Social Media and Protest Behavior in a Restrictive Traditional Media Environment: The Case of the Philippines

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Survey research focused on the effects of social media (SM) on protest behavior outside Western democracies is limited. In response, we designed and conducted a large N face-to-face survey in the Philippines, where pro-government elite families control the traditional press, but the same constraints do not apply to SM. This helps us to isolate SM effects on protest behavior since the online environment in the Philippines is one of the few places where there is an open flow of information. Adding gradations to common indicators of SM consumption (by measuring general SM use, political SM use, and the exchange and consumption of dissident information on SM) helps clarify the mechanism by which SM influence protest behavior. Our results indicate that online exchanges of dissident information have a stronger connection to protest behavior than general or even political SM use.

Keywords: social media, political protest, dissident information, traditional media, Philippines

In this research, we use original survey data to consider the impact of the growing use of social media (SM) on political attitudes and behaviors in the Philippines. As a source of information that is often outside traditional government regulation and the control of existing elite-business ties, SM may provide an alternative viewpoint that can shift opinions, and thereby increase dissident attitudes and resulting behavior. As critical information is much more likely to appear in SM than in traditional regulated media (Gainous, Wagner, & Ziegler, 2018; Tufekci & Wilson, 2012), the consumption of SM will expand the opportunity structure for the dissemination of critical information, resulting in more dissident views. In the Philippines, the introduction of a mostly open online media space interjects a new variable into an environment where the public is accustomed to traditional print and broadcast media constrained by elite actors. This allows us to consider and isolate the effects of these new online

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platforms in an understudied environment. Our data set and the unique context of the Philippines provide the opportunity to consider both the impact of SM broadly and the nature of the online exchanges in the production of political attitudes and behaviors.

Using the broadest lens, we find support for previous research indicating that SM are politically consequential in restrictive media environments (see Tucker, Theocharis, Roberts, & Barberá, 2017). However, since we were able to design and implement an original large N face-to-face survey in the Philippines, we measured some SM consumption concepts not available in typical public omnibus survey data. In doing so, we were able to explore different categories of SM usage across differing contexts as well as the necessary conditions for SM to be consequential for political protest. More directly, we can do more than simply explore the broad effects of SM. We can identify and isolate the actual online activities that result in behavioral change. Our results provide support for the theory that it is not the general or even the political SM use that drives protest attitudes and behavior. Instead, it is critical online exchanges that occur on the digital platform that lead to protest behaviors. After laying out in detail our theoretical framework, we provide some background context about the political and media landscape that makes the Philippines an interesting case for this examination and then measure and analyze the relative effects on political protests of various types of citizen engagement with this new media environment.

The Internet, Information, and the Case of Less Democratic States

Online media platforms present a new opportunity structure for the distribution of political information and a more open venue for political engagement. Early scholarship suggested that the Internet is a new public sphere that affords opportunities for formerly ignored or even excluded participants to engage with the political system (Barber, 2001; Corrado & Firestone, 1996). Research in this area suggests that Internet use has a positive relationship with political participation (Bode, 2012; Boulianne, 2009, 2015; Gainous, Marlowe, & Wagner, 2013; Gainous & Wagner, 2014; Gil de Zúñiga, Jung, & Valenzuela, 2012; Pasek, More, & Romer, 2009; Xenos & Moy, 2007). Indeed, the use of SM websites may be as significant a predictor of political participation as socioeconomic status (SES; Xenos, Vromen, & Loader, 2014).

The political environment, the means of access and distribution, and the level of trust in the particular media platform mediate the effectiveness of digital and traditional media across different states and systems (Müller, 2013). Online influences in closed, or semi-democratic, states present an opportunity to explore these effects. In such states, SM can be seen as a means for political mobilization and/or for the dissemination of dissenting information where previously there were limited avenues for either. Where restrictive laws and the relationship between the media and local political elites (such as in the Philippines) frequently constrain traditional media, the use of the Internet may create unprecedented opportunities for generating protests (see Gainous, Wagner, & Abbott, 2015). Indeed, in regimes that have controlled the traditional media for decades, information communication technologies may exploit vulnerabilities and become the catalyst for political transformation (Bailard, 2014; Gainous, Wagner, & Gray, 2016; Howard, 2011; Wagner & Gainous, 2013).

The Internet thus becomes a mechanism for political transformation by creating a space where like-minded people meet, share, and disseminate information (Chadwick & Howard, 2010; Gil de Zúñiga & Valenzuela, 2011; Valenzuela, 2013). As trust in new media platforms increases, traditional media will come under challenge and attitudes change. In this context, we expect online engagement to lead to deviations in attitudes about governance and changes in any resulting protest-centered behavior (Valenzuela, 2013). We extend this work by isolating the SM effects on protest behavior since the online environment in the Philippines is one of the few places in that nation where there is an open flow of information. In particular, we add gradations to common indicators of SM consumption to explore the mechanism by which SM influence protest behavior. It is not just the consumption of SM that matters but rather the online exchanges of dissident information that drive protest attitudes and behaviors.

Dissident Flows and Activist Participation

One challenge in measuring the impact of the Internet and SM on support for protests is understanding not just that people use social platforms but how differences in use may influence behavior. Other scholars have already shown that where states constrain political participation and communication, the Internet can become a new political arena enabling new forms of political mobilization (Gil de Zúñiga et al., 2012). A non-elite controlled stream of political information can reshape the political environment by providing a forum for alternative messaging. Despite the possibilities of blocking and filtering content on the Internet, many nations do not have the necessary tools and procedures at their disposal to control or limit online platforms (Howard, 2011).

As a result, the Internet has been seen as a mechanism for potentially altering the structure of an otherwise closed nation's political sphere. On SM, political mobilization, communication, and the dissemination of information can all occur, changing the very nature of political players and the ways in which they engage with society as a whole (Abbott & Givens, 2015). This is especially true where political information reinforces the undemocratic nature of state institutions or, as in the case of the Philippines, challenges the dominant elite political-corporate ties. Here, the Internet creates a new avenue for the dissemination of dissident information and provides a venue for political organization that can challenge the status quo (Howard, 2011).

However, simply correlating online activity or even SM platforms with political participation misses a larger narrative. While platform choice can begin to suggest different online behavior (Oates, 2013), those measures do not specifically address the nature of online communication or its variances inside a particular platform. It is not the platform that influences opinions but the nature of the content consumed. Actively using the online sharing platform Instagram to view and exchange images does not strongly influence political attitudes. What matters is if the images are political or not. Political scientists have long known that the effect of social engagement on political participation is contingent on the amount of political discussion that takes place in people's social networks (McClurg, 2003).

Sharing recipes online through SM may generate a form of social capital, but little by way of political influence (see La Due Lake & Huckfeldt, 1998). Scholars, therefore, need to not only measure the broad category of Internet use, or the popularity of online platforms, but also look at the *nature* of the online

content. While general SM use or even political SM use may be associated with protest attitudes and behaviors, we posit that online exchanges of critical information about the state should be the drivers of those results. The following hypotheses are thus proposed:

H1:   Exchanges of critical information on social media are positively associated with support for protests.

H2:   Exchanges of critical information on social media are positively associated with protest activity.

We use the Philippines to explore if different usage patterns for SM generate differing effects on behavior. We expect that the entrance of SM platforms in closed states will lead to the creation of competing publics with divergent attitudes if there is an exchange of political information. Furthermore, among consumers of SM making critical exchanges, there will be greater distrust in the state and traditional media, and as a result, increasing amounts of nontraditional political participation such as demonstrations and protests. The existence of unfiltered alternative news platforms with critical exchanges will challenge dominant narratives and eventually lead to greater dissatisfaction with the government. We test these assumptions below as we explore the mechanisms underlying the influence of SM. However, we begin by describing in detail why the Philippines provides a valid test case.

The Philippines: A Free Internet in a Restrictive Media Environment

Unsurprisingly, most political regimes that have a restrictive media environment are either authoritarian or, at best, quasi-democratic. Such regimes use a panoply of measures to constrain the freedom of the media. These range from legal constraints on expression and information to state control of the media. Even with the latter, there are enormous differences between monopolistic ownership by the regime to murky political-corporate ownership structures that give little coverage to voices critical of the status quo. The Philippines, therefore, seems an unlikely case study to analyze the impact that the Internet can have in a restrictive media environment. As Table 1 shows, the country is one of East Asia's more democratic regimes, holding regular elections since the end of the authoritarian era in 1986. Except for the removal of Joseph Estrada as president in 2001 (Reid, 2001), the country's democratic institutions have, at least formally, functioned effectively. Similarly, press freedom scores fare well compared with other East Asian countries (Stockmann, 2009), with the result that most analysts place both the country's political regime and its press in the category of partly free.

Curiously, the democratic deficits identified in the Philippines stem not from authoritarian leadership or one-party rule but from the country's plutocrats, who dominate the corporate, political, and socioeconomic power structures (Teehankee & Calimbahin, 2020). Systemic violence wielded by this group against prominent opponents and critics largely explains why the Philippines is considered one of the most dangerous places in the world, outside Iraq and Syria, for a journalist (Ng, 2015).

Table 1. The Status of Freedom in East Asia (Selected Countries).

	Freedom Status	Freedom of the Press*	Internet Freedom
Cambodia	25	30	43
China	10	13	10
Indonesia	71	51	49
Japan	96	73	75
Malaysia	52	31	58
Philippines	**59**	**56**	**64**
Singapore	50	33	54
South Korea	83	66	66
Taiwan	93	75	NA
Thailand	32	23	35

Note. Freedom House (2017)—Freedom in the World, Freedom of the Net (2020). Higher values in the scale represent more freedom. *Freedom of the Press Index was last published in 2017. It used a scale of 0–100 with 100 being the least free, this scale has been adjusted accordingly to blend into the standard here of 0 being the least free.

Although the Philippines' political system has been formally democratic since independence (except for the Marcos years of 1965–1986), the country's political system has institutional weaknesses that result in its classification on most international measures of democratic liberties and civil rights as partly free. One of these is the lack of strong institutionalized political parties. Unlike in most democracies, many political parties in the country do not correspond to positions on a left-right ideological axis. Moreover, most lack grassroots strength and large-scale membership. Instead, political parties frequently correspond to particular patron-client relationships among elite families, often with a specific geographical power base.

Elsewhere, parties are little more than a vehicle for individual political figures. The Marcos family, for example, dominates the politics of the province of Ilocos Norte, where it has held the governor's post for 39 of the past 49 years and is the second district in the House of Representatives for 24 of the 33 years since the overthrow of Ferdinand Marcos as president of the Philippines in 1987. Indeed, some scholars (e.g., Anderson, 1988) argued that the revolution that overthrew Ferdinand Marcos in 1987 was less a democratic uprising as it was an inter-elite struggle between the Marcos clan and the Cojuangco clan that dominates the politics of the province of Tarlac. Many of the same families that dominate the country's politics also dominate private media conglomerates in the Philippines (Pertierra, 2020), and any journalists that pry too deep into their affairs often face threats to their lives.

One of the most notorious incidents took place in 2009, when 34 journalists were abducted and murdered in the province of Maguindanao. Esmael Mangudadatu had invited the victims to cover the filing of his candidacy for the 2010 gubernatorial election, expecting that the presence of many journalists would deter death threats made against him by the son of the incumbent governor Andal Ampatuan Sr. Despite damning evidence against Ampatuan, legal technicalities have encumbered the trials of the almost 200 people accused of involvement in the massacre. Indeed, for the 177 journalists killed in the country since 1986, impunity is the norm (Besheer, 2019). It is not only the threat of violence from the plutocrats that restricts freedom of the press. National security legislation and defamation law also impact freedom of the

press, but as is clear in Table 1, these laws are not strong enough to classify Filipino traditional media as entirely restrictive.

In contrast to the print media, the Philippines is second only to Japan in East Asia in terms of Internet freedom (see Table 1). Although a law that requires Internet service providers to prevent access to pornographic sites allows for the blocking and filtering of content, international observers have concluded that there is no systematic government censorship of online content (Freedom House, 2017). Internet users in the Philippines are avid users of SM networks and communication apps, including YouTube, Facebook, and Twitter. Additionally, the Philippines has a vibrant and thriving blogosphere, with Filipinos, according to some data, among the most avid bloggers in the world (Pertierra, 2012). While most Filipino bloggers mostly write about private matters, many easily switch to political issues when motivated.

Because traditional media have remained firmly in the grip of established power elites, online media emerged as both an alternative source of information and an enabler of political mobilization. Moreover, online media build on the tradition of Filipinos using text messaging via cellphones for political activism (Rafael, 2003). In terms of SM activism, one of the most successful campaigns began as a 2013 Facebook petition that called for the abolition of the Priority Development Assistance Fund (Cruz De Castro, 2014). Misuse of this $220-million fund by senators and congressmen was so widespread that it was dubbed "the pork barrel fund." The campaign against it organized nationwide protests and called for criminal charges against lawmakers accused of misusing the fund. Eventually, the Supreme Court ruled that the fund was unconstitutional, and three senators were charged with corruption. Additionally, during the 2016 elections, a group of prominent online activists launched the "iVote, iWatch" SM campaign on BlogWatch.tv to share election-related content ("Citizen Media Advocates," 2015).

Nevertheless, it is important to note that the Internet and SM themselves are not inherently democratic or progressive but tools that can equally be used for maleficent means (Morozov, 2011). Recent attention has turned to the growing use of SM by authoritarian governments to counter progressive causes (King, Pan, & Roberts, 2017). Such uses include deploying pro-government bloggers and SM users to "troll" progressive activists, disseminating disinformation and propaganda, and promoting pro-regime political mobilization (Reston, 2017). Thus, we want to be clear here that we are not suggesting the digital media environment in the Philippines is exclusively filled with progressive civic activism.

In fact, during the 2016 Philippines presidential election campaign, Duterte campaigners allegedly used such groups on Facebook to direct anger against his critics (Ressa, 2016). Such tactics were deployed alongside the use of fake SM accounts by users who deployed computer programs to automate responses (dubbed "bots"). One report claims that a public relations company in the Philippines paid employees 2,000–3,000 Philippine pesos a day (approximately $40–60) to copy and paste specific responses as part of Duterte's SM campaign (Carunucho, 2016). Much of this strategy was deliberately abusive to silence opponents and critics in much the same way that violence against journalists acts to deter criticism.

Clearly, in the case of the Philippines, the Internet has created new arenas for critical information to be disseminated, and a virtual public sphere in which political organization can challenge the status quo (Howard,

2011). This provides an interesting context to examine SM effects because most research focused on digital consumption effects in authoritarian and semi-authoritarian regimes centers on regimes where there are government restrictions on both the traditional and digital flow of information. Given this rather unique set of circumstances, we can use our original survey data to isolate SM effects. In most contexts, survey data models can control for traditional media consumption. But here, with our data, we can make stronger assumptions about the balance of citizen exposure to dissident and pro-government information and the sources of that information. In the dual-unrestricted environment, it is difficult to isolate digital from traditional media dissidence consumption effects because people are simultaneously being exposed to both mediums. In the dual-restricted environment, digital dissidence exposure, while likely higher than traditional media dissidence exposure because of the hurdles in exerting control over the digital flow of information, is still lower than an unrestricted digital flow.

In the Philippines, where the traditional flow is somewhat restricted and the digital flow is not, the estimates of digital consumption, and in particular SM consumption, are inherently less intertwined with traditional media consumption measures. We know that SM are more likely than traditional media to include dissident flows. This, combined with an original survey that directly assesses different types of media consumption, makes the Philippines a useful case study for understanding critical information flows.

Data, Measurement, and Descriptives

We designed the survey used to collect the data for this study and then commissioned Social Weather Stations to implement it. These data are a nationally representative randomized sample of Filipino citizens from December 5–8, 2015[1] ($N = 1,200$). The survey included only those who were 18 years or older and was stratified with 300 each in Metro Manila, Balance of Luzon, Visayas, and Mindanao (the sampling margin of error is ±3%). Social Weather Stations randomly selects respondents from households (based on address), and trained interviewers conduct the data collection in person. Because the sampling is clustered, the data weigh our descriptive estimates by the National Statistics Office median-population projections for 2015 to obtain national estimates. For most of our models though we do not use the weights because we rely on matching weights generated via coarsened exact matching (CEM). This process, described in detail below, bolsters our confidence in the accuracy of the observed relationship between our SM consumption measures and protest behavior indicators by decreasing the imbalance in our models created by potentially unequal conditional distributions across the SM consumption measures and the control variables in our models. While there are very few missing values in these data, we replace them using multiple imputations to prevent bias in our model estimates.[2]

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[1] It is worth noting that conducting the survey in 2015 means that this survey is not impacted by the contentious presidency of Rodrigo Duterte, which is characterized both by social media mobilization, concerns over fake news and trolling, and criticism from religious leaders, particularly in the Catholic Church. As we discuss in the Conclusion, our findings may have implications for this recent period, but Duterte had barely launched his campaign in early December 2015 and had not been subjected to the kinds of religious critiques that have taken place since.

[2] After all our variables and constructing indices were recoded, the variable with the highest missing values was only at 6%, and the lowest was 0%. The average missing values across all variables in our models was approximately 1%. Our models are based on five replicate data sets where the missing data in each replication were substituted with draws from the posterior distribution of the missing value conditional on

Our approach is to estimate six separate models of two different outcomes: (1) support for protest and (2) protest activity. Each outcome is modeled with three different specifications so that each specification has a different measure of SM use: (1) general SM use, (2) political SM use, and (3) critical SM use. Thus, we can make comparisons in both statistical reliability and magnitude of effects across our models. While our ability to make causal inferences with observational data is limited, it is especially important when examining SM consumption effects to control for both other digital and non-digital consumption influences because it is entirely possible that observed SM consumption effects on protest behavior are spurious. Those who use more SM may also consume more traditional media (newspaper, radio, and television) and digital news outside SM, and the observed SM effects on protest behavior may simply reflect these relationships. As such, we control for the frequency with which our respondents use the Internet and the attention they pay to traditional media (which is inherently pro-government), and we also include the degree to which they trust traditional media because this may condition both the traditional and nontraditional consumption effects. We also control for support for protest in our protest models, presuming those who are more supportive are more likely to protest. Finally, we control for gender, age, and SES effects. See the online Appendix for the operationalization of all control variables.

We have two dependent variables. First, protest activity was measured by asking respondents, "Here's a list of activities some people might do. For each, please tell me if you have done this in the past 12 months or not. In the past 12 months, have you . . . " and then they were read the following activities (along with some non-protest centered activities: (1) attended an organized protest of any kind, (2) been an active member of any group that tries to influence government to change public policy, not including a political party (such as a nongovernmental organization), (3) signed a petition to try to influence the government, (4) ignored a law for a political cause, and (5) protested against the government in any public way. These items were coded as a 0 if they said no, and a 1 if they said yes. Then they were added together, and the index was rescaled to range from 0 to 1, maintaining the original intervals ($\alpha = 0.73$). Second, support for protest was also based on an additive index of four component items. Respondents were asked, "Here's another list of activities some people might do. For each, please tell me if you think they are very justified, somewhat justified, or not justified." Then they were read a series of activities including (1) public protests against the government, (2) ignoring a law for a public cause, (3) organizing a petition to try to influence the government, and (4) joining a group that tries to influence the government. These items were recoded so that higher values equated to a stronger belief that each respectively was justified, added together, and rescaled to range from 0 to 1, maintaining the original intervals ($\alpha = 0.81$).

The distribution on each of our dependent variables is presented in Figure 1. The boxplot on the left side of Figure 1 shows the distribution of our support for the protest index. The distribution here suggests several things. First, support for protest is common; many of our respondents believe that these acts of protest are justifiable. The median, as denoted by the white line in the shaded area, is just above the midpoint of the scale (0.5—denoted by the black horizontal reference line). The distribution does have a slight negative skew, as evidenced by the short whisker on the low end of the index, but the bulk of respondents indicate a moderate

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observed values, assuming a multivariate normal for our replacement estimates (Little & Rubin, 1987). Because we relied on the multivariate normal, the substitutions could vary continuously, resulting in non-discrete indicators, and as such, this allowed us to rely on linear modeling throughout.

degree of support for some kind of protest. That said, the frequency with which citizens claim to have actually engaged in protest is relatively low. We did not expect the marginal distributions on any of the five items to be high, so it is not surprising that engaging in protest activity is uncommon. As such, instead of presenting the marginals on each of the indicators here, we created a dummy variable to represent whether respondents had engaged in any of these activities (0 = none, 1 = at least one). Just under 7% of the respondents have engaged in at least one protest activity. At first, this seems low. In fact, this is quite high. This is comparable with protest activity in Westernized democracies where protest is part of the culture (e.g., 6.3% of Americans claimed to have gone to a protest march in 2012—American National Election Studies, 2012).

Figure 1. Distribution of protest support.
Note. Data come from an original survey conducted by Social Weather Stations. These figures are based on the un-imputed data with weights applied.

The distributions on all our individual SM measures are presented in Table 2 (the question wording for each item is included in the online Appendix[3]). The first glaring observation here is that SM use is not comparable with that in the Western world. It is much lower. This is true concerning general use, political use, and critical use. For general use, only roughly 20% use Facebook at least one to two days weekly or more, and even less use Twitter, where approximately around 9% use it all (an additive index rescaled to range from 0 through 1 was constructed from these items, α = 0.51). These numbers are reflected in the political use measures, where about 20% claim to have got political news or seen political comments via SM. Critical exposure is also low— where only around 21% claim to have seen news critical of the government on SM, a few (about 16%) claim to

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[3] https://www.dropbox.com/scl/fi/8yr8p97wu8eupemmog389/ijoc.Online-Appendix.docx?dl=0&rlkey=ggcpd0dr1dg6t997uuq2pzgwy

have seen critical comments, and even fewer (about 10%) claim to have shared such information. We also created additive indices here (α = 0.91 and α = 0.84, respectively).

On one hand, having such low marginal distributions on these items suggests that the overall impact on actual political outcomes might also be low. On the other, if we are correct that critical use is where attitudinal and behavioral consequences are most likely, the statistical identification of such suggests that the relationship is quite reliable given the small number of cases.[4] These results suggest two important ramifications. First, SM matter, and how they matter is driven, in part, by the kind of information that people are exposed to in their feeds. Second, it suggests that as SM use grows in this developing context, the consequence on political outcomes will grow as well.

Table 2. General, Political, and Critical Uses of Social Media: Percentage of Respondents.

	> Once Daily	Daily	3–5 Days	1–2 Days	Less	Never	n
General SM use							
Facebook	1.75	9.26	3.59	6.26	14.60	64.55	1,199
Twitter	0.50	0.92	0.75	0.59	5.95	91.29	1,194
Political SM use							
Political news	0.42	2.68	0.92	2.60	13.50	79.88	1,193
Political comments	0.34	1.93	1.01	2.35	14.51	79.87	1,192
Critical SM use							
Critical news	0.59	2.10	1.17	2.26	14.42	79.46	1,193
Critical comments	0.59	1.59	1.01	1.59	11.24	83.98	1,192
Critical sharing	0.08	0.59	0.50	1.26	7.96	89.61	1,193

Note. Data come from an original survey conducted by Social Weather Stations. These estimates are based on the un-imputed data with weights applied.

Before getting to our models to test for SM effects on protest attitudes and behavior, we describe the matching method. We use a matching process here to increase our confidence that the observed SM effects are not simply a result of imbalance. While we make no claim that matching is comparable with true experimental methods when trying to make causal claims, we do believe that matching provides more evidence that observed multivariate model estimates are not spurious than the simple inclusion of controls. We use CEM, which is a nonparametric method of controlling for the confounding influence of pretreatment control variables in observational data (Iacus, King, & Porro, 2012). We prune observations from the data so that the remaining data have a better balance between the quasi-treated and control groups. In our case, those who have higher SM exposure represent the quasi-treatment group, and those with lower exposure represent the control group. These groups are balanced if the empirical distributions of the covariates across the groups are similar.

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[4] One can argue that comparing the effects of these three separate indices on support for protest and actual protest is not a fair comparison because the critical SM measure includes one active item (sharing or posting), while the general and political SM indices do not. As such, we also estimated the models with a two-item critical SM index excluding the active item, and the substantive results that follow did not change.

The CEM process is user-driven in the sense that the researcher selects which variables are relied on to match. The selection of the variables is subjective. This makes matching fall short of the randomization in true experiments. Nonetheless, it is a step beyond simply including controls in the specification. The selected matching variables are "coarsened," or collapsed, into a manageable number of categories, so as to provide ample opportunity to find a match and balance the groups. We decided the most reasonable matching variables were the controls used in each of the model specifications (listed above) because theory suggests these are potentially confounding.

When it comes to coarsening the variables, the process can be automated or user-driven. We chose the latter. Because Internet use, traditional media attention, and traditional media trust are already relatively coarse (they are ordinal), we opted to simply create dummy variables for each (0 = below the mean, 1 = at or above the mean), but we further coarsened the continuous variable (age) and the indexed variable (SES) in the model by cutting each into three equal quantiles. Gender is naturally coarsened (it is a dummy variable). Then the CEM process identifies those treatment cases that had a control group match across each possible combination of these user-defined, coarsened matching variables. For example, it will locate all the cases that are below the mean on Internet use, traditional media attention, and traditional media trust in the lowest quantile of age, SES, and female. It cycles through this process until all the cases for each possible combination are found. Then we prune the data by eliminating those cases that did not have a match. Finally, we estimate our models with the pruned data. These models include the un-coarsened control variables to pick up additional imbalance.[5]

Modeling Results

The results of the multivariate tests are presented in Table 3. They largely confirm our hypotheses. Critical SM use is consistently a more reliable estimate of both outcomes, support for protest and protest activity, and the magnitude of the effects for critical SM use are also consistently positive and larger. In the three models of support for protest, only critical SM use is statistically significant among the SM use measures. Also, the magnitude is quite substantial. Every one-unit increase in critical SM use is associated with a 0.11 increase in support for protest. These variables are rescaled to range from 0 through 1, so this effect represents just over a 10% change in the outcome for a one-unit change in the independent variable here.

Moving over to the models of actual protest activity, the pattern here is a little less clear, but nonetheless, still provides evidence in support of our theory. Here, SM use is statistically significant across all three models, but the estimate for general SM use is negative, and the estimate for the positive effect of

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[5] The L_1 statistic was used to compare imbalance in the data before and after using CEM. We compared the unmatched data with the matched data to demonstrate how much the matching process improved the balance across groups. Iacus and colleagues (2012) recommend this comparison. The $L_1 = 0$ when there is perfect global balance, and larger values indicate larger imbalance between the treatment and control groups, with a maximum of $L_1 = 1$. We had three different matching models here: The general SM use treatment, the political SM use treatment, and the critical SM use treatment. The L_1 statistics in the unmatched data for these models are 0.85, 0.84, and 0.83, respectively, and the L_1 statistics are 0.02, 0.01, and 0.01, also respectively, after the variables are coarsened and matched. CEM clearly balanced the data.

critical SM use is slightly larger than that of political SM use. The first of the three models indicates that a one-unit increase in general SM use predicts a 0.08 decrease in protest activity. We did not expect this. Because general SM use can include a range of activities, we suspect the negative relationship may be driven by engagement with generally prostate nonpolitical materials. However, this opposite result does not detract from our proposition that critical SM use is more likely to have a stronger positive effect on protest than general or political use. Political use does have a positive effect, which is not surprising. It is consistent with previous research outlined above suggesting that SM use does stimulate protest, but most important for our argument here, this effect is, at least, moderately weaker than that of critical SM use. Political SM use predicts a 0.05 increase in protest activity, while critical SM use predicts a 0.07 increase.

Table 3. Social Media Effects on Support for Protest and Protest Activity.

	Support for Protest			Protest Activity		
General SM use	0.04	—		−0.08*	—	
	(0.07)	—		(0.03)	—	
Political SM use	—	0.04		—	0.05*	
	—	(0.04)		—	(0.02)	
Critical Sm use	—	—	0.11*	—	—	0.07**
	—	—	(0.05)	—	—	(0.02)
Support for protest	—	—	—	0.07**	0.06**	0.06*
	—	—	—	(0.03)	(0.03)	(0.03)
Internet use	−0.01	0.00	−0.01	0.06**	0.00	−0.00
	(0.05)	(0.04)	(0.05)	(0.02)	(0.02)	(0.02)
Traditional media attention	0.07	0.07	0.06	0.07**	0.04	0.05*
	(0.05)	(0.05)	(0.05)	(0.03)	(0.03)	(0.02)
Traditional media trust	0.07	0.09	0.09	−0.01	−0.03	−0.02
	(0.06)	(0.06)	(0.05)	(0.03)	(0.03)	(0.03)
Female	−0.00	0.01	0.00	−0.01	−0.01	−0.01
	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)
Age	0.04	0.05	0.03	−0.02	−0.03	−0.03
	(0.05)	(0.06)	(0.05)	(0.03)	(0.03)	(0.03)
SES	0.01	−0.04	-0.05	0.05	0.02	0.03
	(0.07)	(0.07)	(0.07)	(0.03)	(0.03)	(0.03)
R^2	0.01	0.02	0.03	0.08	0.05	0.07
n	428	431	436	428	431	436

Note. Data come from an original survey conducted by Social Weather Stations. These ordinary least squares estimates are based on multiply imputed data that have been pruned using CEM.

The control variables largely have no effect; however, these variables are only included in the models to account for any additional imbalance across the quasi-treatment and control groups not accounted for by CEM. So, essentially, they are already controlled for through the matching process. That said, Internet use is

positively associated with protest activity in the general SM use model as is traditional media attention. And as expected, support for protest is positively related to protest activity in all three models (this independent variable was not included in our CEM process). We also estimated the models with the full data, and the control variables were more reliable here.[6] The results suggest first that traditional media trust is positive and significant (at the 0.10 level) in all three of the support for protest models, indicating that those who are more trusting are more likely to think that acts of protest are justifiable. This runs counter to our expectations. Age and SES are also significant in all three of these models, with the model estimating a positive association between age and support for protest, and a negative relationship between SES and support for protest.

Discussion

The analysis in this article was motivated by our expectation that the way in which people use SM is important in informing our understanding of how SM can influence both attitudes about protest and actual protest behavior. Since the majority of large N research examining these individual-level effects focuses on the frequency of SM use as opposed to examining the types of information citizens can be exposed to on their SM feeds, this research fills an important gap in the literature. The Philippines, with a stark difference between the controlled traditional media, and the more open online SM, provides a suitable context for us to examine whether SM exposure to information that is critical of the government is at the root of SM effects on protest attitudes and behavior. Online media in the Philippines are raucous and unfiltered. This makes the Internet, and SM, the only platforms where dissident information can flow freely, allowing us to test contrasting information forums.

Our results were clear. The effects of exposure to critical information via SM were consistently more reliable and stronger than both general SM use, such as using Facebook and Twitter, and political SM use, like consuming political news and citizen commentary. These critical information exposure effects suggested that such consumption stimulated both citizen belief that acts of protest are justifiable and actual engagement in protest activity. We note that in some of our modeling, political use does have a positive effect. This suggests that there might be other forms of SM use that need to be explored further, and operationalized more narrowly. Nonetheless, the effect of political use is moderately weaker than that of critical SM use.

Causality is difficult to assert when modeling survey data. In most survey cases, causality is grounded in theory rather than measure. However, support for a causal relationship between critical SM use and protest attitudes and behaviors is bolstered by our use of CEM to prune our data. Nonetheless, we recognize that more data need to be gathered in different states to increase the confidence in our theory. We only have data from one country, and there are conditions possibly specific to the Philippines that might

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[6] The results, not surprisingly, were different from those in the matched models. The relationship between actual protest looks substantively similar, with the exception that the relationship with general use is not significant. As for the models of support for protest, only general use is significant and positive, but the magnitude is very small. We also added several interactive models interacting political institutional trust as well as of attitude about the democratic conditions in the Philippines with each respective SM use indictor and each of those institutional attitude indices to test whether the consumption measures effects were conditional on regime support. They were not; none of the relationships were significant.

be influencing our outcome. The inclusion of more countries, including measures of exposure to critical information flows via SM, will help move us to develop a more nuanced model.

Even within the Philippines, there will need to be more work. Much has changed in the Philippines since we collected these data. A surprise election result in 2016 brought an antiestablishment candidate to power. This had happened only once before in the Philippines since the transition to democracy in 1986. It occurred with the election of Joseph Estrada in 1998. His victory was short-lived. Traditional elites successfully mobilized urban middle-class protests to remove him from power after only two and a half years in office. The election of Rodrigo Duterte in June 2016 similarly brought an antiestablishment candidate to power. While his predecessor won power claiming to be the champion of the poor, Duterte has mobilized his populist, pro-poor stance into a much more powerful populist revolt against elite democracy and the corruption of the traditional political classes (Heydarian, 2018).

Not unlike the situation we have seen in the United States following the election of former president Trump, online media (and SM in particular) is a key platform for pro-Duterte supporters. Known as the Ka-DDS (Duterte Diehard Supporters), these loyalist SM practitioners spread false information and fake news to defend the president's controversial policies. Indeed, Duterte appointed one of his most infamous supporters, Margaux Uson, his assistant secretary, for SM in his communications office.

The consequence of this is that the contours of Philippines' media and politics today are distinct from when we conducted our research. What has *not changed* is online media's role as an alternative source of information. What has changed, however, is that online media is now more heterogeneous. Moreover, under the Duterte presidency, it is the pro-government illiberal voices that have grown most vocal. This potentially poses some interesting questions for research into the relationship between critical media and political participation. If the online landscape is much more contested and heterogeneous, does this affect the ability of online groups to mobilize? And who is more or less likely to mobilize in such circumstances? Groups that are critical but liberal, or groups that are illiberal defenders of the president and critical of the "corrupt and rotten" elite?

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Appendix

Each indicator was rescaled to range from 0 to 1 and inverted to run in the intuitive direction when necessary. The original intervals were maintained.

General Social Media Use

- How often do you use Facebook? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)
- How often do you use Twitter? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)

Political Social Media Use

- How often do you read news stories about politics that have been posted on social media? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)
- How often do you read political comments posted by your friends on social media? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)

Critical Social Media Use

- Do you ever see stories posted on social media that are critical about the current government? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)
- Do your friends ever post comments on social media that are critical about the current government? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)
- Do you ever post or share stories on social media that are critical about the current government? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)

Internet Use

- How often do you use the Internet either with a computer or on a mobile device? (1. More than once a day, 2. Everyday, 3. Three to five days per week, 4. One to two days per week, 5. Less often, 6. Never)

Traditional Media Attention

- How often do you read news about politics in the newspapers? (1. Daily, 2. A few times a week, 3. Weekly, 4. Not even once a week, 5. Never)
- How often do you watch news about politics on TV? (1. Daily, 3+ hours a day, 2. Daily, 1–2 hours a day, 3. Daily, less than an hour a day, 4. A few days per week. 5. Seldom, 6. Never)
- How often do you listen to news about politics on the radio? (1. Daily, 3+ hours a day, 2. Daily, 1–2 hours a day, 3. Daily, less than an hour a day, 4. A few days per week. 5. Seldom, 6. Never)

After being rescaled to range from 0 through 1 and inverted these items were summed and again rescaled to range from 0 through 1 (α = 0.25). The alpha here is low, but we proceed with the index assuming that heightened use across all three items is more traditional media attention even if respondents were not using all three as sources of information. Nonetheless thy all correlate with each other (p = .00).

Traditional Media Trust

For the following, please indicate if your trust/faith in the following sources of news is very much, somewhat much, undecided if much or little, somewhat little, or very little:

- Television
- Newspapers
- Radio

After being rescaled to range from 0 through 1 and inverted these items were summed and again rescaled to range from 0 through 1 (α = 0.82).

Support for Protest

Here's another list of activities some people might do. For each, please tell me if you think they are very justified, somewhat justified, or not justified:

- public protests against the government
- ignoring a law for a public cause
- organizing a petition to try to influence government
- joining a group that tries to influence government

After being rescaled to range from 0 through 1 and inverted these items were summed and again rescaled to range from 0 through 1 ($\alpha = 0.81$).

Demographics

- Female (0 = Male, 1 = Female).
- Age—How old are you? (Measured in years)
- Socioeconomic status—Additive index of the following two items after each was rescaled to range from 0 through 1:
  1) What is your highest educational attainment? (1. No formal education, 2. Incomplete elementary, 3. Complete elementary, 4. Incomplete high school, 5. Complete high school, 6. Some vocational, 7. Complete vocational, 8. Some college education, 9. College education completed, 10. Post college)
  2) About how much is the total monthly income of your family? (In pesos) ($\alpha = 0.23$).