

# Second Screening and the Engaged Public: The Role of Second Screening for News and Political Expression in an O-S-R-O-R Model

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## Abstract

Second screening has become a prevalent media consumption behavior. Nevertheless, the political implications of second screening are not fully understood. Using data from a two-wave panel survey in Hong Kong, this study examines the role of second screening in contributing to an engaged public based on the Orientation-Stimulus-Reasoning-Orientation-Response (O-S-R-O-R) model. In addition, second screening behaviors are differentiated into second screening for news and for expression. The findings show that these two behaviors play significant but different roles in influencing citizens' cognitive (i.e., political knowledge) and psychological (i.e., political efficacy) development. This hybrid media practice also affects political participation directly and indirectly through interpersonal discussion, political knowledge, and political efficacy. Implications of the findings for the development of participatory democracy are discussed.

## Keywords

second screen, communication mediation model, political expression, political participation

Mobile phones have become a necessity in everyday life. Particular attention has been paid to the mobile phone's potential to enhance public engagement as this disruptive technology has accelerated the pace at which people access information and interact with others. In particular, the growing popularity of mobile phones and applications

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(apps) in politics has generated a body of research on how mobile communication activities contribute to democratic engagement (Campbell & Kwak, 2011; Kim, Chen, & Wang, 2016). These studies have documented a positive effect of mobile phone use, especially for news, information, and discussion, on political participation.

In addition to using a mobile phone as the “only screen” (not simultaneously used with TV viewing) to seek information and communicate with others, it is becoming increasingly common to use a mobile phone as a second screen while watching television. A Nielsen report in 2013 suggested that nearly half of smartphone owners and tablet owners use their devices as second screens while watching TV every day. This growing second screening practice has recently received a great deal of scholarly attention as researchers have strived to understand whether this type of media use practice could play a significant role in promoting a more engaged public. However, empirical research about second screen use is still in its nascent stage, and the effects of engaging in second screening on political engagement have not yet been fully explored. This study aims to capture a more comprehensive picture of how second screening encourages an engaged public by applying the Orientation-Stimulus-Reasoning-Orientation-Response (O-S-R-O-R) model (Cho et al., 2009; McLeod et al., 2001). In particular, this study focuses on mobile phone use for second screening to build on the literature on second screening behavior as well as mobile phones.

Political communication is increasingly shaped by interactions among older and newer media logics (Chadwick, 2013). Second screening exemplifies the concept of hybrid media in that the use of a second screen embodies a complex bundle of practices that involve integrating and switching across and between live broadcasting media and mobile devices. For example, it allows users to be interactively involved in the program they are watching by obtaining more information on the Internet or making relevant comments on social media. Second screening also gives audiences a greater ability to shape public discourse alongside political elites’ narrative given that the hybrid environment allows them to be more engaged in political information and conversation with a mixture of different sources, such as alternative media and social opinion cues (Barnidge, Gil de Zúñiga, & Diehl, 2017)

Although previous studies have examined whether and to what extent second screening directly influences political participation, the underlying dynamic has not been fully documented. This study utilizes the O-S-R-O-R model, a well-established integrative framework that details the process of media effect, to explicate the reasoning process (the first R) in second screening by differentiating second screening for political expression from second screening for news and information (S). It also tests both political efficacy and political knowledge as the two orientations (the second O). Thus, this study provides insight into second screening as a hybrid media practice that provides paths for citizens to engage in politics (the second R) from a process-oriented approach.

Scholars have documented the potential of second screening to be an influential prodemocratic practice (Gil de Zúñiga & Liu, 2017; McGregor & Mourão, 2017). The popularity of mobile use in Hong Kong as well as its political situation and media environment provides a rich context for this study to understand the effect of second

screening. Hong Kong is one of the most mobile-centric cities in the world, with mobile phone penetration exceeding 200% (Office of the Communications Authority, 2018). In addition, it has a politically active landscape. The 2016 Legislative Council Election featured a record number of candidates and more than 2.2 million voter turnout (58% of the electorate). Although Hong Kong has a semi-democratic political system, its political environment has grown more tense in the past few years under China's sovereignty. A series of large-scale protests since 2003 and the 2014 Umbrella Movement have highlighted accumulated conflict and entrenched confrontation between the Chinese government and the people of Hong Kong regarding democratization. Despite politically vibrant activities such as elections and social movements, however, Hong Kong's mainstream media has increasingly engaged in self-censorship due to Chinese authorities' growing interference in the media; Hong Kong's World Press Freedom Index ranking dropped from 18th in 2002 to 70th among 180 places worldwide in 2018 (Reporters Without Borders, 2018).

Second screening allows news audiences to access more diverse information sources, provides a space for opinion expression, and gives more power to the audience relative to media organizations, political parties, and politicians (Chadwick, 2013). Second screening also plays an important role in the development of participatory democracy and has been found to be more prevalent among citizens in countries such as China, Brazil, and Turkey, where the press freedom rankings are lower and journalistic media are less trustworthy (Gil de Zúñiga & Liu, 2017). Understanding the role of second screening in the context of elections in Hong Kong is, therefore, germane and timely.

## **The O-S-R-O-R Model and the Role of Second Screening**

How media use facilitates political participation, a core element of a healthy democracy, has long been a central interest for scholars. Media effects studies have shifted from examining the direct effect with the "Stimulus-Response (S-R)" framework to seeking indirect effects by exploring what factors mediate the effect of media use on political behaviors (Cho et al., 2009; McLeod et al., 2001). To examine not only *whether* but also *how* second screening influences political behaviors, this study adopts the O-S-R-O-R model, which derives from both communication and cognitive mediation models. The O-S-R-O-R model is an integrative and parsimonious framework that has been proposed to examine the mutual dynamics of media use and political behaviors when several different dimensions are considered, including interpersonal-communicative, cognitive, and psychological antecedents. The model does not assume that media use influences political action directly. Instead, it explicates that media use should indirectly affect behaviors through prompting different political reactions and orientations. Furthermore, the model highlights the dual roles of mass and interpersonal communication in facilitating information acquisition and dissemination through interpersonal networks. This is a suitable framework for this study, which aims to distinguish between second screening for news and information and for expression. Both the communication mediation and cognitive mediation

models and how they integrate into the O-S-R-O-R model are detailed below, followed by an explanation of how the O-S-R-O-R model functions in the second screening context.

The *communication mediation model* (Orientation-Stimulus-Orientation-Response; McLeod, Scheufele, & Moy, 1999) posits that communicative behaviors (i.e., news media use and political discussion) are the stimulus (S) that plays a significant role in mediating the effects of structural-objective factors (i.e., personal background dispositions, the first O) on political response (R). This model demonstrates the significant effects of mass and interpersonal communication on engagement in political activities. It further considers the “internal states” (the second O) that mediate the effect of media use (S) on political action (R) in the indirect process. The second set of orientations in the model comprises any cognitive, attitudinal, and psychological outcomes of news media use that prompt political participation (McLeod, Kosicki, & McLeod, 2002). Previous research suggests that political knowledge and political efficacy play significant roles as second orientations that help direct the media effects to behavioral outcomes (Chan, Chen, & Lee, 2017; Jung, Kim, & Gil de Zúñiga, 2011; McLeod et al., 1999).

The O-S-O-R model was later combined with the *cognitive mediation model* (Eveland, 2001) and became the O-S-R-O-R model. This framework includes reasoning (the first R) as a significant mediator for news media use to produce political outcomes (Cho et al., 2009). The model separates the stimuli by distinguishing between “reception” and “expression” of the information. The reception of information from the media continues to be the Stimuli, whereas messaging and discussion that comprise the expressive behavior become the Reasoning component (the first R). Therefore, Reasoning entails cognitive processes by which mental elaboration and cognitive reflection take place (Eveland, 2002). Cho and his colleagues (2009) emphasize the significant role of opinion expression and interpersonal discussion as the reasoning process because these expressive behaviors can facilitate greater belief in one’s competency to talk about and understand political issues (Jung et al., 2011; Kenski & Stroud, 2006).

To summarize, typical applications of the O-S-R-O-R model include sociodemographic variables (e.g., income, education, age, and gender) as the first O. Because these variables can affect the extent to which second screening behaviors contribute to the political variables in this model, they are residualized for all statistical tests of relationships (Chan et al., 2017; Jung et al., 2011). The “S” represents the media variables, and the first R is the expressive behaviors. The second O stands for cognitive and psychological attributes caused by stimulus and reasoning, including political knowledge and efficacy (Jung et al., 2011; McLeod et al., 1999), and participatory behaviors are the responses (the second R). Taken together, the O-S-R-O-R model provides an overall picture to understand the effects of second screening by revealing a more comprehensive mediation sequence among different factors that eventually lead to behavioral outcomes.

A few simplifying assumptions of the model need to be noted. Indeed, many of the paths could be bidirectional in reality, but this study proposes the causal order

following the above-explicated theoretical arguments from the O-S-R-O-R model as the model is theorized with a causal structure among these variables (Cho et al., 2009). The causal structure model has been supported in the literature through empirical testing with different types of data sets (e.g., cross-sectional data and two-wave panel data) and with model comparisons regarding different sequences of the paths (e.g., completely or partially reversed models) and different analytical approaches (e.g., cross-sectional model, fixed-effects model, and auto-regressive model; Eveland, Hayes, Shah, & Kwak, 2005; Shah et al., 2007; Shah, Cho, Eveland, & Kwak, 2005). Accordingly, there are theoretical and empirical reasons to expect the proposed direction. This study utilizes a two-wave data set and controls for Wave 1 levels of mediators and dependent variables to make the tests of causal links more robust.

Nevertheless, it is worth noting that few studies to date have formally tested the full O-S-R-O-R model, in particular when mobile use is considered. A notable exception was Chan et al.'s (2017) study that utilized the O-S-R-O-R model (with the first O as the controls) to explicate how mobile and social media use affected political participation through messaging, discussion, and political efficacy. However, the cognitive factor (i.e., political knowledge) as the second orientation was not included in the model. As research on second screening is in its nascent stage, work to date has not yet fully explored the process regarding the effect of second screening behaviors on political participation. For instance, McGregor and Mourão (2017) found that second screening for news mediates the path between TV news consumption and online political participation, but they did not include the reasoning components (e.g., political expression and discussion) and the second orientations (e.g., political efficacy and political knowledge) when they applied the communication mediation model. The limited evidence regarding the role of second screening and the underlying process in influencing political outcomes makes this study necessary.

### **Explicating Stimuli and Reasoning Process in Second Screening: Differentiating Second Screening for News and Information and Second Screening for Expression**

To understand the O-S-R-O-R model in the second screening context, this study furthers the literature by distinguishing between second screening for news and information and for expression. Most previous studies used “second screening” as a broad umbrella term without differentiating different kinds of second screening behaviors (e.g., Barnidge et al., 2017; Gil de Zúñiga, Garcia-Perdomo, & McGregor, 2015; McGregor & Mourão, 2017). Only a very few studies have examined different second screening behaviors, such as encountering debate information, reading about the debate, and commenting on the debate, and how they influence citizens' attention, political learning, and democratic engagement (Chadwick, O'Loughlin, & Vaccari, 2017; Vaccari, Chadwick, & O'Loughlin, 2015). However, only bivariate relationships were examined. The underlying process regarding how different second screening behaviors affect political engagement through communication mediation and cognitive mediation processes has not yet been fully explored.

Second screening for news and information is proposed to be situated as the Stimuli in the model, whereas second screening for expression should belong to the Reasoning process for the following reasons. The concept of second screening comprises both information consumption and expressive commentary during media events (Barnidge et al., 2017). For information consumption, as Vaccari et al. (2015) theorized, second screening is a mixed bundle of practices which involves different combinations of active information-seeking practices via computer-mediated media and passive information-reception practices associated with broadcast media. Accordingly, second screening for news and information should be more related to information exposure and consumption, which makes sense to be examined as the Stimuli. This would be similar to other studies in which social media use for news (Gil de Zúñiga, Molyneux, & Zheng, 2014), mobile use for news (Chan et al., 2017), online information seeking (Shah et al., 2005), and broadcast media use (Jung et al., 2011) are investigated as stimuli.

Second screening for expression is proposed as a reasoning element in the model given that opinion expressive behavior plays an essential role in deliberative and participatory democracy (Benhabib, 1996; Chen, 2018b). This study conceptualizes opinion expressive behaviors in a more general way that includes both political expression and discussion given that expressing and exchanging opinion are different in their levels of interactivity. For example, Chadwick et al. (2017) examine the effect of commenting on a political debate on social media as a second screening expressive behavior but did not specifically capture discussion behaviors. Huber, Gil de Zúñiga, Diehl, and Liu (2019) investigate discussion behaviors in their second screening measurement by asking how often people use an additional electronic device to access the Internet or social media to get more information or to “talk about” the program or event they are viewing but do not examine political expression. Accordingly, this study includes these different expressive behaviors to examine their combined effect on participatory democracy.

People second screen not only to obtain news but also to express their opinions. Scholars have documented the prevalent second screening behavior of real-time commenting online during political debates or news (Vaccari et al., 2015). Through commenting on the event or engaging in conversations about it, the deliberative nature of political expression and discussion that facilitates political reasoning is embedded in the second screening practice. In the process of expressing an opinion and talking with others, people who second screen can carefully and continuously think about topics, weigh the pros and cons, and crystallize their dispositions as political expression entails mental elaboration and collective consideration of diverse arguments from different sources (Benhabib, 1996; Kim, Wyatt, & Katz, 1999). This series of expressive behaviors should induce strong political orientations that enhance political knowledge (Eveland et al., 2005; Jung et al., 2011), boost political efficacy (Chan et al., 2017; Jung et al., 2011), and mobilize people to participate in politics (Gil de Zúñiga et al., 2014; McLeod et al., 1999).

Furthermore, second screening for expression should encourage face-to-face interpersonal discussion given that channel-specific expression is a significant act that

takes place in between channel-specific media use and face-to-face political discussion. As Huber et al. (2019) argued, exposure to real-time conversations online and having conversations with others related to specific content while watching TV may subsequently lead to conversations about other topics both online and offline. The reasoning component (the first R) in the O-S-R-O-R model should comprise two inter-related forms of expressive and conversational behaviors, including second screening expression (a mediated channel-specific expression and discussion) and interpersonal political discussion (a face-to-face opinion exchange in everyday life). Therefore, second screening for expression together with face-to-face political discussion is proposed to represent the significant reasoning process (the first R) in the O-S-R-O-R model. The following hypothesis is proposed:

**H1:** Second screening for news and information will be positively associated with second screening for political expression (**H1a**) and interpersonal political discussion (**H1b**).

## **Explicating the Second Orientations: Political Knowledge and Efficacy in the Effect of Second Screening Use on Political Participation**

Political knowledge and efficacy are cognitive and psychological outcomes that play significant roles as the second orientations in the O-S-R-O-R model (Dimitrova, Shehata, Strömbäck, & Nord, 2014). They have been hypothesized and found in many previous studies as a consequence of media use and political conversation (Dimitrova et al., 2014; Eveland et al., 2005; Goh, 2015; Kenski & Stroud, 2006). Well-informed citizens will be able to make reasoned decisions and be engaged in public affairs (Delli Carpini & Keeter, 1996). Individuals' subjective perception of their ability to make a difference in the political process (i.e., political efficacy) is another significant foundation for various types of participation in politics (Kenski & Stroud, 2006; Verba, Scholzman, & Brady, 1995). This study continues this stream of research by examining political knowledge and efficacy as the two second orientations and their roles in the second screening context.

### *Political Knowledge*

People learn about politics and public affairs from the news media and from engaging in the reasoning process by expressing opinions and discussing politics with others, which should, in turn, mobilize political activity (Verba et al., 1995). As second screening has become a prevalent media use behavior, there is a growing debate about whether it has a positive or negative influence on people's cognitive and behavioral engagement. Some scholars who consider second screening as a nonpurposive act that simulates multitasking are concerned about the negative impact of second screening on cognitive abilities. For example, Van Cauwenberge, Schaap, and van Roy (2014)

found that second screen viewing leads to lower news recall and comprehension. Gottfried and his colleagues (2017) also documented that the effect of debate viewing on campaign knowledge is dulled when viewers simultaneously engage in social media multitasking.

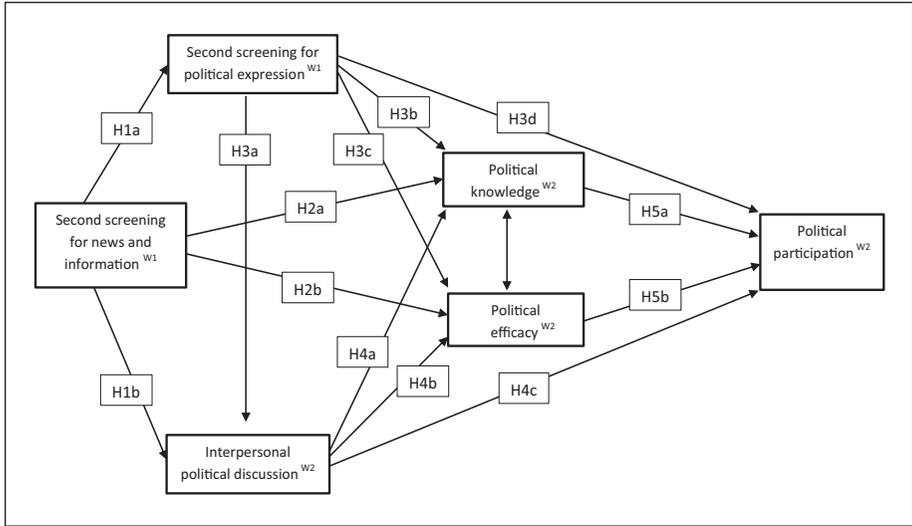
However, the other school of thought argues that second screening is a purposive and hybrid rather than a separate act. While watching a TV program, people access other digital devices, such as mobile phone and laptop, to obtain more relevant information and discuss the issues covered in the program (Gil de Zúñiga et al., 2015). Given that second screening behavior is goal-oriented, which is a complement to rather than a distraction from their behaviors on the first screen device, second screening should encourage cognitive and behavioral engagement. Chadwick et al. (2017) found that people who second screened via social media while watching an election debate were more likely to increase both their attention to the campaign and their perception that they had learned enough to make an informed choice.

Although acknowledging the positive effect of second screening on cognitive ability, studies that focus on the purposive act of second screening have not yet examined its effect on cognitive ability in detail, nor have they tested an O-S-R-O-R model of second screening that incorporates political knowledge, which is a core element (i.e., the second O) that leads to political behaviors (the second R). It is, therefore, important to examine political knowledge as an outcome of second screening, which would in turn encourage participation in political activities (Gil de Zúñiga et al., 2015; McGregor & Mourão, 2017).

### *Political Efficacy*

Political efficacy is defined as “the feeling that political and social change is possible, and that the individual citizen can play a part in bringing about this change” (Campbell, Gurin, & Miller, 1954, p. 187). The concept has been theorized as having two dimensions: internal political efficacy concerns the belief in one’s own competence to understand and participate in politics, whereas external political efficacy is the perception of the government’s responsiveness to the demands of citizens (Niemi, Craig, & Mattei, 1991). Much research has focused on internal political efficacy because media use and communication are more likely to induce internal efficacy than external efficacy (Shah et al., 2007). The extent to which people participate in politics is also more related to one’s belief in one’s abilities to engage in politics (i.e., internal efficacy) than one’s perception of government responsiveness (i.e., external efficacy). Accordingly, the typical application of the O-S-R-O-R model has internal political efficacy as a second orientation.

In addition to political knowledge, the perceived self-ability to understand and participate in politics can also be obtained by different ways of communication, such as news media use and interpersonal communication (Kenski & Stroud, 2006). Once people’s belief in their ability to influence politics is enhanced, they will be more likely to invest greater effort in action. Thus, internal political efficacy has been found to consistently and positively relate to political participation (Kenski & Stroud, 2006),



**Figure 1.** Proposed hypothetical model: An O-S-R-O-R model of communication effects with second screening for news and expression.

and it has been included in most of the studies on political participation with the O-S-R-O-R model (Chan et al., 2017).

Although political knowledge and efficacy play significant mediating roles in the O-S-R-O-R model, research on this mediating relationship in a second screening context is lacking. Researchers have separately examined how mobile phone use leads to political outcomes, such as discussion, political knowledge, and participation, rather than considering the variables and the relationships together to grasp a more comprehensive picture of the process (Campbell & Kwak, 2011; Kim et al., 2016; Lee, Kwak, Campbell, & Ling, 2014). Focusing on second screening behaviors, this study examines political knowledge and efficacy as the second orientations in the O-S-R-O-R model. This study aims to examine a full O-S-R-O-R model and to extend the model by including two differentiated second screening variables (i.e., second screening for news and second screening for expression) to provide an overall picture of how second screening affects individuals' cognitive, psychological, and behavioral outcomes. The following hypotheses are posited, and a research question is raised to examine the indirect effect of TV news on political engagement. A hypothetical model is then proposed (Figure 1):

**H2:** Second screening for news and information will be positively associated with political knowledge (H2a) and political efficacy (H2b).

**H3:** Second screening for expression will be positively associated with interpersonal discussion (H3a), political knowledge (H3b), political efficacy (H3c), and political participation (H3d).

**H4:** Interpersonal discussion will be positively associated with political knowledge (**H4a**), political efficacy (**H4b**), and political participation (**H4c**).

**H5:** Political knowledge (**H5a**) and political efficacy (**H5b**) will be positively associated with political participation.

**RQ1:** To what extent does second screening for news and information indirectly influence political behaviors through second screening for political expression, interpersonal political discussion, political efficacy, and political knowledge?

## Method

### Data

Data for this study came from a two-wave panel survey collected in Hong Kong. Both waves of the survey were administered online using Survey Sampling International (SSI), a Web survey panel company. The first wave ( $W^1$ ) was conducted a week before the election for the 2016 Hong Kong Legislative Council in September. To ensure a better representation of the Hong Kong population, participants were selected according to a stratified quota sampling method, with a quota based on census figures for gender, age, and income. This sample matching method has been validated by and commonly used in previous research (e.g., Iyengar & Hahn, 2009). A total of 1,141 participants completed the survey in  $W^1$ . The second wave ( $W^2$ ) of data collection took place in October 2016, and 813 original respondents completed the survey questionnaire, which yields a retention rate of 71.3%.

### Measures

Focusing on the 2016 Hong Kong Legislative Council election, the measurements of media use are from  $W^1$ , including second screening for news and information and second screening for political expression. The study also includes interpersonal political discussion, political efficacy, political knowledge, and political participation from  $W^2$  with their  $W^1$  measures controlled to capture the effect of media use, specifically second screening.

*Second screening for news and information.* This study follows previous research in the way it assesses second screening but specifically separates the second screening activities into for news and information and for political expression (Gil de Zúñiga et al., 2015; McGregor & Mourão, 2017). Specifically, participants were asked how often on a 4-point scale (1 = *never* to 4 = *always*) they used a mobile phone as a second screen to *get news or information* in the past 6 months while watching (a) a news broadcast or election coverage and (b) political speeches or debates. The two items were averaged to form an index of second screening for news and information ( $W^1$   $M = 2.55$ ,  $SD = 0.84$ , Spearman–Brown coefficient = .68).

*Second screening for political expression.* Similar to the measurement of second screening for news and information, participants were asked how often (1 = *never* to 4 = *always*) they used a mobile phone as a second screen in the past 6 months for the following

activities: (a) express opinions while watching a news broadcast or election coverage, (b) discuss related topics while watching a news broadcast or election coverage, (c) express opinions while watching political speeches or debates, and (d) discuss related topics while watching political speeches or debates. The four items were averaged to form an index of second screening for political expression ( $W^1 M = 2.28$ ,  $SD = 0.87$ ,  $\alpha = .90$ ).

*Interpersonal political discussion.* Using a 4-point scale (1 = *never* to 4 = *always*), respondents were asked the frequency with which they discussed politics or public affairs with people who agreed with them and with those who disagreed with them (e.g., Valenzuela, Kim, & Gil de Zúñiga, 2012). The two items were averaged to form an index of interpersonal political discussion ( $W^1 M = 2.46$ ,  $SD = 0.73$ , Spearman–Brown coefficient = .70;  $W^2 M = 2.26$ ,  $SD = 0.65$ , Spearman–Brown coefficient = .71).

*Political efficacy.* Three items measured levels of efficacy on a scale from 1 = *strongly disagree* to 7 = *strongly agree*: “People like me can influence government,” “I consider myself well qualified to participate in politics,” and “I have a good understanding of the important political issues facing Hong Kong” ( $W^1 M = 3.38$ ,  $SD = 1.34$ ,  $\alpha = .82$ ;  $W^2 M = 3.46$ ,  $SD = 1.31$ ,  $\alpha = .85$ ).

*Political knowledge.* Participants were asked to choose the correct answers to six questions related to the election for the 2016 Hong Kong Legislative Council: “How many members in the Legislative Council are from geographical constituencies?” “Which party has the most members in the Legislative Council?” “Which of the candidates was disqualified during the election?” “Who proposed the ThunderGo plan?” “For how many years is a legislator elected?” and “After the election, which party has become the biggest party in the pro-democracy camp?” For each correct answer, respondents received 1 point. Incorrect and “don’t know” answers were coded as 0. The answers were summed up to construct the variable of political knowledge ( $W^2 M = 3.42$ ,  $SD = 1.46$ ,  $\alpha = .60$ ).<sup>1</sup>

*Political participation.* Following previous studies, respondents were asked if during the past 6 months they had engaged in any of 10 different political activities such as “signed a petition to authorities,” “worked or volunteered for related groups,” “called or sent a letter to TV stations,” “contacted an elected public official,” “donated money,” and “participated in demonstrations, protests, or marches.” Responses to each statement were coded in binary fashion (1 = *yes*, 0 = *no*) and summed into a single index ( $W^1 M = 4.01$ ,  $SD = 3.72$ ,  $\alpha = .95$ ;  $W^2 M = 4.98$ ,  $SD = 3.88$ ,  $\alpha = .95$ ).

*Control variables.* This study controls for the following demographic characteristics: gender (male = 47%), age ( $M = 5.58$ ,  $SD = 2.36$ ,  $Mdn = 40$ -44 years), education ( $M = 5.99$ ,  $SD = 1.59$ ,  $Mdn =$  college degree or professional certificate), household income per month ( $M = 7.26$ ,  $SD = 2.47$ ,  $Mdn =$  HK\$30,000-HK\$39,999, equivalent to US\$3800-US\$5100). In addition, political interest ( $M = 3.83$ ,  $SD = 1.56$ ), political

**Table 1.** Partial Correlations of Key Variables.

		1	2	3	4	5	6
1	SS news <sup>W1</sup>	1					
2	SS expression <sup>W1</sup>	.76***	1				
3	Discussion <sup>W2</sup>	.06*	.12***	1			
4	Knowledge <sup>W2</sup>	.07*	.10**	.16***	1		
5	Efficacy <sup>W2</sup>	.09**	.11**	.07*	.03	1	
6	Participation <sup>W2</sup>	.14***	.13***	.14***	.11**	.16***	1

Note. The control variables include age, gender, education, income, political interest, political ideology, and news media use. The corresponding <sup>W1</sup> measures of political discussion, political efficacy, and political participation are also controlled. SS = second screening; <sup>W1</sup> = first wave; <sup>W2</sup> = second wave. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

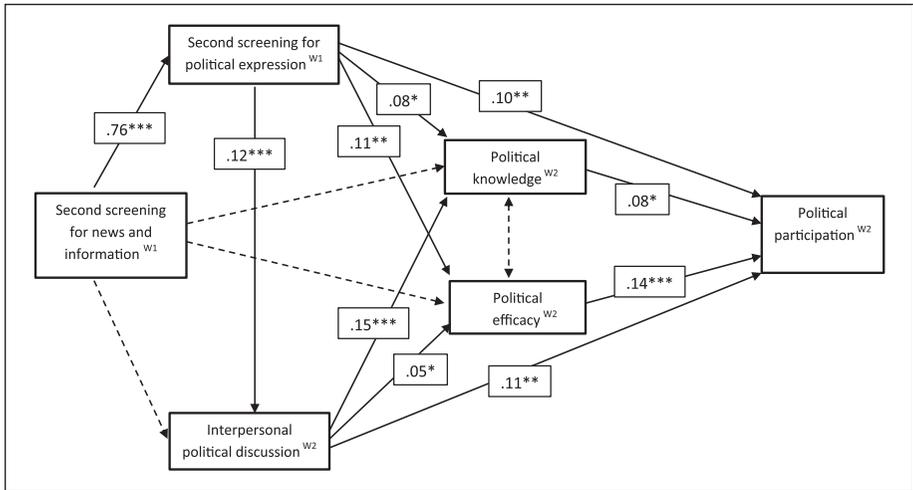
ideology ( $M = 3.65$ ,  $SD = 1.33$ ,  $Mdn = \text{neutral}$ ), discussion network size (after transforming using the natural logarithm:  $M = .54$ ,  $SD = 0.48$ , skewness = .53), and news media use (averaging TV, online and offline newspaper, radio, and magazine:  $M = 4.27$ ,  $SD = 1.27$ ,  $\alpha = .69$ ) are included as control variables.

## Results

### *The Hypothesized and Revised Models*

A structural equation model was conducted using Mplus with maximum likelihood estimation. Given that the study focused on understanding the effect of second screening behavior, the variables representing the first O (i.e., age, gender, income, and education) are residualized to control their confounding effects (e.g., Chan et al., 2017; Jung et al., 2011). Before testing the hypothesized model, the control variables were residualized for each key variable. Table 1 presents the correlation between the variables. In this procedure, all the relationships among the variables can be free from the influence of the control variables (i.e., age, gender, income, education, political interest, political ideology, discussion network size, and news media use). Using the variables with controls residualized, the validity of the proposed model depicted in Figure 1 was tested. The results show a very good fit for the proposed model based on the criteria recommended by Hu and Bentler (1999). The chi-square test of model fit is 3.73 with  $p = .06$  and  $df = 1$ , root mean square error of approximation (RMSEA) = .050, comparative fit index (CFI) = .997, Tucker–Lewis index (TLI) = .961, and standardized root mean square residual (SRMR) = .008.

Although the hypothesized model has a good fit, three of the hypothesized relationships are not significant: the direct paths between (a) second screening for news and information and interpersonal discussion (**H1b**:  $\beta = -.07$ ,  $p = .09$ ), (b) second screening for news and information and political knowledge (**H2a**:  $\beta = .00$ ,  $p = .49$ ), and (c) second screening for news and information and political efficacy (**H2b**:



**Figure 2.** The final orientation-stimulus-reasoning-orientation-response model of communication effects with second screening for news and expression. Note. Sample size = 813. Goodness of fit:  $\chi^2 = 5.52$ ,  $df = 4$ ,  $p = .24$ ; CFI = .999, TLI = .995, RMSEA = .019, and SRMR = .009. Path entries are standardized coefficients. One-tailed test. The effects of demographic variables (age, gender, education, and income), political interest, political ideology, and discussion network size on endogenous and exogenous variables have been residualized. The corresponding  $W^1$  measures of political discussion, political efficacy, and political participation are also controlled. The solid line indicates that the relationship is significant, whereas the dotted line indicates that the relationship is not significant. The variables included in this analysis accounted for 58% of the variance in second screening for political expression, 1.5% in interpersonal political discussion, 1.7% in political efficacy, 3.3% in political knowledge, and 5.9% in political participation.

$\beta = -.01$ ,  $p = .44$ ). All other paths are significant, which will be further discussed in the revised model below. All the path coefficients are depicted in Figure 2.

To further refine the model, the three nonsignificant paths ( $p > .05$ ) were removed and the model was tested again. Results for the revised model showed a very good fit. The chi-square test of model fit is 5.52 with  $p = .24$  and  $df = 4$ , CFI = .999, TLI = .995, RMSEA = .019, and SRMR = .009. As the hypothesized and the revised models were nested, a chi-square difference test was conducted. The difference in the chi-square statistics between the hypothesized and the revised models was not statistically significant ( $\Delta\chi^2 = 1.79$ ,  $\Delta df = 3$ ,  $p = .62$ ), indicating that the hypothesized model with more parameters did not explain the data significantly better than the revised model. Thus, the revised model with the nonsignificant path removed was preferred because it is more parsimonious.

Inspection of the direct effects along each step of the revised model shows that second screening for news and information was significantly related to second screening for political expression (**H1a**:  $\beta = .76$ ,  $p < .001$ ). Second screening for political expression significantly predicted interpersonal political discussion (**H3a**:  $\beta = .12$ ,

**Table 2.** Indirect Effects of SS for News on Political Participation.

	$\beta$
Effects from second screening for news to political participation	
Total indirect	.102***
Specific indirect	
SS news $\rightarrow$ SS expression $\rightarrow$ Participation	.073**
SS news $\rightarrow$ SS expression $\rightarrow$ Interpersonal discussion $\rightarrow$ Participation	.010*
SS news $\rightarrow$ SS expression $\rightarrow$ Efficacy $\rightarrow$ Participation	.012**
SS news $\rightarrow$ SS expression $\rightarrow$ Knowledge $\rightarrow$ Participation	.005*
SS news $\rightarrow$ SS expression $\rightarrow$ Interpersonal discussion $\rightarrow$ Efficacy $\rightarrow$ Participation	.001#
SS news $\rightarrow$ SS expression $\rightarrow$ Interpersonal discussion $\rightarrow$ Knowledge $\rightarrow$ Participation	.001*

Note. Standardized regression coefficients ( $\beta$ ) reported. SS = second screening.

# $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . One-tailed test.

$p < .001$ ). Regarding the second orientations (i.e., political knowledge and political efficacy) as the outcome, second screening for expression was significantly related to political knowledge (**H3b**:  $\beta = .08, p < .05$ ) and political efficacy (**H3c**:  $\beta = .11, p < .01$ ). Interpersonal discussion was also associated with political knowledge (**H4a**:  $\beta = .15, p < .001$ ) and political efficacy (**H4b**:  $\beta = .05, p < .05$ ). Second screening for expression (**H3d**:  $\beta = .10, p < .01$ ), interpersonal political discussion (**H4c**:  $\beta = .11, p < .01$ ), political knowledge (**H5a**:  $\beta = .08, p < .05$ ), and political efficacy (**H5b**:  $\beta = .14, p < .001$ ) was related to political participation.

### The Indirect Effects

Further analyses examined the indirect effect of second screening on political participation (**RQ1**). To understand how reasoning behaviors (i.e., second screening for political expression and interpersonal political discussion) and the second orientations (i.e., political efficacy and political knowledge) mediate the relationship between second screening for news and information and political behaviors, Table 2 details the indirect effects. Results show that second screening for news can indirectly influence political participation through the two reasoning behaviors (i.e., second screening for expression and interpersonal political discussion). The two reasoning behaviors further enhance one's cognitive ability and belief in one's competence to participate in politics, which in turn promotes political participation.

More specifically, the findings demonstrate a two-step channel-specific process (i.e., news and informational use  $\rightarrow$  expressive use). First, second screening for news and information leads to second screening for expression. Second, second screening for expression affects political participation through different significant pathways. More specifically, second screening for expression can directly influence cognitive, psychological, and behavioral outcomes. It can also indirectly influence those outcomes through interpersonal political discussion. Second screening as a two-step

channel-specific process accounted for the largest proportion of the total indirect effect in the model.

Findings from the indirect effects show that second screening can facilitate political behaviors through interpersonal discussion, political efficacy, or political knowledge. The findings also demonstrate that political knowledge and efficacy are the two significant second orientations in the model. They represent one's cognitive and psychological engagements that are enhanced by reasoning behaviors and further mobilize political engagement.

## Discussion

Second screening plays a significant role in explaining the mechanisms behind the effects of news exposure and political discussion on political engagement in the mobile era. Compared with previous studies that mostly focused on bivariate relationships, this study applies the full O-S-R-O-R model by incorporating second screening for news and information and for expression. The model offers a more comprehensive framework that helps to integrate many important relationships in the second screening literature and facilitates understanding of the influences of different second screening behaviors on cognitive, psychological, and behavioral outcomes in political communication processes.

Results from this study suggest that different forms of second screening behaviors have differential effects on political outcomes in different dimensions. Second screening can be categorized into bundles that consist either of relatively active "lean-forward" practices, such as information-production, or relatively passive "lean-backward" information-reception practices (Vaccari et al., 2015). Findings in this study suggest that second screening for political expression as lean-forward practices that involve opinion expression and conversation has the strongest and most consistent relationships with different modes of political outcomes, including interpersonal political discussion, political knowledge, political efficacy, and political participation. Second screening for news and information as a relatively passive information receiving behavior, however, cannot directly influence reasoning, cognitive, psychological, and behavioral outcomes. Instead, it needs to prompt second screening for expression to further the engagement. In other words, second screening practices can encourage an engaged citizenry only when they mobilize some constructive involvement with opinion expression and conversation about a broadcast event. If people second screen only for additional information about an event and then fail to become part of the conversation through the affordances of mobile phones and social media, they will not be encouraged to further engage in the event. This result is similar to what Vaccari et al. (2015) found, and it may also explain why the current study did not find a significant direct relationship between second screening for news and information and interpersonal political discussion, but only a mediated relationship through second screening for political expression. To sum up, whether second screening is an active or passive bundle of practices matters for participatory democracy.

Explicating the concept of second screening and differentiating second screening behaviors when examining their effect on political engagement is important. This addresses the limitation of several previous studies that measured second screening in general. This study explores second screening in more detail to specifically focus on second screening for information versus expression, which continues the line of research in which individuals have been found to have different motivations for second screening (i.e., information motivations and discussion motivations; Gil de Zúñiga et al., 2015).

In addition, the findings of this study support the O-S-R-O-R model and add to the literature on the model in a second screen context. In particular, second screening can be part of both the Stimuli and the Reasoning components that are essential to the communication effect and process. This adds another layer to the conceptualization of second screening: it can be not only a complex bundle of practices involving different media and devices, but also a bundle of practices in the communicative mediating process that involves acquiring political information (i.e., Stimuli), and more importantly, actively contributing to conversation (i.e., Reasoning) that can bypass elite discourse and reverse the top-down communication process and effect. This argues against the statement that digital media only facilitates lower threshold activities which cannot contribute to higher threshold endeavors, resulting in what has been referred to as “clicktivism” (Shulman, 2009) and “slacktivism” (Christensen, 2011).

Findings about the O-S-R-O-R model also provide evidence of the positive effect of second screening on political efficacy and political knowledge, which play significant mediating roles in promoting political participation. There have been mixed findings regarding the relationship between second screening and political knowledge in the literature. In addition, the path between second screening and political participation seems to be a large leap when the communication mediation model and the cognitive mediation model both argue that these two factors are important in orienting news media use and expressive behaviors to political participation. Citizens need to believe in their ability to affect politics to be able to take action. They also need to be informed to understand the political process and be involved in the political world. Findings from this study show that second screening, in particular goal-oriented opinion expression, enhances political efficacy and facilitates political learning that will in turn lead to political action. These findings differentiate second screening from media multitasking, which has been found to have negative effects on political knowledge due to the limited cognitive capacity to process information (e.g., Gottfried, Hardy, Holbert, Winneg, & Jamieson, 2017). By contrast, second screening plays a significant role in the development of a healthy participatory democracy by informing the citizenry and mobilizing political participation.

This study contributes not only to the literature on second screening but also to research on mobile phones by examining mobile phones specifically as the second screen. The constantly connected and networked nature of mobile phones has powered the way people keep in touch with their networks and access information. Mobile phones have been indicated as the most-used second screening devices (Vaccari et al., 2015). People are almost always online and on their mobile phones, and easy-to-use

apps further contribute to vastly increased mobile phone use (Rainie & Wellman, 2014). Thus, not only does second screening largely involve social media use, but it is also a practice that is most likely to take place on a mobile phone due to its constant accessibility, connectivity, and high penetration rate, particularly in Hong Kong where this study was conducted. The Nielsen Media Index (2018) suggests that more people use mobile phones than PCs or tablets to go on the Internet in Hong Kong. Therefore, this study provides insight into a specific hybrid mode of second screen practices that involve mobile phone use. With a great deal of information being exchanged, second screening's instant and reflective features on a mobile phone spur citizens' engagement in politics in cognitive, psychological, and behavioral dimensions.

There are several limitations to be considered when interpreting the results of this study. Methodologically, the two-wave nationally representative panel data used in this study help to establish a causal order between second screening and the political outcomes in the cognitive, psychological, and behavioral dimensions and to provide a picture that illustrates the O-S-R-O-R process that can be generalized to a broader population. The two waves are about 1 month apart, ensuring a high retention rate (71.3%). The short period between waves, however, may raise some questions about the extent to which this study can draw clear causal relationships. Furthermore, it may not be easy to trace the causes and effects when it comes to the relationships between Stimuli and Reasoning and between the second Orientations and the final Response because the variables were measured in the same waves. Thus, findings from the study cannot rule out every potential alternative explanation for the political outcomes. Future researchers should collect data from multiple waves to draw a more conclusive causal effect from the O-S-R-O-R model.

Another limitation is in the measurement of second screening as the study only captures two types of second screening behaviors: (a) news and informational use and (b) expressive and conversational behaviors. Future researchers may wish to probe the level of information diversity on second screening. As second screening occurs primarily on social media (Freelon & Karpf, 2015; Giglietto & Selva, 2014) and social media are likely to facilitate exposure to heterogeneous information (Kim, 2011), it is important to explore what kind of news and information people read and what they express on the second screen. Whether second screening keeps people in their echo chamber or expands their point of view matters because second screening can serve as a channel to assess oppositional and alternative information, which helps to enhance cognitive abilities, enlarge argument repertoire, and contribute to deliberative democracy. Future researchers may consider including nonpolitical second screening behaviors to grasp a more comprehensive understanding of second screening behaviors. As this research focuses on mobile phones as the second screen, future studies may address more comprehensive questions regarding the use of second screening devices to understand whether the effects of second screening may differ.

While attempting to clarify the communication process in the second screening context, this study focuses on the 2016 election of the Hong Kong Legislative Council. More research is needed to explore the role of second screening in different political contexts. For example, second screening can be used to pay attention to a specific

political issue. Thus, the model can be examined to understand issue publics and their issue specificity (Chen, 2018a; Kim, 2009). The model can also be extended to explore more indirect and conditional effects (Valkenburg & Peter, 2013). For instance, what motivates people to second screen and leads to political consequences? Furthermore, under what conditions can the communication process be enhanced?

Despite these limitations, this study contributes to the literature by testing the complete O-S-R-O-R model with the role of second screening considered and clarifies the reasoning process in the context of second screening. The findings, therefore, shed valuable light on the effects of second screening on political engagement in the mobile era and provide evidence that this hybrid media practice facilitates different pathways to engage in politics.

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### Note

1. Political knowledge is only measured in the second wave ( $W^2$ ) to avoid the testing effect. To compensate for this issue, another model with political knowledge replaced by cognitive elaboration was tested in  $W^2$  with the first wave ( $W^1$ ) measure controlled. The results remain very similar. The only difference is that there is a significant relationship between cognitive elaboration and political efficacy ( $b = .09, SE = 0.04, p < .05$ ), but not between political knowledge and political efficacy ( $b = .02, SE = 0.04, p = .64$ ).

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