .001$ ) and weekly participation ( $B = 0.58$ ;  $p < .001$ ) were positively associated with protective behavior, even after controlling for background factors. However, we could not find a statistical difference between weekly and occasional participants in the pairwise comparisons.

As noted earlier, we formed a measure of politically active social media use based on four single variables. Even though the mutation allows for a simpler interpretation and the use of more observations as part of the analysis, it can also hide the variance associated with the variables measuring different kind of political activity. Thus, we performed an additional analysis where we analyzed the relationship of each item of the variable separately (see Table A1 in the appendices). Overall, the additional analysis revealed similar results as the one with multicomponent variable.

We now move on to RQ2, concerning how party preference is associated with users' tendencies to apply different types of behavior on social media (see Table 4). When assessing conformist behavior, we found that the GL supporters ( $B = 0.27$ ;  $p < .001$ ) were the most conformist in their online behavior when the background factors were not standardized. However, after incorporating the

**Table 4.** Social media behaviors by party preference and background variables, OLS regression analysis with unstandardized coefficients and standard errors.

| VARIABLES                               | Conformist        |                    | Provocative       |                    | Protective        |                    |
|---|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|
|   | M1                | M2                 | M1                | M2                 | M1                | M2                 |
| <i>Party Preference (omitted "CPF")</i> |                   |                    |                   |                    |                   |                    |
| FP                                      | 0.02<br>(0.09)    | -0.17*<br>(0.08)   | 0.59***<br>(0.08) | 0.37***<br>(0.09)  | 0.02<br>(0.11)    | -0.22*<br>(0.11)   |
| NCP                                     | 0.00<br>(0.07)    | -0.04<br>(0.06)    | 0.04<br>(0.05)    | -0.02<br>(0.06)    | 0.10<br>(0.09)    | 0.06<br>(0.08)     |
| SDP                                     | -0.04<br>(0.08)   | 0.03<br>(0.07)     | 0.01<br>(0.06)    | 0.01<br>(0.06)     | 0.02<br>(0.09)    | 0.13<br>(0.09)     |
| GL                                      | 0.27***<br>(0.07) | 0.01<br>(0.06)     | 0.03<br>(0.05)    | -0.01<br>(0.06)    | 0.49***<br>(0.09) | 0.18*<br>(0.09)    |
| LA                                      | 0.17<br>(0.09)    | -0.03<br>(0.08)    | 0.15*<br>(0.07)   | 0.10<br>(0.08)     | 0.67***<br>(0.12) | 0.47***<br>(0.11)  |
| Other                                   | 0.12<br>(0.09)    | 0.06<br>(0.08)     | 0.06<br>(0.06)    | 0.01<br>(0.08)     | 0.09<br>(0.11)    | 0.03<br>(0.10)     |
| None                                    | -0.04<br>(0.07)   | -0.14*<br>(0.06)   | 0.05<br>(0.05)    | 0.06<br>(0.06)     | 0.13<br>(0.08)    | 0.01<br>(0.08)     |
| <i>Gender (omitted "Male")</i>          |                   |                    |                   |                    |                   |                    |
| Female                                  |                   | 0.27***<br>(0.03)  |                   | -0.27***<br>(0.03) |                   | 0.27***<br>(0.05)  |
| <i>Age</i>                              |                   |                    |                   |                    |                   |                    |
| Age                                     |                   | -0.01***<br>(0.00) |                   | 0.00<br>(0.00)     |                   | -0.02***<br>(0.00) |
| <i>Education (omitted "Primary")</i>    |                   |                    |                   |                    |                   |                    |
| Upper secondary                         |                   | -0.06<br>(0.07)    |                   | 0.02<br>(0.06)     |                   | -0.18*<br>(0.08)   |
| Tertiary                                |                   | -0.02<br>(0.06)    |                   | -0.02<br>(0.06)    |                   | -0.00<br>(0.08)    |
| Master                                  |                   | 0.04<br>(0.07)     |                   | -0.01<br>(0.06)    |                   | -0.01<br>(0.09)    |
| <i>General use of social media</i>      |                   |                    |                   |                    |                   |                    |
|   |                   | 0.64***<br>(0.03)  |                   | 0.46***<br>(0.03)  |                   | 0.63***<br>(0.04)  |
| Observations                            | 2,790             | 2,735              | 2,790             | 2,735              | 2,790             | 2,735              |
| R-squared                               | 0.02              | 0.23               | 0.03              | 0.24               | 0.03              | 0.20               |

Unstandardized coefficients, robust standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$

background variables, the only significant association was found among the FP supporters ( $B = -0.17$ ;  $p < .05$ ), as they were showing the less conformist behavior compared with the CPF supporters. The other 27 pairwise comparisons did not produce statistically significant differences between the party groups.

Moving on to provocative behavior, the FP supporters ( $B = 0.59$ ;  $p < .001$ ) were significantly more likely to behave in a provocative manner on social media. The LA supporters ( $B = 0.15$ ;  $p < .05$ ) were also more likely to apply provocative behavior. The second model indicated that the party preference association on the FP supporters ( $B = 0.34$ ;  $p < .001$ ) was not totally explained by the background variables, while the LA supporters were no longer highlighted after controlling for background factors. The pairwise comparisons revealed that the difference between the supporters of the FP and all other parties except the LA supporters was significant at the least level  $p < .001$ .

Protective behavior was most likely to occur among the GL supporters ( $B = 0.49$ ;  $p < .001$ ) and especially among the LA supporters ( $B = 0.66$ ;  $p < .001$ ). The second model revealed that the party preference association on the GL and the LA supporters remained statistically significant, even after controlling for background variables. Moreover, after considering the differences among the party supporters' backgrounds, the FP supporters emerged with less protective behavior ( $B = -0.21$ ;  $p < .05$ ). The pairwise comparisons revealed that the supporters of the LA ( $B = 0.69$ ;  $p < .001$ ), the GL ( $B = 0.40$ ;  $p < .01$ ), and the SDP ( $B = 0.35$ ;  $p < .05$ ) reported behaving in a more protective manner than the FP supporters.

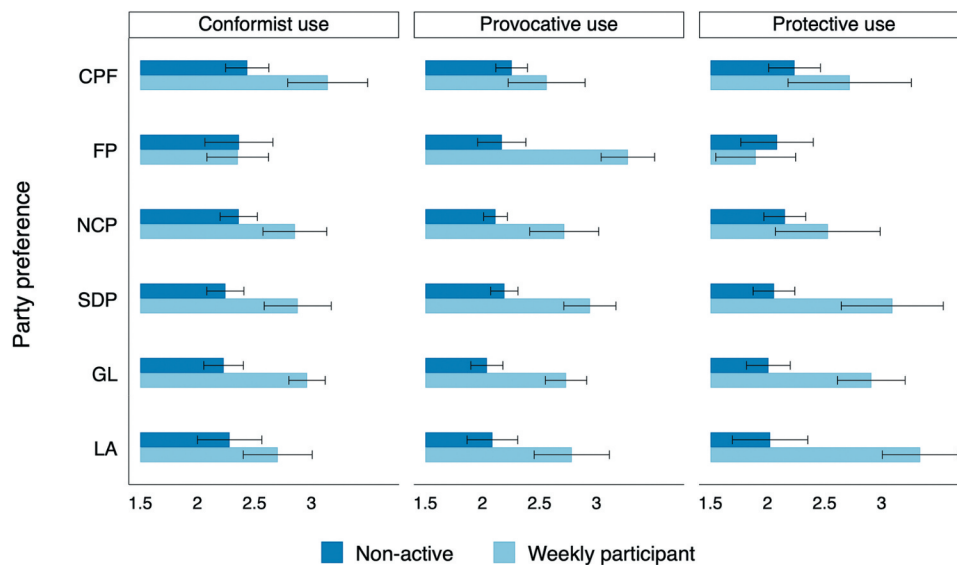
Finally, we continued the modeling procedure by adding interaction terms between party preference and politically active social media use into the base models with control variables. In this way, we were able to answer RQ3, concerning the potential interaction effects of politically active social media use

**Table 5.** Social media behaviors by party preference and online political activity, OLS regression analysis with unstandardized coefficients and standard errors.

| VARIABLES   | Conformist |        | Provocative |        | Protective |        |
|---|------------|--------|-------------|--------|------------|--------|
| <i>Party preference (omitted "CPF")</i>                     |            |        |             |        |            |        |
| FP  | -0.07      | (0.18) | -0.09       | (0.16) | -0.15      | (0.20) |
| NCP   | -0.07      | (0.13) | -0.14       | (0.10) | -0.09      | (0.15) |
| SDP   | -0.19      | (0.13) | -0.07       | (0.11) | -0.18      | (0.15) |
| GL  | -0.20      | (0.13) | -0.22*      | (0.10) | -0.23      | (0.15) |
| LA  | -0.15      | (0.18) | -0.17       | (0.15) | -0.21      | (0.21) |
| Other   | -0.15      | (0.18) | -0.02       | (0.15) | -0.18      | (0.17) |
| None  | -0.14      | (0.11) | -0.07       | (0.10) | -0.09      | (0.14) |
| <i>Politically active social media use (omitted "None")</i> |            |        |             |        |            |        |
| Following   | 0.03       | (0.13) | -0.29**     | (0.10) | -0.33*     | (0.15) |
| Participating occasionally                                  | 0.29*      | (0.13) | 0.06        | (0.13) | 0.28       | (0.17) |
| Participating weekly  | 0.70**     | (0.21) | 0.30        | (0.26) | 0.49       | (0.30) |
| <i>Interaction effects:</i>                                 |            |        |             |        |            |        |
| FP * Weekly participation                                   | -0.72*     | (0.28) | 0.80***     | (0.31) | -0.67      | (0.38) |
| NCP * Weekly participation                                  | -0.21      | (0.26) | 0.30        | (0.31) | -0.10      | (0.38) |
| SDP * Weekly participation                                  | -0.07      | (0.26) | 0.47*       | (0.29) | 0.55       | (0.38) |
| GL * Weekly participation                                   | -0.03      | (0.23) | 0.39        | (0.28) | 0.42       | (0.34) |
| LA * Weekly participation                                   | -0.28      | (0.30) | 0.39        | (0.34) | 0.83*      | (0.38) |
| Other * Weekly participation                                | -0.30      | (0.29) | 0.21        | (0.34) | -0.06      | (0.40) |
| None * Weekly participation                                 | -0.81**    | (0.26) | 0.47        | (0.33) | -0.22      | (0.40) |
| Observations  | 2,735      |        | 2,735       |        | 2,735      |        |
| R-squared   | 0.27       |        | 0.26        |        | 0.23       |        |

Unstandardized coefficients with robust standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$



**Figure 1.** Predictive margins for social media behaviors according to party preference at different levels of politically active social media use.

on the association between party preference and assessed behaviors (see Table 5 and Figure 1).

As shown in Figure 1, those supporters who were politically active on a weekly basis had a higher propensity to use social media in a conformist way among most party groups. However, the association was clearly contrary among the FP supporters ( $B = -0.72$ ;  $p < .05$ ) and those who did not identify with any party ( $B = -0.81$ ;  $p < .01$ ). The

association between politically active social media use and conformist behavior was clearest among the CPF, the SDP, and the GL supporters.

Although online participation had a clear connection to provocative behavior across the party spectrum, the significance of the connection was obviously more pronounced among the FP supporters ( $B = 0.80$ ;  $p < .001$ ). In that result, it is noteworthy that the interaction between online

participation and party affiliation almost entirely explained the tendency for provocative behavior in the FP supporter group.

Finally, we tested the extent to which online participation interacted with the association between party preference and protective behavior. According to the model, we found that the connection between active online participation and protective behavior was strongest among the LA supporters ( $B = 0.83$ ;  $p < .05$ ). [Figure 1](#) shows that the difference between the FP supporters and the SDP, the GL, and the LA supporters was greater when we examined the users who participated politically at least weekly.

## Discussion

In this study, we assessed how political party preference and politically active social media use are associated with social media behavior in Finland's current political context. In the case of Finland, recent research shows that new political questions related to post-materialist and neoconservative values have been particularly prominent in political discussions on social media (Knuutila et al., 2019; Koironen et al., 2020a). In this sense, we aimed to reveal the context-related undercurrents of social media behavior and to discover how political identity is connected to various behavioral tendencies.

Confirming our first hypothesis (H1), political activity on social media was strongly linked to the extent to which various behaviors were applied. The users, who produced or shared political material or participated in political discussions on social media, applied all studied behavior categories more actively. Additionally, the users who participated politically on a weekly basis more actively demonstrated provocative and protective behaviors. In contrast, following political content online was linked only to high rates of conformist behavior while lessening provocative behavior. Overall, the users who were politically active on social media had a strong tendency to leverage various behaviors online, which could be a result of their need to counter negative messages, hate speech, and the suppression of their influence on social media. Thus, various active behaviors became valuable for users out of necessity.

When analyzing the behaviors exhibited on social media by the supporters of various political parties, trends emerged based on ideological leanings. Generally, it seems that there was a greater need for diverse behaviors by the supporters of the new identity parties that are more embedded in social media (see Koironen et al., 2020a, 2017). Second, there were distinctive differences in how the supporters of the populist right-wing party (the FP) and of the liberal, left-wing parties (the GL and the LA) adopted different behaviors. Those parties can be viewed as polar opposites in many ideology-related questions, such as immigration and environmental protection (Koivula, 2019). Thus, it is not surprising that their supporters behaved in very different ways online.

Confirming our second hypothesis (H2), the most noticeable difference in the behaviors of party supporters was observed among those of the FP, who were many times more likely to utilize provocative behavior on social media. The LA supporters were also more likely to display such behavior online when analyzing the direct association between party preference and provocative behavior. This finding seems to show that those farthest from the political center are more likely to leverage provocation for online interaction. Although we found small differences among the party groups, there was a strong general tendency for active online participants to provoke others, regardless of their party preference.

Additionally, our third hypothesis (H3) was verified as supporters of the GL and especially of the LA favored protective behavior. Conversely, the FP supporters were less likely to apply such behaviors. Recent research shows that the Finnish political environment on social media is particularly favorable toward those who foster post-materialist and liberal values and opinions (Koironen et al., 2020). Thus, it seems that advocates of post-materialist values strive to keep their social media content free of dissenting material.

Overall, whereas the GL and the LA supporters tended to moderate their social networks online, the FP supporters did not hesitate to provoke others or express dissenting opinions. One explanation for this might be that as supporters of a populist party (the FP), they have positioned themselves as representing an alternative to the

establishment and media institutions (Hatakka, 2017; Jungar & Jupskås, 2014); therefore, their opinions are often contradictory to the mainstream views. If this is the case, the need for provocation may be deemed necessary to challenge a constant opposing current from more established sources of information.

The observations concerning the differentiation between the parties that rely heavily on post-materialist and neoconservative values and their heightened significance in social media behaviors formed a sort of *defender* and *conqueror* dynamic. Although the behaviors adopted online and the factors affecting those decisions can be understood as strongly linked to users' psychological and emotional characteristics, we argue that the social context is also significant in affecting the subliminal behavioral choices made in terms of varied political backgrounds. Those supporting post-materialist and liberal values made efforts to maintain the ideological environment of their social context through moderating and limiting social networks. Additionally, research shows that politicians supporting those values receive the most harmful content (Knuutila et al., 2019). In this sense, protective methods can come across as constituting a defensive strategy of sorts, in which efforts are made to limit disruptive content from entering a user's social network or interactive space.

Among those wishing to conquer a social space, such as a participant holding more marginalized political views, a major motivator was the ability to influence attitudes and opinions using a public sphere, which can be interpreted as a step toward changing others' opinions or viewpoints. As such, an active stance is central to the success of such a motive-linked provocative behavior. Here, crossing ideological boundaries can be viewed as disruptive and damaging by those who are interested in maintaining a certain ideological status quo in social media sphere.

This study's results show that in general, political activity on social media increases the adoption of all behaviors under our consideration. The exceptions are mostly related to the FP supporters. In this sense, while there are differences in how strongly politically active social media use encourages different parties' supporters to engage in different behaviors, our fourth hypothesis (H4) is not

confirmed. Nonetheless, these findings beg the question of whether social media's negative consequences are the results of highly active users' activities. If the ideal citizen has been described as a socially active participant who follows political and societal events, is able to form one's own opinions based on personal observations, and is actively involved in societal discussions and decision making (Dalton, 2008), what are the implications of our findings? Here, active citizens who have formed a somewhat consistent political party orientation and who avidly participate on social media are also central driving forces in forming echo chambers and joining flame wars, which can be societally harmful in limiting the scope of information, interaction, and civility. These findings illustrate the importance of deliberation, discretion, and openness in social media interactions, given the potential for societal damage through online actions.

As such, the defender-conqueror perspective can be observed in social media phenomena in which echo chambers and flame wars persist. Given this study's findings, it seems that the politicization of social media has partly been propagated by those negative activities. Thus, on one hand, for the sake of individual well-being, it is reasonable to act in ways that could be harmful to the larger society and to limit upsetting and damaging materials in that pursuit. On the other hand, individual expression can be empowering and beneficial for personal development, given appropriate protections. In this sense, it could be argued that individual and collective benefits of different online behaviors share a discordant relation.

This study's findings also shed light on the various behaviors engaged in by supporters of different parties, in addition to the possible background factors at play in forming those behavioral styles. We can conclude that the behavioral models driving echo chambers and flame wars are not solely the results of individual choices but are linked to background factors involving sociodemographic structures, ideological views, and characteristics of party institutions. Ideological positions in the political arena, especially on post-materialist and neoconservative issues, suitable demographic profiles of supporter groups, and party characteristics may encourage those key behaviors.

Naturally, our study has its limitations. First, Finland should not be considered representative of all Western multiparty systems. As we have concluded, the prevailing social order of the political arena leads people to apply a set of chosen and partially reactionary behaviors. In this sense, another social and political context in which power relations among political leanings vary may produce different results. For example, in Hungary or Poland, where right-wing populist parties occupy ruling positions, ideological leanings may propagate behaviors opposite to those observed in the Finnish context. Nonetheless, this research offers a prolific starting point for international comparisons, which may explain the system-level influence of political correlates on social media behavior and in this sense, the undercurrents of echo chambers and flame wars.

Second, although our data represent the Finnish population rather well, there might be biases affecting the validity of our results. Elements of provocative behavior are especially difficult to measure with surveys. As such, future studies should implement several research methods, including social network analysis and various qualitative analysis approaches.

## Notes

1. However, to say that party preference interacts with politically active social media use when assessing communicational behaviors is not to suggest a causal relation between the variables; rather it describes the differences between different party supporter groups when evaluating intensity and direction (negative/positive) of the relation of politically active social media use and utilization of behaviors.
2. The political cleavage between post-materialist and opposing neoconservative values has also been described with other theoretical concepts. For example, the cleavage based on post-materialist values has also been described with the so-called GAL-TAN scale, which is an acronym of the phrases green-alternative-libertarian and traditional-authoritarian-nationalist (Hooghe, Marks, & Wilson, 2002).
3. The final structure of the variables was based on the same factor solution employed by Malinen et al. (2018), but we excluded the item “I hesitate to share content on social media that I feel could lead to disputes” because it loaded on both the conformist and the provocative components.

4. This was the original question asked: “How often do you participate in the following activities?” The respondents had to provide their answers regarding four categories of online activity on a 5-point scale, where 1 meant “never,” 2 meant “less frequently than weekly,” 3 meant “weekly,” 4 meant “daily,” and 5 meant “several hours per day.” The categories of online activity were as follows: 1) follow political and societal discussions on social media, 2) produce or create political or societal content on social media, 3) share political or societal content made by others on social media, and 4) participate in political and societal discussions on social media. With aid of principal factor analysis (PFA), we tested the extent to which the variables are related with each other. PFA results indicate that the latter three variables have high-level of interdependence (factor loadings: 0.756, 0.779, and 0.811), while the first one does not have that clear loading to the factor (0.574). Additionally, as the first variable is measuring whether respondent is following discussion, the latter variables are conditionally related to the first. However, for sake of clarity we present the connections of the individual components to social media behaviors in [Table A1](#).
5. The respondents could choose what they considered the most important party from the list, which consisted of 1) the CPF, 2) the FP, 3) the NCP, 4) the SDP, 5) the GL, 6) the LA, 7) the Swedish People’s Party (SPP), 8) the Christian Democrats (CD), 9) the Blue Reform (BR), 10) another party, and 11) none. Due to a lack of cases, the respondents who chose 7, 8, 9, or 10 were combined into the same group (Other).
6. The original question and answer categories were the same as those for politically active social media use. The categories were as follows: 1) read blogs, 2) comment on blog posts, 3) spend time on discussion forums, 4) comment on discussion forums, 5) spend time on social networking sites, 6) participate in discussions on social networking sites, 7) use instant messaging applications (e.g., WhatsApp, Facebook Messenger), 8) comment on news articles on online news sites, and 9) read other users’ comments on online news sites.
7. The analyses were performed with STATA 16. We utilized the user-written *coefplot* package to illustrate the interaction effects in the [Figure 1](#) (Jann, 2014).

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## Appendices

**Table A1.** Social media behaviors by following political discussion, producing political content, sharing political content, and participating to political discussion, OLS regression analysis with unstandardized coefficients and standard errors.

| VARIABLES                                    | Conformist        |                   | Provocative       |                   | Protective        |                   |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|  | M1                | M2                | M1                | M2                | M1                | M2                |
| <i>Following political discussion</i>        |                   |                   |                   |                   |                   |                   |
| Occasionally                                 | 0.49***<br>(0.04) | 0.29***<br>(0.04) | 0.08*<br>(0.04)   | -0.08*<br>(0.03)  | 0.41***<br>(0.06) | 0.16***<br>(0.06) |
| Weekly                                       | 0.71***<br>(0.04) | 0.32***<br>(0.05) | 0.40***<br>(0.04) | 0.10*<br>(0.04)   | 0.82***<br>(0.06) | 0.37***<br>(0.06) |
| <i>Producing political content</i>           |                   |                   |                   |                   |                   |                   |
| Occasionally                                 | 0.46***<br>(0.05) | 0.13**<br>(0.05)  | 0.61***<br>(0.04) | 0.47***<br>(0.04) | 0.68***<br>(0.06) | 0.31***<br>(0.06) |
| Weekly                                       | 0.69***<br>(0.09) | 0.33***<br>(0.09) | 1.17***<br>(0.07) | 0.84***<br>(0.08) | 0.83***<br>(0.12) | 0.46***<br>(0.13) |
| <i>Sharing political content</i>             |                   |                   |                   |                   |                   |                   |
| Occasionally                                 | 0.58***<br>(0.04) | 0.32***<br>(0.04) | 0.44***<br>(0.03) | 0.35***<br>(0.03) | 0.69***<br>(0.05) | 0.39***<br>(0.05) |
| Weekly                                       | 0.74***<br>(0.07) | 0.33***<br>(0.07) | 1.03***<br>(0.06) | 0.78***<br>(0.06) | 1.02***<br>(0.09) | 0.63***<br>(0.10) |
| <i>Participating to political discussion</i> |                   |                   |                   |                   |                   |                   |
| Occasionally                                 | 0.50***<br>(0.04) | 0.20***<br>(0.07) | 0.53***<br>(0.03) | 0.45***<br>(0.03) | 0.63***<br>(0.05) | 0.33***<br>(0.06) |
| Weekly                                       | 0.55***<br>(0.06) | 0.09<br>(0.13)    | 1.21***<br>(0.05) | 0.98***<br>(0.06) | 0.80***<br>(0.09) | 0.40***<br>(0.10) |
| Observations                                 | 2,734             | 2,682             | 2,734             | 2,682             | 2,734             | 2,682             |

M1: Direct associations

M2: Adjusted associations controlling for gender, age, education and general use of social media

Unstandardized coefficients, robust standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$