

Does Online Incivility Mobilize or Demobilize Political Participation? Evidence From Hong Kong’s Social Movement

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Due to the anonymity of network environments, the use of uncivil words in online political communication has become increasingly pervasive, especially around intensive political events. Existing studies have addressed that exposure to online incivility could influence political participation, but the evidence is mixed. Hong Kong’s anti-Extradition Law Amendment Bill (anti-ELAB) movement, as a heated political issue in recent years, provides an opportunity to investigate the impact of online incivility exposure on participation in a more natural setting compared to experimental design. By combining computational online content and representative survey data, this study found that exposure to online incivility can mobilize both institutionally and non-institutionally political participation. A dissatisfaction mediation model was proposed to explain the mechanism. Dissatisfaction with the democratic situation in Hong Kong was found to be the key mediator.

Keywords: online incivility exposure, political participation, political dissatisfaction, Hong Kong

Political participation is at the core of democracies (Vaccari & Valeriani, 2021). When more people are actively involved in political activities, governments can be more effectively held accountable, and individuals’ opinions and demands can be better represented (Balla, 2012). Online media platforms empower citizens to make their voices heard, raise public awareness, and mobilize political participation (Vissers &

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Stolle, 2014). Meanwhile, the anonymous and unconstrained online environment has become a hotbed of incivility, which violates the social norms people generally share (Santana, 2014). In contemporary political culture, especially during the election season, the use of emotional words in political debates, vivid images of political campaigns, and media portrayals of political conflicts further provoke people to express their stances and viewpoints in an emotional and uncivil way (Chen & Wang, 2022). Therefore, uncivil content, ranging from insults to stereotypes, has become widespread and unavoidable online (Rowe, 2015). In Hong Kong, it was found that the use of foul language grew as the volume of political discussions increased (Lee et al., 2019).

The rise of online incivility has attracted much scholarly attention. Given the vital role of political participation, a growing body of literature has discussed the influence of online incivility on political participation. However, the results are mixed. Several scholars have argued that exposure to online incivility may negatively affect civic outcomes, in particular, demobilizing the electorate (Borah, 2013), while other studies have indicated that online incivility can encourage political participation (Chen, 2017; Su, Scheufele, Brossard, & Xenos, 2021). This difference is because the impact of online incivility and political participation depends on the opinion climate (Masullo, Lu, & Fadnis, 2021), social endorsements (Kim & Park, 2019), the type and proportion of incivility (Wang & Silva, 2018), and so forth. In the current study, we investigate the impact of online incivility exposure on political participation in a more natural setting compared to experimental design, in which we combine individual-level survey data and platform-level characteristic data. We argue that people's participative decision is influenced by their satisfaction with the government (Christensen, 2016). Incivility online is usually used to vent negative emotions and grievances. Thus, this study tries to link incivility exposure and behavioral outcomes by incorporating political dissatisfaction into the framework. Specifically, we identify dissatisfaction with democracy in Hong Kong as the key mediator to explain the mechanism through which incivility exposure has an impact on political participation, and propose the dissatisfaction mediation model.

Media Exposure and Political Participation

Political participation refers to activities by ordinary citizens that are more or less directly aimed at influencing political outcomes such as policies and government action (Van Deth, 2014). Some forms of political participation are electoral-related, such as voting, whereas other modes are nonelectoral-related, such as attending a protest (Bäck, Teorell, & Westholm, 2011). Media exposure has been identified as one of the important predictors of political participation (Corrigall-Brown & Wilkes, 2014). According to the theory of affective intelligence, emotions have strong power to mobilize or demobilize political participation (Lee & Kwak, 2014). Negative emotions such as anxiety drive people to seek more information and become more open-minded. In contrast, anger promotes political mobilization by arousing people's desire to argue with, oppose, and attack others who hold opposing viewpoints to protect their own beliefs (Valentino, Brader, Groenendyk, Gregorowicz, & Hutchings, 2011).

In addition, mediated information also plays a critical role in shaping people's cognition and political attitudes, which are the preconditions for political participation (Moon, 2013). For instance, media exposure can increase political participation by promoting feelings of dissatisfaction and grievance (Harrebye & Ejrnæs, 2015). However, the media malaise theory argues that media is responsible for public cynicism and

disengagement (Elenbaas & de Vreese, 2008). From a resource-based perspective, political information is necessary for political participation (Krueger, 2002). With the advances in information technology, online media platforms can enhance people's access to political information, increase political knowledge, and foster political participation (Kim & Khang, 2014).

Does media exposure have helpful or harmful effects on political participation? In high-choice media environments, people's political attitudes and behaviors are influenced by their selection of and attention to media content (Knobloch-Westerwick, 2014). Viewing news stories that support national development or convey a positive image of the leadership could result in more political trust. In contrast, frequent viewers of negatively framed political news could have more negative attitudes toward political candidates and less confidence in the electoral system (Baumgartner & Morris, 2006). Therefore, exposure to different news media could contribute to varying levels of political involvement (Xia & Shen, 2018).

Online Incivility in Public Discourse

Incivility is difficult to define since what constitutes it is "very much in the eye of the beholder" (Herbst, 2010, p. 3). Approaches rooted in deliberative theories assert incivility is speech that impedes the democratic ideal of deliberation (Papacharissi, 2004). Other scholars (e.g., Coe, Kenski, & Rains, 2014; Mutz & Reeves, 2005; Sydnor, 2019) have considered incivility, akin to impoliteness, as "features of discussion that convey an unnecessarily disrespectful tone toward the discussion forum, its participants, or its topics" (Coe et al., 2014, p. 660). Thus, incivility differs from disagreement or heated discussion in terms of the degree to which individuals show disrespect toward those who voice opposing viewpoints. Muddiman (2017) proposed that incivility can be differentiated into personal and public levels. Personal-level incivility refers to discourse that may be perceived as rude in interpersonal or public exchanges, ranging from name-calling to pejorative speech. Public-level incivility refers to the presence of threats to democracy, the use of stereotypes, and threats to others' rights.

This study mainly focused on personal-level incivility, especially the use of swearing in online discourse. Compared with public-level incivility, personal-level incivility is one of the most common and convenient ways for people to express aggressive emotions and convey an attitude of dissatisfaction (Coe et al., 2014). Following the negativity bias theory, people assign greater weight to negative information than neutral and positive information during information processing (Soroka, 2014). Using swear words can enhance the perceived negativity of comments (Ivory & Kaestle, 2013). Therefore, personal-level incivility strongly affects emotional arousal, perception, attention, and attitude. Moreover, compared with messages delivered in a neutral tone, those infused with high emotional arousal tend to be more rapidly and widely transmitted on social media (Kwon & Gruzd, 2017). As contagion mainly occurs through mimicry, even swearing can collectively spiral into a toxic vernacular culture online, which potentially erodes the civility of online communications (Song, Lin, Kwon, Choy, & Xu, 2022). Swearing is one of the most prevalent forms of incivility online (Coe et al., 2014). Lee and Pang (2014) found that 25% of news comments contained insulting language. Davis (2011) stated that 47% of Facebook walls contain swearing, and about half of Facebook users deem posting profanities acceptable. Given the prevalence of

online incivility, people have higher chances of incidentally encountering or being influenced by personal-level incivility in the online space.

**Online Incivility Exposure and Political Participation:
A Dissatisfaction Mediation Model**

Studies have increasingly found that online incivility plays a vital role in influencing political participation. One example is that the negativity in uncivil comments can arouse people's negative emotions, perceptions, and attitudes, which may mobilize or demobilize political behaviors. While numerous studies have shown that online incivility can increase political participation by triggering negative emotions such as anger and aversion (Borah, 2014; Chen, 2017; Lu & Gall Myrick, 2016), other studies have revealed that exposure to incivility could decrease participatory behaviors via different mechanisms (Kluck & Krämer, 2022; Molina & Jennings, 2018). A recent study found that exposure to incivility increased intrapersonal reflection, in turn influencing people's political attitudes (Mak, Li, & Rojas, 2024). However, the mechanism explaining the relationship between incivility exposure and participation remains inconclusive, and evidence about the linkage between online incivility exposure and participation is mixed (see Table 1).

Table 1. Overview of Studies Using Political Participation as Dependent Variable.

Source	Context	Method	Topic	Incivility manipulation	Medium	Mediator	Moderator	Outcome	Sample	Size	Result
Ng & Detenber (2005)	Singapore	Exp	Water dispute, second troops to Iraq	Name-calling, personal attacks	Online forum			Willingness to participate in the discussion	Student	153	N.S.
Borah (2014)	U.S.	Exp	Gay rights, immigration policy	General	Blog post		News frame	Willingness to participate, online participation	Student	466	+
Han & Brazeal (2015)	U.S.	Exp	Gun control	Insulting and dismissive language	News comments			Willingness to participate	Student	130	-
Pang et al. (2016)	Singapore	Exp	Foreign talent policy	General	News comments		Opinion congruency	Click speech (like/comment/share)	Student	502	-
Lu & Gall Myrick (2016)	U.S.	Exp	Same-sex marriage, gun control, U.S. military attacks on ISIS	Derogatory statements	News comments	Emotion	Opinion congruency	Cheap political activities (share / discussion / pay attention to news)	Student	193	+
Masullo Chen, & Lu (2017)	U.S.	Exp	Abortion	General	News comment		Opinion congruency	Intention to participate politically, likelihood to respond to comments	MTurk	272	+
Chen (2017)	U.S.	Exp	Same-sex marriage, confederate flag, campaign	Profanity, name-calling, yelling	News comment	Emotion	Opinion congruency	Intention to get politically engaged	MTurk	953	+
Molina & Jennings (2018)	U.S.	Exp	GMO labeling	General	News comment	Mental elaboration		Willingness to engage	Student	302	+
Hwang et al. (2018)	U.S.	Exp	Withdrawal from Iraq	Disrespect, insults	Online chatting	Moral indignation, reason recall, open-mindedness	Opinion congruency	Expressed agreement and disagreement	Student	230	+

Table 1. Overview of Studies Using Political Participation as Dependent Variable. (continued)

Source	Context	Method	Topic	Incivility manipulation	Medium	Mediator	Moderator	Outcome	Sample	Size	Result
Wang & Silva (2018)	U.S.	Exp	Gun control, abortion	Insults, mockery	News comment	Emotion	Topic	Facebook participation	MTurk	855	+
Hutchens et al. (2019)	U.S.	Exp	Mountain top removal of coal	General	News comment	Emotion	Group identification, descriptive norms	Intention to engage in online political discussions	Student	263	+
Kim & Park (2019)	U.S.	Exp	Abortion	General	News comment	Perceived polarization, open-mindedness	Group identity, social endorsement	Willingness to comment	MTurk	381	-
Lück & Nardi (2019)	Germany	Exp	Refugees	General	News comment	Open-mindedness, attitude certainty	Opinion congruency	Willingness to talk with the other side	Recruit online	427	-
Otto et al. (2020)	Netherlands, UK, Spain	Exp	GMO labeling of food products	General	News article about debate		Country difference, tolerance for disagreement	Intention to participate in the political discourse	Recruit online	1,038	-
Rossini (2020)	Brazil	Content analysis	Political news	General	News comments			Engagement with disagreement		12,330	+
Gondwe (2020)	Hong Kong	Exp	2019 Hong Kong protests	Good vs. bad incivility	Facebook posts	Information value, message importance		Intention to participate in the online discourse	Recruit online	227	+
Kluck & Krämer (2021)	Germany	Exp	Legalization of marijuana, compulsory military service	Name-calling, vulgarity	Tweet	Attributed motives, hostile trait inferences	Opinion congruency	Willingness to comment	Recruit online	452	-
Masullo et al. (2021)	U.S.	Exp	Childhood vaccines, HPV vaccine, immigration, climate change	General	News comment	Angry, depressed	Opinion climate	Willingness to speak out	Recruit online	1,126	+

Roden & Saleem (2021)	U.S.	Exp	Racism / football players protesting during national anthem	General	Tweet	Anger		Intention to respond to comment	Student	317	+
Liang & Zhang (2021)	Hong Kong	Exp	One country and two systems, basic law juxtaposed border controls	Accusations of lying and vulgarity	News comment	Perceived incivility	Group identity, perceived ambiguity of identifying incivility	Willingness to participate online	Recruit online	1,818	+

Notes. Exp is short for *experiment*; N.S. means the result is nonsignificant.

Incivility is contextual. Previous studies have pointed out that incivility occurs more frequently in negative news reporting and hard news topics such as politics, economy, and foreign affairs (Coe et al., 2014). Increased negative information motivates individuals to invest more cognitive energy in processing a message, and the presence of incivility could further motivate more message attention, which in turn provokes a more negative attitude toward political officials and institutions. Thus, we proposed using the dissatisfaction mediation model to describe the influence of online incivility exposure on political participation.

First, feelings of dissatisfaction are driven by relative deprivation, which emerges when individual expectations and possibilities of their satisfaction contradict. According to the grievance theory, dissatisfaction arising from unfavorable political conditions serves as a motivational factor in explaining political participation (Henry, 2012). Dissatisfaction is a multidimensional concept. Christensen (2016) argues that political dissatisfaction can be divided into two distinct dimensions: reduced political support and personal political disempowerment. The former refers to people's negative evaluation of economic performance, political actors and institutional distrust, and dissatisfaction with how democracy works, while the latter involves feelings of internal political efficacy. Dissatisfaction leads people to take action only when they believe their actions can make a difference. Cameron (2020) claims that dissatisfaction with democracy is a logical consequence of rising economic pessimism. Further, Li (2021) states that compared with economic grievance, dissatisfaction with democracy was a stronger driving force of political action. Thus, in this study, we mainly focus on people's dissatisfaction with democracy.

Second, as a less aggressive and more relatable political attitude than anger, political dissatisfaction can be motivated by incivility (Harrebye & Ejrnæs, 2015). Uncivil words often accompany negative emotions such as anger, frustration, or hostility (Ivory & Kaestle, 2013). Fueling greater hostility, exposure to online incivility could reduce open-mindedness and increase polarization (Hwang, Kim, & Kim, 2018). Moreover, incivility violates social norms for polite expression by disregarding expectations of respect and constructive dialogue. Mutz and Reeves (2005) found that incivility adversely affect the level of political trust, which has a close association with political (dis)satisfaction (Grönlund & Setälä, 2007). A meta-analysis by Van't Riet and Van Stekelenburg (2022) also indicates that online incivility not only alienates individuals from political processes but also amplifies overall discontent with the political system. Therefore, we could expect that exposure to online incivility will increase political dissatisfaction. Since political dissatisfaction was found to motivate people to participate in both institutional (Giugni & Grasso, 2019) and noninstitutional activities (Chan, 2017), we propose the following hypotheses:

H1: Exposure to online incivility is positively associated with political participation.

H2: The relationship between online incivility exposure and political participation is mediated by political dissatisfaction.

Context of the Study: Hong Kong's Anti-Extradition Law Amendment Bill Movement

Hong Kong is a society with a semidemocratic political system. The political organizations can be categorized into two camps: the pro-establishment camp with a left political leaning and the prodemocracy camp with a right political leaning. As media in Hong Kong have their own political stances, exposure to different media content could exert different impacts on people's attitudes toward democracy. More specifically, this study was conducted in the context of Hong Kong's anti-Extradition Law Amendment Bill

(anti-ELAB) movement and the district council elections when people's political enthusiasm reached a historical high. During the period, rounds of mass protests broke out and developed into a widespread social movement (Lee et al., 2019). Against this background, the 2019 Hong Kong district council elections were treated as a de facto referendum on the protests. Close to 3 million people voted in the elections, which was equivalent to 71% of registered Hong Kong voters, reaching a historical peak. This period was also a time when political discussions were highly active, and online forums, especially *LIHKG*, were widely recognized for playing a central role in the movement (Liang & Lee, 2021).

Methods

Data

Our data consist of individual-level survey data and platform content feature data. The volume of incivility one encounters online is an outcome of media preference, media use frequency, and information consumption. Incivility is likely to be found on certain media outlets or platforms due to media attribute differences (e.g., policies, affordances, partisan identity; Su et al., 2018). Therefore, we can construct an indicator of online incivility exposure by combining media consumption and media character data.

Survey Data

The self-reported data come from an online cross-sectional survey with a representative sample of Hong Kong residents. The survey was fielded between March 6 and March 23, 2020, four months after the 2019 Hong Kong district council elections. The survey was contracted out to an international survey company. To achieve better representativeness, we used a stratified quota-sampling method to establish a quota for key demographic features, including age and gender. A total of 1,200 Hong Kong residents ages 18 years and above participated in the survey. The response rate is 20.0%. About 44.5% ($N = 543$) were male, and 60.7% were below 48 years old. More than half of the respondents (50.9%, $N = 611$) had a college degree or above, and 53.5% ($N = 642$) had a monthly family income above HK\$40,000.

Media Content Data

The online media text data come from Hong Kong Online Public Opinion Mining Project (<http://www.webopinion.hk/>), which aims to collect and analyze online public opinions on different issues and topics in Hong Kong. Major online platforms in Hong Kong were included in the project, ranging from discussion forums to news portal sites and alternative news media sites. Two indicators were used for selecting the platforms in Hong Kong: the percentage of visitors from Hong Kong, which ensures that most users of the website are from Hong Kong, and traffic ranking in Hong Kong, which represents the popularity of the platform. We referred to some websites, such as *statista.com* and *semrush.com*, for the statistics of online platforms. We also consulted media experts about the influence of online media during the period under study. Based on these criteria, the selected online platforms were Hong Kong Discussion Forum, Hong Kong Golden, Baby Kingdom, *LIHKG*, *Uwants*, *MemeHK*, *Apple Daily*, *Sing Tao Daily*, *Yahoo*, *HK01*, and *Passion Times*. For each platform, the collected data included both original posts and replies. *Post* refers to the first text posted by users for online forums or news content for news media.

Measures

Political Participation

Survey questions were used to measure an individual's level of involvement in two distinct types of political participation: institutional and noninstitutional. Voting, working for a candidate or political party, and attempting to persuade someone to vote or not are considered institutional political participation, while attending a protest is categorized as noninstitutional political participation (Bimber, Cunill, Copeland, & Gibson, 2015). Voting was measured by asking respondents whether they had voted in the 2019 Hong Kong district council election (0 = never, 1 = yes; yes = 72%). Other electoral-related activities such as "worked for a candidate or a political party" ($M = 0.08$, $SD = 0.28$) and "encouraged others to vote or not vote for a certain party or candidate" ($M = 0.29$, $SD = 0.53$) were measured by asking respondents how frequently they had engaged in the activity on a 3-point scale ranging from "never" to "often." Institutional political participation was measured by counting the number of activities each participant had performed ($M = 1.04$, $SD = 0.79$). Noninstitutional political participation was measured by asking the respondents how frequently they had "attended a political protest" ($M = 0.39$, $SD = 0.59$; 1 = "never," 3 = "often").

Online Incivility Exposure

To measure how much online incivility one gets exposed to, we must know the proportion of online incivility for different media outlets and the frequency of media use at the individual level. The operationalization of online incivility involves the following steps.

First, we calculated the proportion of online incivility for different media outlets during the 2019 Hong Kong district council election. Online incivility calculation was based on text mining. We adopted a dictionary (CyberCan) for Cantonese social media text segmentation (Shen et al., 2021). Conceptually, swearing is one of the most prevalent forms of incivility online (Lee & Pang, 2014). Methodologically, as swearing is one of the most commonly employed linguistic tactics used to express strong emotion, it is more easily identified through text analysis than implicit incivilities such as mockery and aspersion. A typical example of swear words in Cantonese social media is *buk-gaai*, which means "hit the street to death."

Second, we calculated the number of texts with swear words for each online media platform. By matching the texts and the list of swear words, the volume of online incivility was calculated. Brosius, van Elsas, and de Vreese (2019) argued that a minimum of 10 weeks of media content could capture individual news consumption. Therefore, since we were interested in people's attitudes and behaviors during the 2019 Hong Kong district council election, we selected three months before the election day (September 2, 2019) as the starting point and November 25, 2019, as the endpoint.

Third, online incivility was calculated by counting the frequency of swear words in each media outlet during these three months, divided by the total number of pieces of text from that outlet during the period. At the time under study, the number of posts on each platform is quite uneven. Using the absolute number of swear words could not capture the volume of online incivility one would encounter. Instead, we used the proportion of swear words to better capture the volume of incivility in the online environment. The process of constructing the new dictionary and calculating the proportion of online incivility is shown in Figure 1.

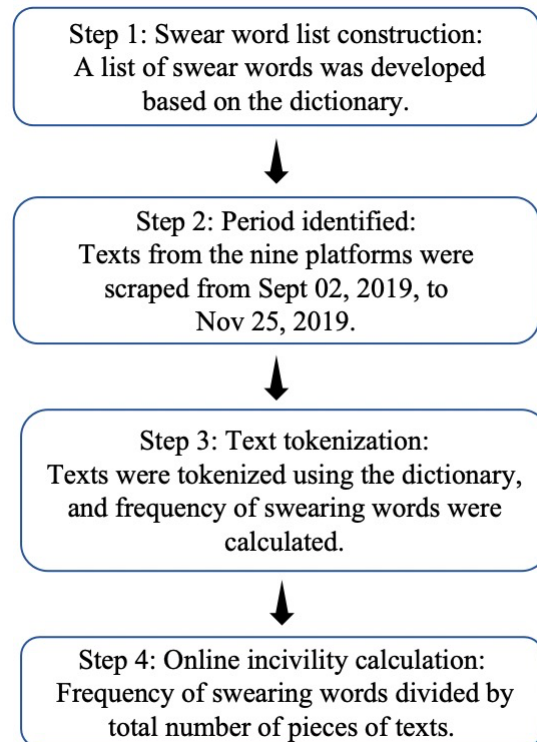


Figure 1. Process of online incivility calculation.

Fourth, after determining the proportion of incivility for each platform, we obtained individual media use frequency for each media outlet. In the survey, we asked respondents the frequency with which they used each online media outlet listed in the above section in a typical week on a 7-point Likert scale (1 = one day per week, 7 = seven days per week). Two of the 11 media platforms, *Apple Daily* and *Sing Tao Daily*, were excluded from the analysis because they are newspapers that have printed versions, which may lead to bias when measuring online media consumption. Therefore, nine online media platforms were included in the statistical analysis. Finally, we calculated the score of incidental online incivility exposure for each individual by combing online media data and survey data, as follows:

$$Exposure_x = \sum_{i=1}^9 m_i * s_{x,i}$$

where the value for $exposure_x$ is the score for respondent x at this period, m_i is the proportion of incivility for outlet i , and $s_{x,i}$ is the self-reported media use of respondent x for outlet i . A score of zero in the final variable indicates that the respondent did not encounter any swear words either because they did not use any of the outlets or because the outlets did not contain any uncivil expressions. Higher values indicate that a respondent frequently used one or more online media outlets that have a higher proportion of incivility ($M = 0.29$, $SD = 0.51$).

Political Dissatisfaction

In this study, we mainly focused on people's dissatisfaction with democracy. Political dissatisfaction was measured by asking about respondents' levels of satisfaction with the degree of democracy in Hong Kong. Answers were coded by a 4-point scale spanning from 0 (not satisfied with the degree of democracy) to 3 (very satisfied with the degree of democracy; $M = 1.16$, $SD = 0.91$). For better understanding, each answer was reverse coded, where 1 indicates "very satisfied" and 4 indicates "very dissatisfied" ($M = 2.84$, $SD = 0.91$). A single-item measure for political dissatisfaction is appropriate when the goal is to efficiently and straightforwardly capture general dissatisfaction, especially in the context of broad surveys or studies where brevity and directness are key priorities (Cohen, 2020; Dalton, 2004).

Control Variables

Numerous variables, including demographic characteristics, political ideology, traditional media use, and online media use, were included as controls. Demographic variables consisted of age, gender, education, and income. Traditional media use for election information was measured by asking respondents how frequently they read newspapers and watched TV to acquire information about the election. The answers range from 0 (never) to 4 (almost every day). The variable of traditional media use was created by averaging these two items ($M = 2.65$, $SD = 1.20$, $\alpha = 0.80$). Online media use was measured by asking respondents to report their frequency of obtaining election-related information through different online outlets: news media, personal accounts of political parties or candidates, online friends, other Internet users, and other information channels (0 = never, 4 = almost every day). An index of acquisition of political information from digital media was created by averaging these items ($M = 2.27$, $SD = 0.88$, $\alpha = 0.79$). Media use was controlled because it could influence political participation (Bimber et al., 2015). Political ideology was measured by asking respondents' political stance on a 10-point left-right spectrum ($M = 5.88$, $SD = 1.76$), where 0 refers to pro-establishment and 10 refers to prodemocracy. Political ideology was also included as a control variable since it is an important determinant of political participation (van der Meer, van Deth, & Scheepers, 2009).

Data Analysis

OLS regressions were conducted to analyze the impact of online incivility on both institutional and noninstitutional political participation. We first fit a baseline model, which included only control variables. Online incivility exposure was added to the baseline model stepwise. Then we examined the mediation effect of political dissatisfaction. Data analysis was performed using SPSS and PROCESS (Model 4).

Results

Descriptive Analysis

Among 1,200 respondents, more than 70% had voted in the 2019 Hong Kong district council election (yes = 71.3%). About 33.5% of participants "sometimes" or "often" had participated in protests in the past year, followed by persuading others to vote (25.2%) and working for a candidate or political party (7.1%).

As for media exposure, we found considerable differences in media outlet preferences. In Hong Kong, people were more likely to visit *HK01* ($n = 443$, 36.92%), followed by *Yahoo News* ($n = 429$, 35.75%) and *LIHKG* ($n = 212$, 17.67%). In comparison, *MemeHK* ($n = 31$, 2.58%), *Uwants* ($n = 52$, 4.33%), and *Baby Kingdom* ($n = 76$, 6.33%) were less popular. In addition, one-third of people ($n = 400$) had used none of the nine aforementioned media platforms, while 39% ($n = 468$) admitted using multiple media outlets for news consumption. As shown in Table 2, the proportion of online incivility varies across different online platforms. In general, *LIHKG* had the highest ratio of incivility content, followed by Hong Kong Discussion Forum and *Uwants*. Overall, nearly 40% of people ($n = 477$) encountered no uncivil content online, while 12% were exposed to a high volume of uncivil content through various media platforms.

Table 2. Proportion of Incivility Across Different Media Platforms from September 2, 2019, to November 25, 2019.

	Website URL	Incivility Proportion (%)
Discussion Forums		
Hong Kong Discussion Forum (香港討論區)	http://www.discuss.com.hk/	7.69
LIHKG (LIHKG 討論區)	https://lihkg.com/category/1	21.51
Hong Kong Golden (香港高登)	https://forum.hkgolden.com/channel/BW	1.28
Uwants	https://www.uwants.com/	2.96
Baby Kingdom (親子國王論壇)	https://www.baby-kingdom.com/forum.php	0.10
Online News Media		
MemeHK (謎米香港)	http://memehk.com/	2.61
Yahoo (雅虎香港)	https://hk.yahoo.com/	1.63
HK01 (香港 01)	https://www.hk01.com/	0.11
Passion Times (熱血時報)	http://www.passiontimes.hk/4.0/index.php	1.19

Hypothesis Testing

H1 proposes that online incivility exposure is positively associated with political participation. As shown in Table 3, political participation was highly associated with respondents' demographic characteristics, political ideology, and media use. Education level ($b = 0.07$, $p < .01$), political ideology ($b = 0.04$, $p < .01$), traditional media use ($b = 0.10$, $p < .001$), and online media use ($b = 0.17$, $p < .001$) were positively associated with institutional participation (Model 1). In contrast, noninstitutional political participation was negatively associated with age ($b = -0.01$, $p < .001$), but positively associated with education ($b = 0.05$, $p < .01$), political ideology ($b = 0.07$, $p < .001$), traditional media use ($b = 0.06$, $p < .001$), and online media use ($b = 0.14$, $p < .001$; Model 4). After controlling for these variables, results showed that online incivility exposure was positively associated with both institutional political participation ($b = 0.24$, $p < .001$) and noninstitutional political participation ($b = 0.25$, $p < .001$). H1 was supported.

H2 hypothesizes that political dissatisfaction mediates the relationship between online incivility exposure and political participation. As Table 3 shows, online incivility exposure was positively associated with political dissatisfaction ($b = 0.18, p < .01$; Model 8). Political dissatisfaction was, in turn, positively associated with institutional ($b = 0.07, p < .05$) and noninstitutional political participation ($b = 0.19, p < .001$; Models 3 and 6). We used PROCESS Macro Model 4 (Hayes, 2013) to test the indirect effect. Using the bootstrapping technique (5,000 resamples), we analyzed 95% confidence intervals of the size of the indirect effect. The 95% confidence interval did not contain zero (institutional: effect = 0.01, $SE = 0.01$, 95% $CI = [0.01, 0.03]$; noninstitutional: effect = 0.03, $SE = 0.01$, 95% $CI = [0.02, 0.06]$). H2 was supported. The dissatisfaction mediation model is shown in Figure 2.

Notably, institutional political participation and noninstitutional political participation were highly correlated ($r = 0.50$). Thus, we conducted seemingly unrelated hierarchical regression for robustness testing. The results remained the same.

Table 3. Exposure to Online Incivility, Political Dissatisfaction, and Political Participation.

	Institutional participation			Noninstitutional participation			Political dissatisfaction	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Constant	0.09 (0.19)	0.06 (0.19)	-0.09 (0.20)	-0.32* (0.14)	-0.35* (0.14)	-0.77*** (0.14)	2.31*** (0.21)	2.29*** (0.21)
<i>Control variable</i>								
Sex (1 = female)	-0.06 (0.05)	-0.04 (0.05)	-0.04 (0.05)	-0.06 (0.04)	-0.04 (0.04)	-0.04 (0.03)	-0.01 (0.06)	0.00 (0.05)
Age	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00* (0.00)	-0.02*** (0.00)	-0.02*** (0.00)
Income	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.02 (0.02)	-0.04 (0.03)	-0.03 (0.03)
Education	0.07** (0.02)	0.07** (0.02)	0.07** (0.02)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.02 (0.03)	0.02 (0.03)
Political ideology	0.04** (0.01)	0.03* (0.01)	0.03 (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.05*** (0.01)	0.12*** (0.02)	0.11*** (0.02)
Traditional media	0.10*** (0.02)	0.09*** (0.02)	0.09*** (0.02)	0.06*** (0.02)	0.05** (0.02)	0.04** (0.02)	0.06* (0.03)	0.05 (0.03)
Online media use	0.17*** (0.03)	0.13*** (0.03)	0.13*** (0.03)	0.14*** (0.02)	0.11*** (0.02)	0.09*** (0.02)	0.12*** (0.03)	0.09** (0.03)
<i>Independent variable</i>								
Exposure to incivility		0.24*** (0.05)	0.23*** (0.05)		0.25*** (0.03)	0.21*** (0.03)		0.18** (0.05)
<i>Mediator</i>								
Political dissatisfaction			0.07* (0.03)			0.19*** (0.02)		
R2 (%)	11.8	14.1	14.6	20.3	24.4	30.6	15.6	16.7

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.

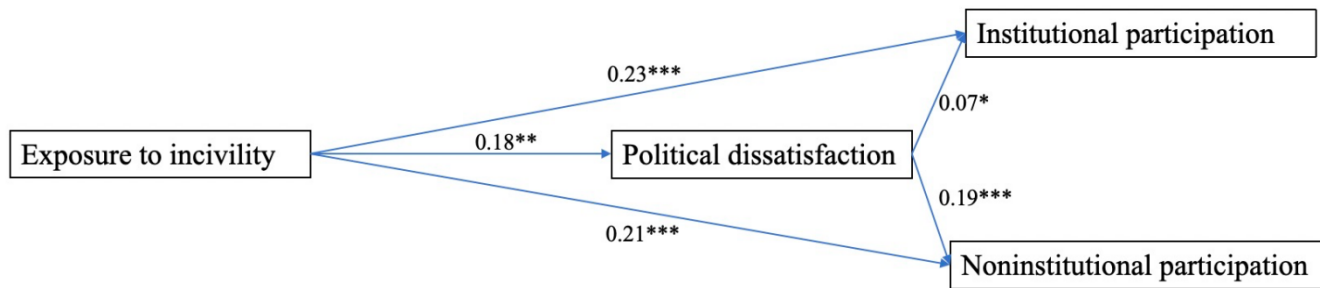


Figure 2. Result of dissatisfaction mediation model.

Discussion

This study explored the impacts of digital media use for political information and online incivility exposure on political participation. In addition, we tested political dissatisfaction as a mediator to explain the mechanism. The analytical setup shed some light on the literature of online incivility. We constructed an indicator of online incivility exposure by combining online media content data and individual behavioral data. Therefore, it can capture the amount of online incivility one encounters in a highly personalized media environment. Online incivility exposure in existing research is mostly examined by the forced-exposure approach, which measures it through manipulating exposure to specific uncivil content (e.g., Pang et al., 2016; Wang & Silva, 2018). Our construction of measurement adds to the literature of incivility by taking another approach, which could deepen the understanding of the effects of online incivility exposure.

Our study yields interesting findings worthy of discussion. First, it provides empirical evidence that online incivility occurs widely in Hong Kong media platforms in the aftermath of the social movement, and the proportion of online incivility varies across different media platforms. Incivility is much higher in online forum discussions than in online news media comments. Unlike news media, which is full of well-crafted news stories or features by someone professionally trained in journalism, posts on discussion forums typically align with an ideological leaning. Moreover, owing to their lesser degree of content control, online forums invite people to post more negative, polarized, and aggressive content (Seely, 2018). During the Anti-ELAB movement in 2019, online forums such as *LIHK* became the digital sphere where participants shared information, discussed tactics, and generated discourses (Lee, Nanz, & Heiss, 2022). As a socialization process, participating in online political discussion leads individuals to treat incivility as acceptable. People were inclined to use uncivil, critical language themselves when discussing political issues online (Hmielowski, Hutchens, & Cicchirillo, 2014).

Second, we found that the dissatisfaction mediation model is an appropriate model for disentangling the linkage between online incivility and political participation. Exposure to online incivility from various media platforms provokes political dissatisfaction, which promotes higher enthusiasm for political involvement. Our study was conducted during the Hong Kong's 2019 district council elections when the political atmosphere was tense since the election results would be seen as a test of support for the government after months of unrest, protests, and clashes. Facing intensive political events, people tended to become more active and aggressive in political communication (Boczkowski & Mitchelstein, 2013). As online incivility exposure provokes a higher level of political dissatisfaction, people would be motivated to participate in protests or demonstrations to vent their dissatisfaction (Chan, 2017) or to vote against the incumbent (Giugni & Grasso, 2019). Importantly, we found that the correlation coefficient between political dissatisfaction and noninstitutional participation is much higher than that with institutional participation. One possible explanation could be that political dissatisfaction frequently stems from a perception that institutions are ineffective, untrustworthy, or unresponsive. This alienation naturally reduces engagement with institutional processes while driving alternative means of participation (Portos, 2021).

Moreover, Hong Kong's media landscape is notably polarized between prodemocracy and progovernment outlets. This raises the question: Does the impact of online incivility on political dissatisfaction and participation vary between these media types? To clarify this issue, we divided the different types of media platforms into two categories: progovernment and prodemocracy. Results showed

that exposure to prodemocracy incivility ($b = 0.36, p < .001$) was positively associated with political dissatisfaction, while exposure to progovernment incivility ($b = -0.89, p < .001$) was negatively associated with political dissatisfaction. Driven by political dissatisfaction, prodemocracy incivility leads to noninstitutional political participation (effect = 0.06, $SE = 0.01$, 95% $CI = [0.04, 0.08]$), whereas progovernment incivility decreases individuals' enthusiasm for protest (effect = $-0.14, SE = 0.03$, 95% $CI = [-0.21, -0.08]$). However, neither progovernment incivility nor prodemocracy incivility indirectly affects institutional political participation through political dissatisfaction. Further, by testing the moderating role of political ideology between incivility exposure and political dissatisfaction, we found that prodemocratic individuals' exposure to incivility in prodemocracy platforms was more likely to arouse political dissatisfaction (see the appendix). Inconsistent with previous studies that found exposure to attitude-incongruent messages was more likely to arouse readers' negative emotions (Chen, 2017), our study demonstrated that incivility serves to reinforce existing dissatisfaction among those already inclined toward prodemocracy views, pushing them toward more radical or noninstitutional forms of participation.

Third, our results suggest that the acquisition of political information from digital media increases political participation. As shown in Table 3, informational online media use still exerts a positive impact on political participation (institutional: $b = 0.13, p < .001$; noninstitutional: $b = 0.14, p < .001$), with online incivility exposure included in the model. However, compared with exposure to online incivility, we found that the explanatory power of online incivility exposure was greater than informational media use when we compared their direct effect size on noninstitutional political participation (online incivility exposure: R^2 change [%] = 4.1; media use: R^2 change [%] = 3.5). The results reveal that online incivility exposure has a more substantial effect on protest than the use of digital media does. This result aligns with recent scholarly work highlighting the role of highly intense emotions in promoting political participation in networked movements (Lee & Kwak, 2014). As high-arousal emotions appear, incivility contributes to a stronger emotional outburst (Song et al., 2022). Therefore, when people go online to obtain information, the more uncivil content they encounter, the higher the chances they would be motivated to participate in noninstitutional political activities.

This study has several limitations. First, we calculated online incivility based on a dictionary, which only enables us to identify explicit swear words. It is not capable of capturing other forms of incivility such as name-calling or mockery. Although we are aware that media platforms in Hong Kong span a spectrum of political orientations, reliance on a dictionary-based approach to gauge online incivility does not allow us accurately to discern or categorize texts based on their political leanings. This limitation impedes our ability to fully grasp the nuanced relationship between media content and the political attitudes of users. Future studies could adopt more advanced methods to analyze the media's impact on political behavior and opinions. Second, we calculate online incivility exposure at a general level, but not about specific events such as the anti-ELAB movement or elections. Therefore, the proportion of incivility may involve swear words about other nonpolitical topics. Third, despite recognizing political efficacy and interest as core predictors of political participation, our study did not include them as control variables. Our results show a partial mediation effect for political dissatisfaction, indicating there are other potential mediators explaining the mechanism. Given that previous studies have identified some mediators such as emotions and individual characteristics, future research may consider exploring potential mediators such as cognitive reasoning and political efficacy.

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Appendix

Appendix Table 1. Exposure to Prodemocracy Incivility and Progovernment Incivility, Political Dissatisfaction, and Political Participation.

	Political dissatisfaction	Institutional participation		Noninstitutional participation	
Constant	2.310 (.204)	.071 (.190)	-.041 (.202)	-.334* (.133)	-.700*** (.137)
<i>Control variable</i>					
Sex (1 = female)	-.006 (.053)	-.046 (.049)	-.046 (.002)	-.047 (.034)	-.046 (.033)
Age	-.012*** (.002)	.000 (.002)	.001 (.002)	-.004** (.001)	-.003 (.001)
Income	-.037 (.025)	-.021 (.024)	-.019 (.024)	-.028 (.017)	-.022 (.016)
Education	.016 (.024)	.071** (.023)	.070** (.023)	.047** (.016)	.044** (.015)
Political ideology	.106*** (.014)	.032* (.013)	.027 (.014)	.064*** (.009)	.047*** (.009)
Traditional media	.055* (.025)	.094*** (.023)	.092*** (.023)	.057*** (.016)	.049** (.016)
Online media use	.104** (.033)	.136*** (.031)	.131*** (.031)	.112*** (.022)	.096*** (.021)
<i>Independent variable</i>					
Progovernment incivility	-.891*** (.149)	-.174 (.138)	-.131 (.141)	-.433*** (.097)	-.292** (.096)
Prodemocracy incivility	.358*** (.056)	.311*** (.052)	.293*** (.053)	.357*** (.037)	.301*** (.036)
<i>Mediator</i>					
Political dissatisfaction			.048 (.030)		.158*** (.021)
R ² (%)	21.6	15.1	15.3	28.6	32.9

Notes. * $p < .05$, ** $p < .01$, *** $p < .001$.

Progovernment platforms: *Hong Kong Discussion Forum, Baby Kingdom, Uwants.com, Sing Tao Daily, Yahoo, HK01.*

Prodemocracy platforms: *Hong Kong Golden, LIHKG, MemeHK, Apple Daily, Passion Times.*

On average, the proportion of incivility on prodemocracy platforms ($M = 0.20$, $SD = 0.46$) is higher than that on progovernment platforms ($M = 0.09$, $SD = 0.16$).

**Appendix Table 2. Conditional Indirect Effect of Incivility Exposure on Political Participation
(Moderator: Political Ideology).**

	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation
Constant	2.17*** (0.22)	-0.01 (0.20)	-0.62 (0.14)	2.23*** (0.21)	0.04 (0.19)	-0.55*** (0.14)	2.20*** (0.21)	0.04 (0.20)	-0.55*** (0.14)
<i>Control variable</i>									
Sex (1 = female)	0.00 (0.05)	-0.04 (0.05)	-0.04 (0.03)	-0.00 (0.05)	-0.05 (0.05)	-0.05 (0.03)	-0.00 (0.05)	-0.05 (0.05)	-0.05 (0.03)
Age	-0.01*** (0.00)	0.00 (0.00)	-0.00* (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.00** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.00 (0.00)
Income	-0.03 (0.03)	-0.02 (0.02)	-0.02 (0.02)	-0.04 (0.03)	-0.02 (0.02)	-0.02 (0.02)	-0.04 (0.03)	-0.02 (0.02)	-0.02 (0.02)
Education	0.02 (0.03)	0.07** (0.02)	0.05** (0.02)	0.02 (0.02)	0.07** (0.02)	0.05** (0.02)	0.02 (0.02)	0.07** (0.02)	0.05** (0.02)
Traditional media	0.05 (0.03)	0.09*** (0.03)	0.04** (0.02)	0.06* (0.03)	0.09*** (0.02)	0.05** (0.02)	0.06* (0.03)	0.09*** (0.02)	0.05** (0.02)
Online media use	0.09** (0.03)	0.13*** (0.03)	0.09*** (0.02)	0.11** (0.03)	0.13*** (0.03)	0.10*** (0.02)	0.10** (0.03)	0.13*** (0.03)	0.10*** (0.02)
<i>Independent variable</i>									
Incivility	0.43** (0.16)	0.23*** (0.05)	0.22*** (0.03)						

**Appendix Table 2. Conditional Indirect Effect of Incivility Exposure on Political Participation
(Moderator: Political Ideology). (continued)**

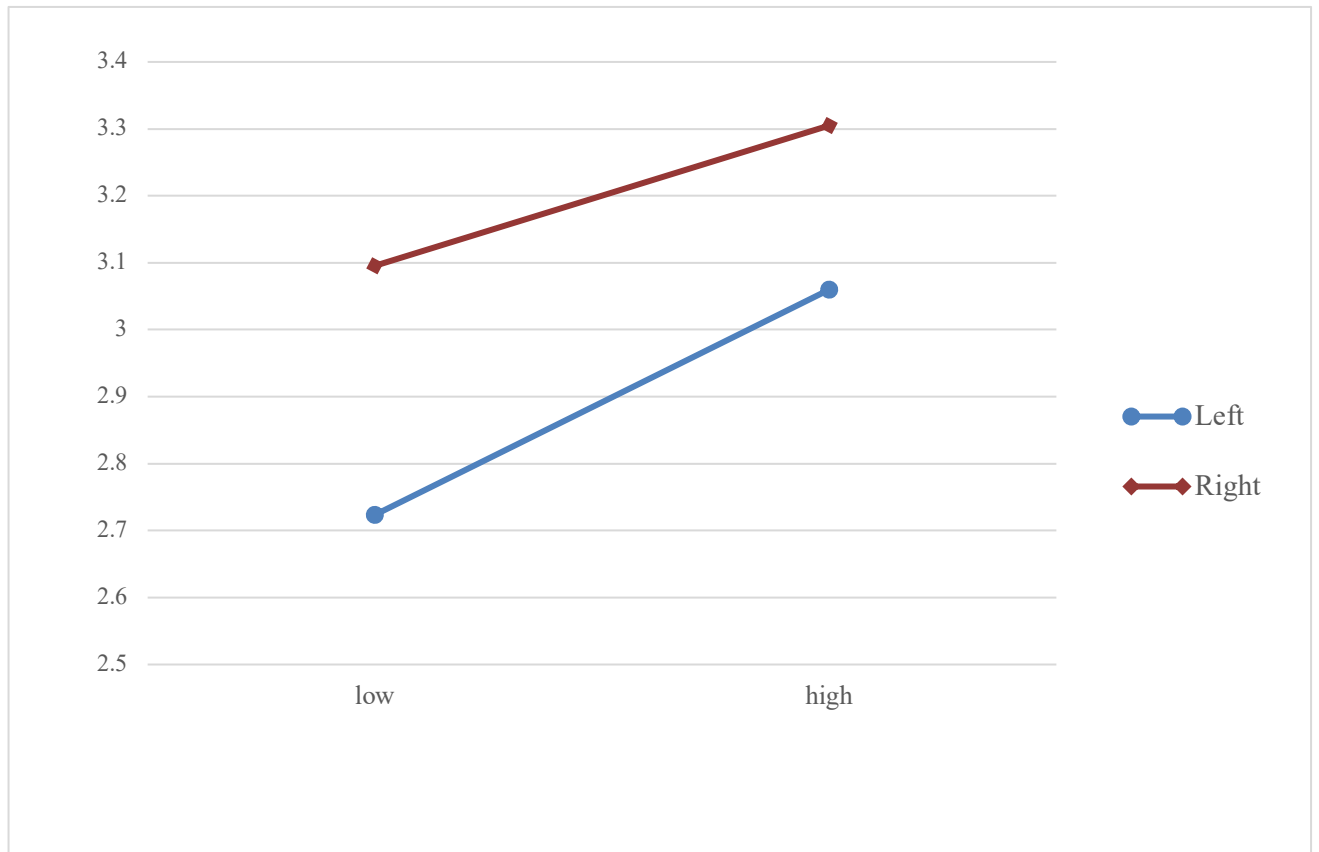
	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation
Progovernment incivility				-0.29 (0.49)	-0.13 (0.14)	-0.29** (0.10)	-0.91*** (0.15)	-0.13 (0.14)	
Prodemocracy incivility				0.35*** (0.06)	0.30*** (0.05)	0.31*** (0.04)	0.68*** (0.17)	0.30*** (0.05)	0.31*** (0.04)
<i>Moderator</i>									
Political ideology	0.13*** (0.02)			0.12*** (0.02)			-0.12*** (0.02)		
<i>Interaction</i>									
Incivility* Political ideology	-0.04 (0.02)								
Progovernment incivility* Political ideology				0.14 (0.08)					
Prodemocracy incivility* Political ideology							-0.05* (0.03)		
<i>Mediator</i>									

Appendix Table 2. Conditional Indirect Effect of Incivility Exposure on Political Participation (Moderator: Political Ideology). (continued)

	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation	Political dissatisfaction	Institutional participation	Non institutional participation
Political dissatisfaction		0.08** (0.05)	0.21*** (0.03)		0.06* (0.03)	0.18*** (0.02)		-0.06* (0.03)	0.18*** (0.02)
R ²	0.17	0.14	0.29	0.22	0.15	0.31	0.22	0.15	0.31

	Index	BootSE	BootLLCI	BootULCI
Prodemocracy incivility → political dissatisfaction → institutional participation	-.0032	.0023	-.0085	.0000
Prodemocracy incivility → political dissatisfaction → noninstitutional participation	-.0096	.0045	-.0188	-.0012
Progovernment incivility → political dissatisfaction → institutional participation	-.0063	.0082	-.0262	.0061
Progovernment incivility → political dissatisfaction → noninstitutional participation	-.0185	.0199	-.0595	.0190
Incivility → political dissatisfaction → institutional participation	-.0033	.0028	-.0101	.0009
Incivility → political dissatisfaction → noninstitutional participation	-.0085	.0059	-.0203	.0030

Note. * $p < .05$, ** $p < .01$, *** $p < .001$.



Appendix Figure 1. The interaction effect of exposure to prodemocratic incivility and political ideology (left or right) on political dissatisfaction.