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# Social Network Sites and Political Engagement: Exploring the Impact of Facebook Connections and Uses on Political Protest and Participation

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Past studies have shown positive relationships between use of social network sites (SNSs) and political engagement, but an understanding of the mechanisms underlying the relationship is limited because the studies often did not take into account the diverse affordances of SNSs that can influence participation in different ways. Adopting the O-S-R-O-R (Orientation–Stimulus–Reasoning–Orientation–Response) model of political communication effects, this study examined the roles of Facebook network size, connections with public political actors, use for news, and political expression on political attitudes, protest, and participation. Structural equation analyses were conducted based on data from a national sample in Hong Kong, a city-state with one of the world’s highest Facebook penetration rates. Results showed that Facebook network size and connections with public political actors exhibit both direct and indirect effects on participation through Facebook news, expression, and efficacy. Facebook news exhibited indirect effects primarily through political expression. A discriminant function analysis also showed that age, education, and online news exposure were the most influential variables for distinguishing Facebook users and nonusers. Implications of the findings are discussed.

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When Facebook opened its popular social network site (SNS) to anyone with a valid e-mail address in 2006, few could have predicted that it would accumulate more than 1 billion users within a decade and have a substantive impact on political and social life around the world. From political engagement and contentious politics in democracies (Rainie, Smith, Schlozman, Brady, & Verba, 2012) to social movements and protests in authoritarian regimes (Howard & Parks, 2012), Facebook has played an influential role in facilitating information exchange, expression, and collective action mobilization for different political causes and purposes.

Initial research and later meta-analyses on the political impact of SNSs have generally demonstrated positive effects on political attitudes and participation (e.g., Boulianne, 2015; Dimitrova, Shehata, Strömbäck, & Nord, 2014; Gil de Zúñiga, Jung, & Valenzuela, 2012; Zhang, Johnson, Seltzer, & Bichard, 2010). Yet only recently has scholarship begun to examine the conditions in which SNSs exert their influence (e.g., Tang & Lee, 2013; Valenzuela, 2013). This work is important because SNSs like Facebook are characterised by their diverse affordances that facilitate a variety of uses. At its simplest, Facebook can be just another source of news appearing on a user's stream of Wall updates. But it can also serve as a platform for opinion expression, as well as provide users with linkages to individuals, groups, and institutions that have political and social influence.

This study integrates four features of Facebook—network size, connections with public political actors, use for news, and use for opinion expression—with recent theorizing on the effects of media use on political participation based on *communication mediation models* (Cho et al., 2009; Sotirovic & McLeod, 2001). These models suggest that different antecedents and orientations influence uses of media, which in turn exert indirect effects on participation through interpersonal communication and cognitive orientations. Adopting such an approach, this study examines the interrelationships among Facebook connections and uses, political efficacy, political participation, and political protest. In doing so, it contributes to the body of research interested in the role of the Internet in political participation (Bimber & Davis, 2003; Mossberger, Tolbert, & McNeal, 2008).

Data for the study come from a national sample in Hong Kong, a city-state experiencing a large amount of contentious politics in recent years. Of course, Facebook is one of many diverse social media platforms in Hong Kong, and scholars have pointed to the limitations of focusing on just one “brand” of SNS (Rains & Brunner, 2015). Nevertheless, Hong Kong is a suitable site for investigating the relationship between Facebook and democratic engagement because it has more than 60% penetration (“Hong Kong,” 2014) and hence sizable agenda-setting, information dissemination, and mobilization potential in Hong Kong politics.

Given long-standing interest and concern on the possible participatory divides caused by the diffusion of new information technologies (Norris, 2001;

Schlozman, Verba, & Brady, 2010), the use of a national sample allows for the examination of differences between users and nonusers. For example, do users and nonusers of Facebook differ in their demographics, political attitudes, and behaviours? The article is arranged as follows. First, the role of Facebook is elaborated in light of the political and social context of Hong Kong. Then, connections and uses of Facebook and their place in the communication mediation model are elaborated, and hypotheses and research questions are proposed. This is followed by analyses of direct and indirect effects and group comparisons, followed by discussion on the implications of the findings.

## LITERATURE REVIEW

### Facebook in the Hong Kong Context

Even though Hong Kong's sovereignty was returned to China in 1997, the city-state still retains a relatively large degree of autonomy under China's "one country two systems" principle. However, the slow pace of democratic reform and institutional arrangements favoring the pro-government and pro-China political parties have led to grievances and contestation by pro-democracy parties, groups, and activists who demand universal suffrage in the legislative and executive branches of government. Although the media system is relatively free and not subject to censorship, the traditional press tends to be pro-establishment with only one mass daily that is supportive of the cause for more democracy. The preceding conditions, together with Hong Kong's highly advanced telecommunications infrastructure (83% broadband and 239% mobile penetration; Office of the Communications Authority, 2015), have engendered a thriving online space for those with antiestablishment views and opinions. One characteristic of this online civil society is the prominence of "Internet social movement media" (Leung, Sze, & Yee, 2011) that has a heavy presence on Facebook. For example, the alternative news portal *inmediahk* has more than 420,000 Likes compared to the mainstream Democratic Party, with slightly more than 19,000 Likes. Facebook is also embedded in the online editions of almost all the mass dailies, allowing readers to easily "share" news to others.

In all, Facebook serves a variety of facilitating roles in Hong Kong's political and media system: as a carrier of information, a promotional channel, a mobilization tool, and a meeting space for like-minded individuals (Yung & Leung, 2014). Examples of these affordances were amply demonstrated during the Occupy Central/Umbrella Movement protests in 2014, which saw the unprecedented 79-day occupation of Hong Kong's main road arteries by protesters and activists as part of the pro-democracy movement (Chan, 2015). Protest organizers used their Facebook pages to articulate their agenda and disseminate

mobilization information. For the approximately 100,000 people who were physically at the protests, the combination of mobile phones and Facebook allowed them to post messages, photos, and footage from the ground for immediate sharing. The protests also gave rise to the iconic yellow umbrella symbol, which was then coopted by thousands of Facebook users as their profile picture to express their support for the protests.

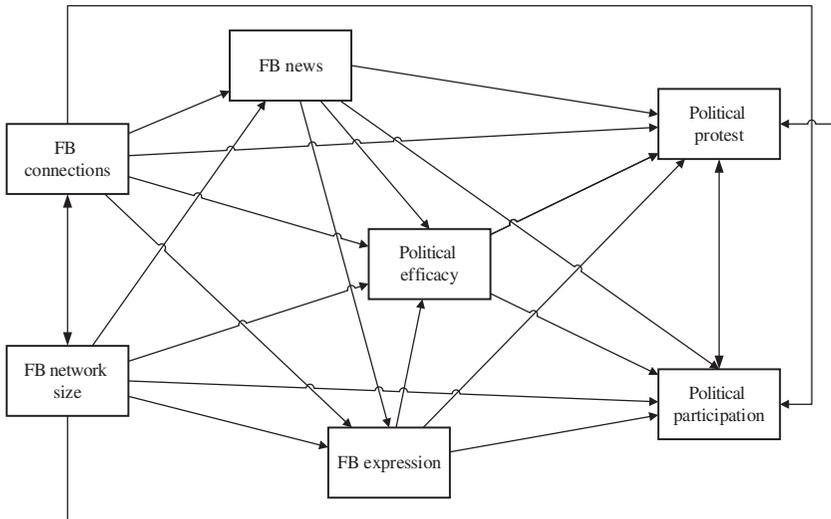
### Facebook and the Communication Mediation Model Framework

Well-publicized uses of social media by politicians, citizens, and activists for collective actions have provided much impetus for examining the role of SNSs on political engagement. Examples include the 2008 U.S. presidential campaign, dubbed by some the “Facebook election” (Johnson & Perlmutter, 2010), the Arab Spring uprisings (Howard & Parks, 2012), and Occupy Wall Street (DeLuca, Lawson, & Sun, 2012). Previous studies, whether they measured SNS usage generically (i.e., “reliance on SNSs”; Zhang et al., 2010), in terms of frequency (i.e., “time spent”; Chan & Guo, 2013), specific to one particular platform (i.e., “Facebook intensity”; Valenzuela, Park, & Kee, 2009), focused on one particular use (i.e., “social media use for news”; Gil de Zúñiga et al., 2012), or a composite measure of diverse uses (i.e., “political use of SNS”; Bode, Vraga, Borah, & Shah, 2014), have tended to show positive relationships between SNS use and political participation. However, as Boulianne (2015) noted in a meta-analysis of 36 articles, although 80% of the coefficients were positive, only half were statistically significant.

In addition to issues of operationalization and measurement, another possible reason for the inconsistent findings is that past studies did not adequately account for the different affordances offered by SNSs and the diverse mechanisms or pathways to explain why they engender participation. Recent studies have attempted to examine such processes. For example, Valenzuela (2013) showed that social media use for opinion expression and use for activism mediated the relationship between frequency and protest, whereas Tang and Lee (2013) found that exposure to shared information mediated the relationships between various uses of Facebook and offline and online participation.

This study continues on from these works, but with a more theoretically informed approach based on the Orientation–Stimulus–Reasoning–Orientation–Response (O-S-R-O-R) model (Cho et al., 2009; Jung, Kim, & Gil de Zúñiga, 2011; Shah, Cho, Eveland, & Kwak, 2005). Developed from the communication mediation model (Sotirovic & McLeod, 2001) and the O-S-O-R model of human behavior (Markus & Zajonc, 1985; McLeod, Kosicki, & McLeod, 1994), the O-S-R-O-R model is a parsimonious framework that helps explain the various mechanisms and pathways in which media use can influence participatory behaviors. This framework is particularly appropriate for examining Facebook

because the platform’s different technological affordances can be situated in different parts of the model, and so their interrelations and subsequent impact on participation can be explicated theoretically. With this in mind, this study focuses on four aspects of Facebook use: network size, connections with public political actors, news, and expression. These are not by any means the only possible uses of Facebook, but they are expected to play important roles based on the body of previous research. Informational uses of media and political expression are core components in previous studies based on communication mediation models (e.g. Shah, et al. 2005), whereas network size and connections have long been important indicators of network structure and influence (Huckfeldt & Sprague, 1995; Katz & Lazarsfeld, 1964).<sup>1</sup> The respective roles they play in the O-S-R-O-R model are summarised by the framework shown in Figure 1, and



**FIGURE 1** Theoretical model based on O-S-R-O-R framework.  
*Note.* FB = Facebook; O = FB size and connections;  
S = FB news; R = FB expression; O = political effi-  
cacy; R = political protest and participation.

<sup>1</sup> As an example of other uses, Gil de Zúñiga et al. (2014) pointed out that social interactions with family and friends via SNSs are actually more pervasive than politically related uses and could be a path to participation. However, their subsequent findings were inconclusive due to high correlations between the two uses, causing multicollinearity issues in subsequent analyses. Given that this study is the first to test the O-S-R-O-R model in the Facebook context, preference was given to variables that have more established empirical support.

their interrelationships are explicated in more detail along with individual components of the framework.

**Initial orientations (First O): Network size and connections with public political actors.** In its original formulation in social psychology, the first O represented a cognitive state that determines “what stimuli are attended to and what stimuli are ignored” (Markus & Zajonc, 1985, p. 138). In media research these are often factors that influence what media is attended to and how much. For example, studies have found that postmaterialist values (Sotirovic & McLeod, 2001) and prior motivations of use (Eveland, 2002) are related to increased media exposure, which in turn can lead to more political expression, knowledge, and participation. More recent research, however, has conceived the first O in structural terms by focusing on demographics, because those who are more educated and earn more are often heavier users of media (Jung et al., 2011). This study also includes demographics, but as control variables. Of central interest are two structural features related to individuals’ Facebook profiles that may have implications for subsequent news use, discussion, and participation: network size and connections with public political actors.

Network size is an important structural feature because those with more social connections usually possess greater social capital, defined as “resources embedded in a social structure that are accessed and/or mobilized in purposive actions” (Lin, 2001, p. 29). In particular, individuals with larger networks are more likely to come into contact with people who are already politically active (Eveland & Hively, 2009), which expands access to “mobilizing information” that gives the necessary knowledge and practical information on how to participate in collective actions (Lemert, 1984), as well as opportunities to be asked by others to engage in political activities (Brady, Verba, & Schlozman, 1995).

The feature of connections with public political actors is more concerned about *who* the individual is connected to within the network. Classic political studies have highlighted the role of “opinion leaders” and the ways in which they can influence others by virtue of their status and expertise (Katz & Lazarsfeld, 1964). Similar settings can be found in Facebook in the form of being “friends” with influential politicians, activists, and organizations. Granted, such connections are almost always one way and “parasocial” (Tang & Lee, 2013). For example, it would be impossible for Barack Obama to have had personalized communications with all of his 30-million-plus Facebook Friends during the 2012 presidential election. However, from the perspective of the user, messages sent by these actors can be more influential compared to “regular” friends, at least in relation to political matters. For example, Tufekci (2013) noted the increasing prominence of “networked microcelebrity activists” who use social media to present their political agendas to the broader public and, because of their relative status, are able to command more attention among connected users to their political messages. All things considered, Facebook network size and

connections can positively impact a variety of attitudes and behaviours, including news consumption, political expression, efficacy, and participation.

*Stimuli (S): Facebook use for news.* In the O-S-R-O-R model, the S is represented by media exposure variables. Because of the news media's normative role to keep citizens informed of political and current affairs, the role and potential of the news to engender a politically active citizenry has long been a central concern among political communication scholars (Delli Carpini, 2004). In recent years, SNSs like Facebook have increasingly become important sources of news (Barthel, Shearer, Gottfried, & Mitchell, 2015). Therefore, it is not surprising that more than half of SNS studies on political engagement include some form of "SNS use for news" measure (Boulianne, 2015). Just like traditional media, SNS news can provide individuals with information on pertinent political and social affairs that can engender further expression and participation. One notable difference, however, is that news exposure on SNSs is often unintentional (Kim, Chen, & Gil de Zúñiga, 2013). In Facebook, news updates appear on the Wall based on who one is connected to rather than active searching by the user. Thus, those with bigger networks and more connections with public political actors are likely to receive posts more frequently. Moreover, Facebook news can afford greater "expressive potential" among users because they can easily Comment on, Like, or Share news posts they receive for others to see (Gil de Zúñiga, Molyneux, & Zheng, 2014). Given the low costs and convenience, SNS news use should also lead to more expression through SNSs.

*Reasoning (first R): Facebook use for political expression.* Reasoning was added to the original O-S-O-R model to account for the myriad of cognitive processes that link stimuli (S) and its impact on subsequent cognitive outcomes (second O; Shah et al., 2007). These include mental efforts to "elaborate" and "reflect" on received information, which is manifested through political expression (Cho et al., 2009). In the context of Facebook, this can be in the form of a status update expressing one's views on a political or social issue, or it can also come in the form of reposts of opinions or news articles from friends together with accompanying commentaries or opinions. These kinds of interactions require greater cognitive processing because one has to articulate, elaborate, and reflect on one's thinking to the self and to others (Eveland, 2002). The interactive nature of Facebook means that users would also anticipate how others would respond to their shared content. Two pertinent outcomes are possible. First, through the processes of mental elaboration, expression, and receiving feedback, users may perceive themselves to be more competent and knowledgeable in politics. Second, expressing what one is thinking may serve as a reinforcing mechanism that facilitates political action (Gil de Zúñiga et al.,

2014). Thus, political expression should lead to greater political efficacy and more political engagement.

*Second orientation (second O): Political efficacy.* The second O represents cognitive outcome orientations of communication that in turn serve as important antecedents of political engagement. One of the most important antecedents is political efficacy because citizens' perceptions of their ability to participate in and influence politics have been a core predictor of democratic engagement (Delli Carpini, 2004). Efficacious individuals are more motivated and willing to expend time and effort in learning (Bandura, 1997) and are better able to process complex information and ideas (Beaumont, 2010). The news media constitutes one important antecedent of political efficacy because it facilitates learning and understanding of salient political and social issues (McLeod et al., 1996). Users of SNSs have a ready-made audience, and the feedback they receive from posted or shared content can be important sources of positive reinforcement. Such a positive relationship was found in recent findings examining SNSs and political efficacy (Chan, 2014; Moeller, de Vreese, Esser, & Kunz, 2014). Structural factors (first O) may also play a role to engender political efficacy, as greater network size and connections with public political actors can provide users with potentially new or additional opportunities to participate in political activities that may otherwise not be available.

*Response (second R): Political protest and participation.* The final component of the model consists of intentional or actual behavior. In political communication studies, the most relevant measure is political participation, as normative theories of democracy presuppose a citizenry actively engaged in the democratic process (Delli Carpini, 2004). In the context of Hong Kong, the act of protesting as a distinct behaviour is also important to consider. The lack of universal suffrage for the executive and legislative branches of government means that mass mobilizations of street rallies and protests are often the only means of expressing discontent with the government and exert influence on policy and public opinion (Lee & Chan, 2011).

As shown in Figure 1, all components of the model can in theory exert direct effects on engagement. For example, both Facebook uses for news and political expression can have independent paths to political participation and protest. The utility of the O-S-R-O-R model is that it facilitates the examination of *additional* indirect effects and the specific pathways in which the variables can impact engagement. One consistent finding of previous studies using communication mediation models is that different forms of interpersonal communication, either through online or offline channels, mediate the effects of news media use on participation (Cho et al., 2009; McLeod, Scheufele, & Moy, 1999; Shah et al., 2007; Shah, Cho, William, Eveland, & Kwak, 2005). This is because news

information often provides the necessary context and content that facilitate subsequent conversations about politics and social affairs, which in turn can spur engagement. Because of the strong evidence, a similar indirect effect is expected for this study on Facebook, and the following hypothesis is proposed:

H1: Facebook use for political expression will mediate the effect of Facebook use for news on political participation and protest.

The transition from a basic communication mediation model to the O-S-R-O-R model adds additional layers of variables and hence several more possible pathways to participation, such as from political expression to political efficacy. Yet, to date, few studies have formally tested the whole model. One exception was Jung et al.'s (2011) study showing that news media use (S) and participation (second R) was mediated by both online political messaging (first R) and political efficacy (second O). Later panel-based studies not explicitly testing the model also lend credence to its assumptions. For example, Moeller et al.'s (2014) multiwave study of Dutch adolescents demonstrated a positive effect of civic messaging on subsequent internal political efficacy, which in turn predicted later electoral turnout. More specific to social media, Gil de Zúñiga et al. (2014) found a positive relationship between social media use for news and expression, which in turn predicted offline and online participation. The limited evidence so far is based on samples from mature Western democracies. This study is the first to test the O-S-R-O-R model in an Asian context. Because it would be inefficient to state formal hypotheses for all possible direct and indirect paths indicated by Figure 1, a general research question is thus raised:

RQ1: To what extent do Facebook use for news (S), expression (R), and efficacy (O) mediate the relationship between network characteristics (O) and participation (R)?

### Users and Nonusers: A Second-Level Digital Divide?

The use of a national sample provides an avenue for this study to examine another important question related to Facebook use in Hong Kong: Are there substantive differences between users and nonusers? Early conceptions of the “digital divide” were focused on who had access to technology and who did not (Norris, 2001). However, technological infrastructures worldwide have much improved in the past two decades. In the case of Hong Kong, household broadband penetration has reached more than 83% (Office of the Communications Authority, 2015) and Internet-enabled smartphones are ubiquitous. Given that a Facebook account can easily be registered and maintained online, the focus is not necessarily on whether people have access to Facebook but whether the decision not to use it may have a negative impact on their

ability to understand and participate in political affairs compared to those who do. This area of focus has been called by some scholars the “second-level digital divide” (e.g., Wei & Hindman, 2011). Comparisons between users and nonusers may provide some initial indications. Thus, the following research question is raised:

RQ2: Do users and nonusers of Facebook in Hong Kong differ in their demographics, political attitudes, media use, and participation?

## METHOD

### Sampling

A telephone survey was conducted in July 2014 by a university-affiliated research center in Hong Kong. According to latest government statistics the Hong Kong residential landline penetration rate was 99.95% (Office of the Communications Authority, 2015).<sup>2</sup> Telephone numbers were randomly selected from the most updated Hong Kong residential landline directories. For unlisted numbers, the last two digits were replaced by values between 00 and 99. The most recent birthday method was employed to select the target respondent from each household. Respondents were all Cantonese-speaking local residents between 18 and 70 years of age, and 818 interviews were completed, yielding response rates of 35% following American Association for Public Opinion Research Response Rate 1 with a margin of error of  $\pm 3.4\%$ .<sup>3</sup> Of the sample, 466 respondents (57%) use Facebook.

### Measures

*Facebook network size.* Respondents stated the number of friends they have on their Facebook profiles ( $M = 2.03$ ,  $SD = 1.16$ ): 1 (1–100), 2 (101–250), 3 (251–500), 4 (501–1000), and 5 (1,001 or more).

*Facebook connections with public political actors.* Respondents indicated *yes* or *no* on whether they have the following linkages on their Facebook profile: (a) “Friend” or “Like” political group/organization; (b)

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<sup>2</sup> Although landline penetration is almost 100%, it is possible that single households may have multiple landlines. No statistics are currently available to indicate the relative pervasiveness of “mobile only” households in Hong Kong.

<sup>3</sup> Compared to latest Hong Kong census data, the sample is slightly older and had slightly more female participants. Therefore, a weighting adjustment was applied to take this into account.

“Friend” or “Like” political or social activist; (c) “Friend” or “Like” political and current affairs commentator; and (d) “Friend” or “Like” government official, legislator, or district council member. The questions were drawn from Tang and Lee (2013), and they were averaged to form a scale ( $M = .68$ ,  $SD = 1.13$ ).

**Facebook for news consumption.** Respondents stated the frequency with which they use Facebook to stay informed about political and current events on a typical day ( $M = 2.41$ ,  $SD = .86$ ): 0 (*none*), 1 (*1–15 minutes*), 2 (*16–30 minutes*), 3 (*31–45 minutes*), 4 (*46–60 minutes*), and 5 (*61+ minutes*).

**Facebook for online expression.** Respondents indicated the frequency—ranging 1 (*never*), 2 (*rarely*), 3 (*sometimes*), and 4 (*often*)—with which they do the following on Facebook: (a) express own political views and opinions, (b) repost others’ political views and opinions, (c) repost political and current affairs information from Facebook friends, and (d) repost political and current affairs information from news sources outside Facebook. The answers were averaged to form a single scale ( $M = 1.74$ ,  $SD = .74$ ,  $\alpha = .87$ ).

**Political efficacy.** Respondents used responses from 1 (*strongly disagree*) to 5 (*strongly agree*) to answer two questions that tap into internal political efficacy. Both were adapted from Niemi, Craig, and Mattei (1991): I feel I have a good understanding of the political and current affairs in Hong Kong, and I am well qualified to participate in politics in Hong Kong ( $M = 3.13$ ,  $SD = .93$ ;  $r = .61$ ,  $p < .001$ ).

**Political participation.** Respondents answered 1 (*yes*) or 0 (*no*) on whether they have done the following in the previous 12 months: (a) sign a petition on a political or social issue, (b) volunteered time for a political or social organization, (c) attended a political meeting or forum, (d) contacted a public official, (e) donated to charities or social organizations, or (f) attended a political rally. Moreover, respondents answered whether they voted in the national legislative election in 2012. The seven items were combined to form a cumulative index of political participation ( $M = 1.58$ ,  $SD = 1.29$ ).

**Protest.** Respondents answered from 1 (*very unlikely*) to 5 (*very likely*) regarding the likelihood of participating in a political rally in the coming 12 months ( $M = 2.41$ ,  $SD = 1.41$ ).

**Controls and demographics.** Political interest, other news media exposure, and demographics were included as statistical controls. Controlling

political interest is necessary, as past studies showed it to be an intervening variable on political participation (Xenos & Moy, 2007). Respondents answered from 1 (*very uninterested*) to 5 (*very interested*) on the level of interest on political and current affairs ( $M = 3.12$ ,  $SD = 1.01$ ). Media use measures included print newspaper ( $M = 1.49$ ,  $SD = 1.64$ ), television ( $M = 2.28$ ,  $SD = 1.61$ ), radio ( $M = 1.88$ ,  $SD = 1.99$ ), online newspaper ( $M = 1.57$ ,  $SD = 1.65$ ), and online television ( $M = .68$ ,  $SD = 1.22$ ). In terms of demographics, collected information included gender (male = 48.3%), age ( $M = 3.87$ ,  $SD = 1.41$ ; 4 = 40–49 years old), education ( $M = 5.21$ ,  $SD = 1.87$ ; 5 = senior high school), and household income per month ( $M = 4.66$ ,  $SD = 2.66$ ; 4 = HK\$30,000–\$39,999, equivalent to US \$3,800–\$5,100).

## RESULTS

To prepare the data for analysis, a partial correlation matrix was created by correlating each study variable while partialing out variance explained by the control variables (demographics, media exposure, and political interest). The resulting matrix is summarized in Table 1.

The matrix was examined using structural equation modeling and was entered into the Mplus 7 program using maximum likelihood estimation. Specified paths were based on the theoretical model outlined in Figure 1. To judge whether the data matrix fit with the theoretical model, the study adopted the multiple fit criteria strategy recommended by Hu and Bentler (1999). Accordingly, a good fitting model should have cutoff values of .95 or more for the comparative fit index (CFI) and Tucker-Lewis index (TLI), and scores below .06 and .08

TABLE 1  
Partial Correlation Matrix of Key Study Variables

	1	2	3	4	5	6
(1) Network size	—					
(2) Connections	.43***	—				
(3) News	.43***	.47***	—			
(4) Expression	.36***	.46***	.59***	—		
(5) Efficacy	.34***	.27***	.31***	.31***	—	
(6) Protest	.32***	.28***	.28***	.28***	.36***	—
(7) Participation	.23***	.43***	.32***	.37***	.34***	.28***

Note. All betas are standardized coefficients.

\*\*\* $p < .001$ .

respectively for the root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR).

Testing the Full Model and Respecified Model

Results showed that the full model based on Figure 1 had good fit based on the cutoff criteria:  $\chi^2(1) = 2.84, p = .09$ ; CFI = 1.00, TLI = .95, RMSEA = .06, SRMR = .01, although the TLI and RMSEA scores just managed to meet the suggested criteria. To examine whether model fit can be improved, a respecified model was tested by deleting all nonsignificant pathways between variables found in the full model ( $p > .05$ ). The respecified model showed excellent fit:  $\chi^2(5) = 6.28, p = .27$ ; CFI = 1.00, TLI = .99, RMSEA = .02, SRMR = .01, with marked improvements in the TLI and RMSEA scores (see Figure 2).

Inspection of the direct effects along each step of the model show that connections with public actors ( $\beta = .35, p < .001$ ) and network size ( $\beta = .28, p < .001$ ) were related to Facebook use for news and explained 29% of the variance. Connections with public actors ( $\beta = .23, p < .001$ ) and news ( $\beta = .48, p < .001$ ) predicted expression, accounting for 39% explained variance. Political efficacy was linked with network size ( $\beta = .23, p < .001$ ), news ( $\beta = .12, p < .05$ ) and expression ( $\beta = .16, p < .01$ ), which explained

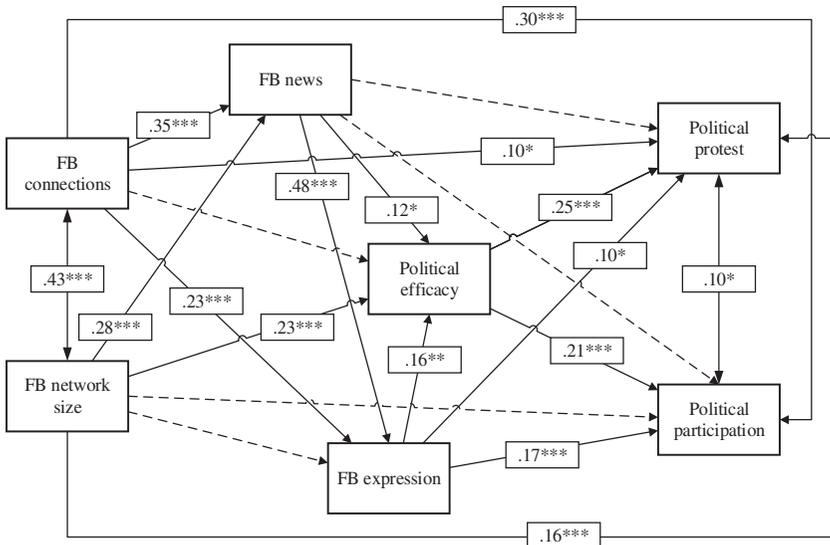


FIGURE 2 Final model.

Note. Betas are standardized coefficients. FB = Facebook. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

TABLE 2  
 Indirect Effects of Facebook (FB) Connections, Size, and News on Political Participation and Protest

	<i>Political Participation</i>	<i>Political Protest</i>
Specific indirect paths from FB connections		
Connections → News → Efficacy	.01*	.01*
Connections → News → Express	.03***	.02*
Connections → News → Express → Efficacy	.01*	.01*
Connections → Express	.04**	.02*
Connections → Express → Efficacy	.01*	.01*
Total indirect effect	.10***	.08***
Direct effect	.38***	.09***
Specific indirect paths from FB network size		
Size → Efficacy	.05***	.07***
Size → News → Efficacy	.01*	ns
Size → News → Express	.03**	.01*
Size → News → Express → Efficacy	ns	.01*
Total indirect effect	.09***	.09***
Direct effect	ns	.16***
Specific indirect paths from FB news		
News → Efficacy	.02*	.03*
News → Express	.08***	.05*
News → Express → Efficacy	.02**	.02**
Total indirect effect	.12***	.10***
Direct effect	ns	ns
Specific indirect paths from FB expression		
Express → Efficacy	.03***	.04***
Total indirect effect	.03***	.04***
Direct effect	.20***	.10***

Note. All betas are standardized coefficients.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

16% of the variance. Network size ( $\beta = .16, p < .001$ ), connections ( $\beta = .10, p < .05$ ), expression ( $\beta = .10, p < .05$ ), and efficacy ( $\beta = .25, p < .001$ ) predicted political protest, collectively explaining 19% of variance, whereas connections ( $\beta = .30, p < .001$ ), expression ( $\beta = .17, p < .001$ ), and efficacy ( $\beta = .20, p < .001$ ) predicted political participation, accounting for 26% of the variance. In terms of direct effects from all the variables to political engagement, findings showed that apart from Facebook use for news and the relationship between network size and political participation, all variables exhibited direct effects on political participation and protest (see Table 2).

### Analyses of Indirect Effects

Table 2 also summarises the total and specific indirect effects between the variables. By including specific indirect effects, it is possible to account for the relative strength of each effect as a proportion of the total indirect effect. In relation to whether political expression will mediate the relationship between Facebook use for news and political participation and protest (H1), findings are consistent with previous studies adopting communication mediation models. They showed that the *news (S)* → *expression (R)* path accounted for the largest proportion of the total indirect effects. Moreover, there were significant paths from *news (S)* → *efficacy (O)* and *news (S)* → *expression (R)* → *efficacy (O)*. With regards to the extent in which Facebook use for news, expression, and efficacy would mediate the relationship between network characteristics and participation (RQ1), the findings again show a variety of significant pathways. For the indirect effect of network size on political participation and protest, the *size (O)* → *efficacy (O)* path accounted for the largest portion of the total indirect effects, whereas the specific indirect effects for connections on political participation and protest were somewhat more equally distributed among different paths.

### Users and Nonusers of Facebook

Discriminant function analysis was conducted to examine the extent to which demographics, political attitudes, media use, and political engagement can distinguish users and nonusers of Facebook in Hong Kong (RQ2). Table 3 summarizes the descriptive statistics of the entered variables and results of the discriminant analysis. Wilks's lambda was significant,  $\lambda = .64$ ,  $\chi^2 = 312.08$ ,  $p < .001$ , indicating that the set of variables can distinguish the two groups. With the exception of political interest, political efficacy, and radio news use, all variables contributed significantly to the model. Closer examination of the standardized function coefficients showed that age (.68), education (−.31), and reading online newspapers (−.29) were the most influential discriminating variables, such that those who are younger, more educated, and read news online more are more likely to be Facebook users. Although political participation and protest were also significant discriminators, the function coefficients were relatively low (−.12 and .03, respectively). Classification results showed that the model successfully predicted 79% of nonusers and 75% of users of Facebook.

## DISCUSSION

This study examined the potential impact of Facebook network size, connections with public political actors, use for news, and use for opinion expression in engendering political engagement in a semidemocratic city state where more than half of its citizens use Facebook. The use of the O-S-R-O-R model offers two

TABLE 3  
Descriptive Statistics of Facebook/non-Facebook Users and Summary of Discriminant Analysis

	Nonuser		User		Discriminant Analysis			Equality of Group Means (p Value)
	M	SD	M	SD	Function Coefficients	Correlation Coefficients		
<b>Demographics</b>								
Age	4.73	1.16	3.31	1.28	.68	.81		<i>p</i> < .001
Education	4.26	1.80	5.82	1.64	-.31	-.60		<i>p</i> < .001
Income	3.89	2.49	5.15	2.37	-.15	-.35		<i>p</i> < .001
<b>Political attitudes</b>								
Interest	3.14	1.04	3.10	1.00	.22	.03		ns
Efficacy	3.04	.95	3.14	.90	.07	-.07		ns
<b>Media use</b>								
Newspaper	1.89	1.79	1.23	1.48	.08	.25		<i>p</i> < .001
TV news	2.63	1.72	2.06	1.50	.12	.25		<i>p</i> < .001
Radio	1.95	2.08	1.83	1.94	-.11	.07		ns
Online newspaper	.89	1.48	1.99	1.61	-.29	-.49		<i>p</i> < .001
Online TV news	.44	1.11	.83	1.27	-.06	-.24		<i>p</i> < .001
<b>Engagement</b>								
Political participation	1.36	1.16	1.72	1.34	-.12	-.18		<i>p</i> < .001
Protest	2.20	1.44	2.54	1.37	.03	-.14		<i>p</i> < .01
<i>N</i>	349		465					

Note: Age: 3 (30–39), 4 (40–49), 5 (50–59); Education: 4 (junior high), 5 (senior high), 6 (associate degree); Income: 4 (HK\$30,000–\$39,999/month; US \$3,850–\$5,150), 5 (HK\$40,000–\$49,999/month; US\$5,150–\$6,450).

benefits for theory building and understanding of political communication processes. First, the integrative model can help organise and integrate the many important bivariate relationships found in previous studies that are often studied independently from each other, such as discussion and participation (Eveland & Hively, 2009), Internet use and efficacy (Kenski & Stroud, 2006), and news and expression (Shah et al., 2005), into a comprehensive and logical framework. Second, the model can help illuminate the different potential pathways that can lead to political engagement. It is particularly useful for the study of SNSs like Facebook because their different informational and interactive affordances, as well as the structure of individuals' social networks, can be placed along the different components of the model and analysed systematically.

Of all the direct effects that link to participation, connections with public political actors exhibited the strongest relationship. This could be understood in terms of the relative status of such actors and their ability to provide "online opinion leadership" by disseminating information that can instigate subsequent behaviours (Xu, Sang, Blasiola, & Park, 2014). A closer inspection of the data shows that 24% of the Facebook users had connections with political and social activists. Comparatively, the number was 17% for political organisations and political affairs commentators and only 10% for government officials. It is understandable that activists have the most connections, as these individuals are generally more adept in using social media communications to propagate their agenda and influence. As well as direct effects, the O-S-R-O-R model also reveals important mediating roles of news and expressive pathways, such that more connections lead to more politically relevant information and opportunities for personal expression, which in turn can develop political efficacy and promote engagement.

Of interest, network size exhibited a direct effect on political protest but not for political participation. One possible reason is that individuals with larger networks are more likely to be connected to political and social activists who instigate protests, which means more opportunities to receive mobilizing information. Moreover, protests entail some element of risk so larger networks may provide more social capital and social support. These explanations are to some extent supported by the mediating effect of political efficacy, which comprised the largest proportion of the total indirect effects. Larger networks provide more political information and opportunities of participation, thus engendering feelings that one is capable of engaging effectively in a protest.

Facebook use for news had no direct effects on either political participation or protest, which seemed to contradict the findings of past studies (e.g., Gil de Zúñiga et al., 2012). However, examination of the indirect effects shows that the relationships are mediated mostly by expression, which is consistent with a long line of findings derived from communication mediation models. This is understandable in the context of Facebook because news posts displayed on the Wall

have limited capacity to carry information. Unless the user pays special attention or does something with the post (i.e., Like, Comment, Share), there is likely to be little cognitive engagement with the content.

Examination of the variables that best distinguish users and nonusers of Facebook provided some insights into a possible second-level digital divide. It is perhaps not too surprising that Facebook users are generally younger, are more educated, and have higher income, as such individuals tend to be earlier adopters of new technologies. Yet, despite these socioeconomic “disadvantages,” nonusers are not less interested in politics and feel just as efficacious in their ability to participate in politics compared to users. Descriptive statistics showed that they are heavier users of newspapers and television news, suggesting that as long as there is some kind of news exposure, people in general would feel competent about their ability to understand and participate in politics regardless of whether the news source is from traditional or social media. The key difference is behavioural: Facebook users are more likely to engage in politics and protests compared to nonusers. As Dimitrova et al. (2014) pointed out, social network sites have specific functions that are particularly conducive to creating connections with others and mobilizing collective actions, which in turn provide more opportunities for political engagement. The comparisons thus point to a possible “participation divide” in that nonusers may have fewer opportunities to engage in politics because of their decision not to use Facebook. Of course, these are just preliminary findings, and more substantive and longitudinal studies are required to ascertain whether this is the case. Given that Facebook penetration in Hong Kong has been steadily increasing and members of the present younger generation are likely to be Facebook users in the future, there is room for optimism that the participation gap may be reduced over time through the gradual process of generational change (Krueger, 2002).

Several limitations of this study need to be mentioned. First, there are other characteristics of Facebook that could also play a role in the O-S-R-O-R model. For example, more network heterogeneity (i.e., having friends from different backgrounds) may provide greater diversity of information and discussion (Eveland & Hively, 2009) and can be an additional variable in the first O in future studies. Second, the scope of this study is limited to Facebook uses. Even though it is the most popular social media platform in Hong Kong, individuals do use other platforms such as WeChat and WhatsApp messaging services. Moreover, the study did not take into account offline networks and behaviours. To what extent SNS networks overlap with each other in the online sphere and integrated as a whole with offline networks warrant further investigation because overlapping networks may exponentially increase network, informational, and expression effects on participation. For example, Facebook use for news can feasibly lead to online expression *and* offline talk. Previous studies provide some evidence of these cross-cutting effects (e.g., Shah et al., 2005). Third, this study focused on the more traditional forms of political participation and did not

take into account online forms of political participation. Part of the reason was that, although there is a general consensus on what constitutes offline political participation from decades of political science research, there is less agreement on what constitutes online political participation. Recent work by Vissers and Stolle (2014) suggests two kinds of online participation: those that are essentially online versions of “traditional” offline activities (e.g., contacting politicians) and those unique to online contexts (e.g., sharing opinions on the Facebook wall and joining a social/political Facebook group). This study and others in the literature would generally consider the latter group of activities predictors of participation rather than political participation in the classic sense. Therefore, clearer theorizing of what constitutes online participation and the extent to which it should be analogous to offline participation is needed in future research. Fourth, in terms of context, this study was based on a sample of Hong Kong, so part of the findings can be attributed to unique cultural factors. For example, the transition from Facebook uses and political efficacy to offline participation is much easier in Hong Kong given its densely packed population and highly developed and cheap transportation that facilitate both planned and ad hoc activities. In other societies, the barriers to participation (i.e., geography, cost, etc.) can be much higher so as to prevent participation even one is informed and ready to mobilize. Finally, the cross-sectional research design cannot fully account for causality among the variables. Granted, the theoretical model adopted in this study is in line with extant theorizing. However, more confidence of the findings can be obtained with panel or longitudinal designs.

Despite these limitations, this study makes important contributions to the literature by explicating the mechanisms from different Facebook uses to political participation and protest by applying the O-S-R-O-R model. Rather than conceive Facebook or other social media platforms as a single media with universal effects, which may then lead to decisions to operationalize usage with generic measures, future studies should consider and examine the most prominent features of the technology and analyse their affordances and effects in line with models and findings from past literature.

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