

SOCIAL MEDIA SKILLS DIVIDE AND SOCIAL MEDIA  
POLITICAL EXPRESSION: THE MEDIATING ROLE OF PRO-  
ATTITUDINAL AND CROSS-CUTTING EXPOSURE

By  
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for the degree of Master of Arts.

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Chair: Dr. Alcides Velasquez

Date Approved: 14 October 2019

## **Social Media Skills Divide and Social Media Political Expression: The Mediating Role of Pro-Attitudinal and Cross-Cutting Exposure**

### **Abstract**

Increasing social media use for political expression has become prevalent in this late modern era. With the increasing prevalence of social media use, knowledge about how social media are used for political information and expression has become important. Guided by digital divide research, specifically concerning social media skills inequalities, this study explored the direct and indirect effects of social media skills on social media political expression (SMPE). Using an online survey from MTurk, this study found that social media skills were positively related to social media political expression through pro-attitudinal exposure, while the indirect effects through cross-cutting exposure were nonsignificant. Contrary to what was predicted, the relationship between social media skills and social media political expression (SMPE) was negative. Implications for theory are discussed.

**Keywords:** *Social media skills, social media political expression, digital divide, selective exposure, cross-cutting exposure.*

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## Table of Contents

Chapter One: Introduction.....	1
Chapter Two: Literature Review.....	3
Digital Divide.....	3
Social Media Skills.....	6
Social Media Skills and Social Media Political Expression.....	9
Selective Exposure.....	10
Figure 1: Theoretical Model.....	14
Table 1: Theoretical Indirect Model.....	14
Chapter Three: Method.....	15
Chapter Four: Results.....	20
Table 2.....	22
Table 3.....	23
Figure 2.....	23
Chapter Five: Discussion.....	24
Limitations.....	27
Conclusion.....	28
References.....	30
Appendix A.....	43
Appendix B.....	44
Appendix C.....	46

## **Social Media Skills Divide and Social Media Political Expression: The Mediating Role of Pro-Attitudinal and Cross-Cutting Exposure**

### **Introduction**

Social media have become one of the most common ways for getting news and learning about others' political views on a daily basis. For example, Matsa & Shearer (2018) reported that about 68% American adults occasionally get news from social media. In addition, they reported that Facebook, Twitter, and Reddit are major paths to news sites (Matsa & Shearer, 2018). Furthermore, social media facilitate self-expression and interaction with other users in which they encounter information concerning politics and public affairs (e.g., Papacharissi, 2012).

The use of social media for political expression has become important for understanding political attitudes and behaviors. Findings in previous research not only suggested that social media political expression (SMPE) increased political participation (e.g., Gil de Zúñiga, Molyneux, & Zheng, 2014), but also shaped individuals' political self-concept characterized by political interest, self-efficacy, perceived political participation, and perceived political knowledge (Lane et al., 2019). Theoretically, political expression can inform and motivate users to attend media information (Pingree, 2007), resulting in enhancing political knowledge. Furthermore, political expression on SNS group pages (e.g., Harlow, 2012) makes its users become more efficacious for offline political engagement (e.g., Conroy et al., 2012; Velasquez and LaRose, 2015).

Despite the prominence of social media in political domain, it is still less known the extent to which the possession of different levels of skills on social media affects political information exposure and its subsequent behaviors. Individual's Internet adoption, skills, and



usage are unevenly distributed, and it is affected by socioeconomic status. The consequence of such distribution is called digital divide. Based on prior digital divide skills research (e.g., Hargittai & Shaw, 2013, 2015), the current study propounds the concept of social media skills, defined as the perceived ability to use social media effectively and efficiently for political expression, and examines its role in shaping SMPE.

In doing so, this study unveils a mechanism explains SMPE as predicted by social media skills. Specifically, this study examines the mediating effect of pro-attitudinal and cross-cutting exposure in the relationship between social media skills and SMPE. To date, scholars have debated whether social media use contributes to the increase of exposure to politically like-minded information creating polarizing media environment (Himmelboim, Smith, Shneiderman, 2013; Sustain, 2002); or if, on the contrary, social media use encounters more diverse and ideologically heterogenous information and views (Anspach, 2017; Bakshy, Messing & Adamic, 2015; Barnidge, 2017; Gentzkow & Shapiro, 2011). Given that social media are seen as a venue for public expression and mobilization (e.g., Anderson, 2016; Smith, 2013), understanding how political information exposure turns to political expression is critical. Thus, it is of particular interest to explore the extent to which attitudinally congruent and incongruent political information exposure influences SMPE.

In sum, guided by digital divide and selective exposure research, this study examines how social media skills divide is related to SMPE and how such relationship can be explained through pro-attitudinal and cross-cutting exposures.

## Literature Review

### Digital Divide

Digital divide refers to a gap in physical access, motivation, skills, and usage of the Internet (e.g., van Deursen & van Dijk, 2011; van Dijk, 2006). Digital divide research bases its root on knowledge gap hypothesis (Tichenor, Donohue, & Olien, 1970). The hypothesis posits that diffusion of mass media influences the speed and amount people acquire knowledge. The educated segment of population tends to gain more information and knowledge at a faster rate than low educated people. Digital divide research, thus, has concerned socio-economic status and its effect on the access, skills, and usage of the Internet.

The emergence of the Internet has brought about a concern over who adopts the technology for decades. Rogers (1995) argued that the affluent population tended to adopt new technology at a faster rate compared to a lower income population. Initially academics and policy makers investigated the divide between those connected to the Internet and those who were not, which is known as the first level divide. Since then, digital divide research has examined disparities in the access to the Internet (National Telecommunications and Information Administration, 1995). Prior digital divide studies have shown that the higher the socio-economic status of individuals is, the more affordable it is for them to access the Internet (e.g., Hoffman & Novack, 1998; Rogers, 1995). Overall, early digital divide studies suggested that inequalities in socioeconomic status (e.g., race, gender, age, income, and education) resulted in disparities in Internet access (e.g., DiMaggio, Hargittai, Celeste & Shafer, 2004).

Along with increased accessibility of Internet, digital divide studies have shifted its focus to Internet skills and usage, which is so-called the second level and third level divide, respectively (e.g., Hargittai & Hinnant, 2008; van Deursen & van Dijk, 2014; van Dijk & van

Deursen, 2014). Internet skills are conceptualized as “the ability to use the Internet effectively and efficiently” (Hargittai & Shaw, 2015, p.427). Previous studies investigated Internet skills in relation to demographics. For instance, van Deursen and van Dijk (2011) examined the extent to which socio-demographic variables were associated with individuals’ Internet skills. Their findings suggested that higher levels of education and younger age were positively associated with more Internet skills. Furthermore, other findings suggested that those who had more Internet skills used the Internet efficiently and effectively to achieve their goals while individuals who had fewer skills seemed not to exploit the benefits of the Internet or participate in creating online contents like Wikipedia (Hargittai & Litt, 2013; Hargittai & Shaw, 2015).

Internet skills are strongly associated with a broader range of online activities. Previous studies, for instance, have suggested that more Internet skills were associated with SNSs use (van Ingen & Matzat, 2018), online content creation (Correa, 2010), and capital-enhancing use (Hargittai & Hinnant, 2008). Moreover, digital skills predicted capital-enhancing Internet use, which means that users with more skills are more likely to visit websites that include presidential election information, international and national news, and financial, and government information (Hargittai & Hinnant, 2008). A study also showed that more Internet skills allowed users to access online health information (van Deursen, 2012). The study conducted a performance test to examine Internet skills barriers that users experienced when they gained access to health information online. As a result, the study demonstrated that older age group experienced medium related barriers, and higher educated participants had more Internet skills (van Dersen, 2012).

The digital divide has serious implications in politics, one of them being what researchers have called a “democratic divide”. The notion of democratic divide is understood as “the differences between those who do and do not, use the panoply of digital resources to engage,

mobilize, and participate in public life” (Norris, 2001, p.4). The more socially advantaged are likely to have better quality of access, allowing them to make the most of the technology. On the other hand, the socially less advantaged may not have leeway to develop skills and access as high as the advantaged possess (e.g., Hargittai, 2010). This disparity the Internet brought into public creates or exacerbates participatory outcomes in politics (e.g., Schlozman, Verba, Brady, 2012).

The study of digital divide has serious implications in politics. While the first level divide is related with material access to the Internet, the second level digital divide is related with individual’s Internet skills (e.g., van Deursen & van Dijk, 2011, 2014). Prior studies examined the relationship between the level of Internet skills and political Internet use. For example, Min (2010) found a significant and positive relationship between Internet skills and political information seeking. This finding was confirmed by Hargittai and Shaw (2013) examining the Internet skills and online political information practices and online petition. They found that Internet skills were positively associated with online political participation. Furthermore, Elliott and Earl (2018) examined the influence of the first and second digital divide levels on online petition. Their findings suggested that Internet skills and usage predicted who signed an online petition. Recent studies have examined the influence of Internet skills on online political activities. For example, Beam, Hmielowski, and Hutchens (2018) examined the degree to which Internet skills predicted online news reading and sharing. Their findings suggested that Internet skills were positively associated with online news reading and sharing.

As these prior studies have shown, people who have fewer Internet skills would find more barriers to engage in different forms of participation in politics while people with more Internet skills effectively engage in politics. Consequently, the advantaged segment of the

population may have a louder voice, for example, in online context by expressing and disseminating political information and political views.

### **Social Media Skills**

Just as socio-demographic factors influence the Internet access, skills and usage, social media use is also shaped by such factors. For example, previous social media divide research has shown that certain segments of population such as female, younger, well-educated, urban residents, and higher income household were more likely to adopt social media (Feng, Zhang & Lin, 2019) and the usage of social media was also significantly different between individuals in higher social status and those who in not such status (Pearce & Rice, 2017). However, to my best knowledge, there has not been social media skills divide research. As skills divide is one of the important conceptualizations in digital divide research (van Deursen & van Dijk, 2011), I advance the understanding of skills divide on social media. This study proposes a concept of social media skills.

Social media skills are understood as the perceived ability to use social media effectively and efficiently for political expression. I adapt the definition from Internet skills study by Hargittai and Shaw (2015) given that digital divide research concerns the extent to which skills are distributed in population and are affected by socio-economic status. I argue that social media skills have its theoretical root in digital divide research. Hypothetically, social media skills are distributed unevenly in population, and it predicts varying patterns of use. For example, highly skillful social media users may exhibit efficient searching knowledge and retrieve the information of their interest with a short amount of time. This capital-enhancing use of social media will be predicted by their socio-economic status and digital skills.

Yet, social media skills are distinct from Internet skills in regard to contexts and functions. Social media is web 2.0 in which users connect, involve, and mobilize their social networks while web 1.0 is seen as traditional media websites such as online news sites or political party websites (Dimitrova, Shehata, Strömbäck & Nord, 2014). Social media functions characterized as selective self-presentation, synchronous and asynchronous interaction, and values driven from user-generated contents should be considered as masspersonal media (Carr & Hayes, 2015; O'Sullivan & Carr, 2018). The argument is empirically supported. The different digital media impacted political participation and knowledge differently. Social media had a stronger positive effect on political participation than online news sites (Dimitrova et al., 2014). Similarly, social media news consumption had negative influence on political trust while news consumption from traditional media affected political trust positively (Ceron, 2015). These studies collectively indicate that characteristics and functions of social media are different from traditional digital media. Thus, skills required on the Internet and social media should be measured distinctively.

Social media skills are measured by five dimensions of skills: operational, information navigation, social, creative and mobile skills. These dimensions of skills are adopted from Internet skills scale (van Deursen, Helsper, & Eynon, 2016). Although the scale does not measure individuals' social media skills, I argue that the Internet skills scale provides an insight into how social media skills should be measured. For example, these five dimensions measure medium related and content related skills. These two aspects of skills measure can avoid technological deterministic views about skills. For example, regarding to medium related skills, operational skills can gauge individual's skills to operate social media. With regard to content related skills, social skills can gauge individuals effective and efficient communication with

others on social media. In sum, I argue that the measurement of effectiveness and efficiency of communication on social media, skills regarding to ones' medium and content related skills on social media should be taken into account. The following paragraphs provide possible examples about social media skills.

Regarding informational and social skills, a focus group revealed that people lacking Internet skills stated their confusion about Twitter (Hargittai, Neuman & Curry, 2010). They did not know what to do after creating an account on Twitter. On the other hand, some people were enjoying keeping up with news on social media while others disclosed their annoyance about their friends' post about their minute-to-minute updates on social media. The interview collectively suggests the presence of digital divide on social media regarding information navigation and processing.

When it comes to mobile skills, studies on social media use through mobile devices can help. In 2015, 91% of people aged 18-29, 77% of 30-49-year-old people, and 55% of more than 50 years old had access to SNS via mobile phone (Smith & Page, 2015). As it is shown, the majority of access to social media comes from mobile devices. Yet, some people still connect to social media through PC or other devices. The different type of access to social media suggests varying user experiences. For example, mobile Facebook use predicted more habitual and immersive perception than PC users (Kuru, Bayer, Pasek & Campbell, 2017). When considering varying users' experiences and features of mobile and PC social media experiences, PC social media users may have a certain struggle about operating social media on mobile devices due to different affordances the mobile version provides (Schrock, 2015).

In sum, I argue that researchers should consider the distinctive context of social media because efficient and effective social media use requires somewhat new operational, informational, social, creative, and mobile skills described above.

### **Social Media Skills & Social Media Political Expression**

This study examines social media political expression defined as “communications that express a specific opinion on current events or political processes or that disseminate information relevant to the interpretation of those events or processes” on social media (Velasquez & Rojas, 2017, p.3). Studying SMPE is important because it may be related to democratic divide because online participation requires citizens to use digital media resources and the uneven distribution of resources has a relationship with online political activities (Feezell, Coneroy, & Guerreoro, 2016).

Studying social media political expression is the main focus in this study. Social media political expression is conceptually a distinct form of online political participation. A previous study examined the conceptualization and measurement of online political participation and found that expressive practices were an independent construct from other types of online participation (Gibson & Cantijoch, 2013). Online participation such as signing an online petition or sending an email can be seen as the extension of offline political participation while expression may require different sets of cognitive, affective, or behavioral capacity.

There is a study showing a relationship between digital skills and political expression. A previous study examining the relationship between Internet skills and online political information practices such as reading, posting, and commenting political content online found that Internet skills had a positive and significant relationship (Hargittai & Shaw, 2013). Also, Best and Krueger (2005) found that Internet skills were significantly related to online political



practices. These studies imply that sophisticated Web 1.0 users engaged in a broader set of online activities, such as political expression.

Given that individuals with more digital skills engaged more frequently in online expressive behaviors, the skills divide theory can be applicable to the social media context. I argue that for individuals to enact SMPE, one has to have resources to participate in politics (Brady, Verba, & Schlozman, 1995). Social media skills can be one of the resources that make online political participation easier. Considering the resource model of political participation (Brady, et al., 1995) and prior empirical evidence suggesting the positive relationship between Internet skills and political expression (Hargittai & Shaw, 2013), I hypothesize the following:

**H1:** Social media skills are positively related to social media political expression (SMPE).

### **Social Media Skills, Pro-Attitudinal & Cross-Cutting Exposure**

A major concern lying between social media and politics is selectivity in information exposure. To date, political communication scholars examined attitudinally congruent and incongruent information exposure. Pro-attitudinal exposure is a type of selective exposure and is defined as a “tendency to seek information consistent with one’s prior beliefs” (Garrett & Stroud, 2014, p.681). Selective exposure may occur due to some theoretical reasons. First, cognitive dissonance avoidance theory posits that people try to reduce dissonant state when they experience undesirable cognitive state (Festinger, 1957, 1964). Next, emotions or moods also influence information selection. Affective intelligence theory posits that exposure to dissent views evokes anxiety (Marcus, Neuman, & MacKuen, 2000). Anxious individuals seek like-minded information to hold a balance between congenial and dissenting views (Valentino, Banks, Hutchings, & Davis, 2009). Another reason is cognitive burden. People are more likely to

choose information easy to understand than difficult one to reduce cognitive burden (Ziemke, 1980). Lastly, the belief that like-minded information is better in quality leads to selective exposure (Fischer, Schulz-Hardt, & Frey, 2008). In political domain, previous studies on selective exposure have indicated individuals' tendency to prefer information that supports their current political views (Garrett & Stroud, 2014; Stroud, 2011).

Digital divide may create a gap in information selectivity. Unevenly distributed digital skills in society may result in normatively undesirable political information exposure. As selective exposure theory posits, information exposure is handled efficiently and effectively based on cognitive and affective state. Skillful individuals can be better at handling such cognitively and affectively complicated information. In fact, higher educated population demonstrated higher informational skills (van Deursen & van Dijk, 2011). They performed better at website searching, source evaluation, and information selection.

The exposure to pro-attitudinal political information is possibly influenced by social media skills. Although there is no study that has previously examined the relationship between social media skills and selective exposure per se, digital skills research can help theorize an association between skills and selective exposure. Research has shown that when customizability technology was present, participants consumed more pro-attitudinal news. The customizability is defined as "information systems to very efficiently and effectively tailor users' information environment by enabling systematic and automatic exclusion of disliked sources, topics and opinions, and inclusion of preferred sources, topics, and opinions" (Dylko, Dolgov, Hoffman, Eckhart, Molina, & Aaziz, 2017, p.182), It is plausible that digital skills played an antecedent role for customizability technology use. The skillful participants may perceive the customization and utilize it (e.g., Dylko, 2016).

The effective and efficient use of social media is associated with pro-attitudinal exposure. Skillful social media users should know specific features that allows certain information exposure. An example that illustrates the claim is Twitter hashtag. Knowing how to find an interesting topic and participate in a conversation requires social media skills. As evidence showed, hashtags use for political discussion increased pro-attitudinal political discussion (Himmelboim et al., 2013). It can be assumed that social media skills allowed social media users to choose more pro-attitudinal conversation in Twitter. Thus, it is hypothesized:

**H2:** Social media skills are positively related to pro-attitudinal exposure.

Regarding the effect of social media skills on cross-cutting exposure, selective avoidance studies can illuminate social media behaviors. Cross-cutting exposure is defined as an idea that citizens should be “exposed to political perspectives that they do not find agreeable” (Goldman & Mutz, 2011, p.42). Garrett (2009) found that politically motivated selective pro-attitudinal exposure was distinct from the avoidance of attitudinally challenging information. Although people have a tendency to seek pro-attitudinal information, they do not filter out cross-cutting information. Given that selective avoidance is a distinct concept, recent studies have examined politically motivated unfriending and political disconnection (John & Dvir-Gvirsman, 2015, Zhu, Skoric & Shen, 2017; Yang, Barnidge, and Rojas, 2017). Studies have suggested that social media users took disconnecting actions when facing politically dissenting views (John & Dvir-Gvirsman, 2015, Zhu, Skoric & Shen, 2017).

Digital skills possibly influence cross-cutting information exposure positively and negatively. On the one hand, skillful social media users expose themselves to both types of information to make a rationale decision (Garrett, Carnahan, & Lynch, 2013). On the other hand, it is possible that consistent exposure to cross-cutting information on social media evokes

dissonance and make social media users want to filter out the cross-cutting information (John & Dvir-Gvirsman, 2015, Zhu, Skoric & Shen, 2017). The latter scenario requires the users to possess enough social media skills to take actions in order to avoid information and expressions from other users that disagree with. Therefore, I pose a research question:

**RQ1:** Do social media skills have any relationship with cross-cutting exposure?

### **Pro-Attitudinal & Cross-Cutting Exposure as Mediators**

Social media skills may facilitate social media political expression through cross-cutting exposure, but the direction is not clear. On the one hand, as Spiral of Silence Theory (Noelle-Neumann, 1991) posits, the exposure to dissenting political views may be recognized as hostile to individuals' views (Hampton et al., 2014) and discourage those who are less confident in their opinion from expressing their opinions. For instance, Kim (2016) found that hostile opinion climate on Facebook resulted in lesser political expression on Facebook. On the other hand, exposure to dissenting views galvanizes political expression on social media. A recent study found that online conversation with disagreement had a positive relationship with information sharing on social media. (Lane, Kim, Lee, Weeks & Kwak, 2017). In sum the exposure to cross-cutting views may play a mediating role in opinion expression on social media. But the direction is uncertain. Thus, following research question is developed.

**RQ2:** Does cross-cutting exposure positively or negatively mediate the relationship between social media skills and social media political expression (SMPE)?

The exposure to pro-attitudinal information on social media will motivate its users to participate and share political information online (Feezell, 2016; Hasell & Weeks, 2016). Feezell (2016) examined whether exposure to attitude-consistent and inconsistent information predicted online political participation. The study found that exposure to attitude-consistent information

online predicted higher online political participation. Moreover, Weeks, Lane, Kim, Lee, and Kwak (2017) also found a positive relationship between pro-attitudinal exposure and political information sharing on social media. As H1 predicts, social media skills should have a positive relationship with pro-attitudinal information exposure. Drawn from these prior studies, this study further expects that pro-attitudinal exposure through social media skills will have a positive association with SMPE. Therefore, I argue that:

**H3:** Pro-attitudinal exposure positively mediates the relationship between social media skills and social media political expression (SMPE).

Figure 1: Theoretical model

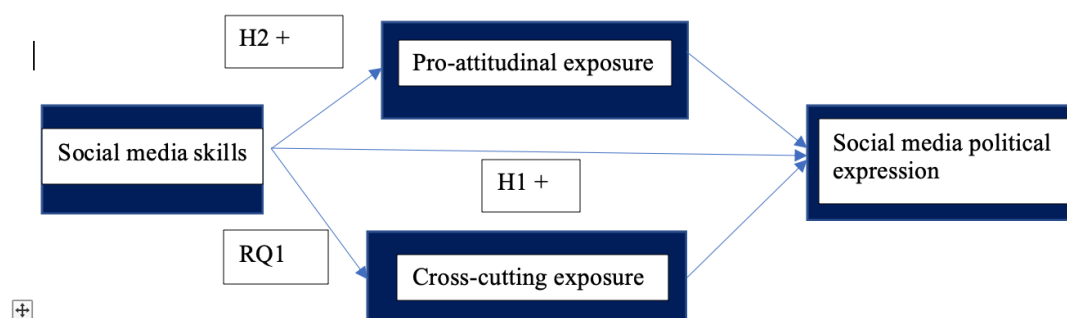


Table 1

*Theoretical indirect model*

<u>Indirect model</u>	<u>Hypothesis</u>
Social media skills > Cross-cutting exposure > Social media political expression	RQ2
Social media skills > Pro-attitudinal exposure > Social media political expression	H3

## Methods

### Participants

Participants were recruited from Amazon Mechanical Turk (MTurk) between June 4th, 2019 and June 10th, 2019. The respondents voluntarily answered a questionnaire on Qualtrics. Only those participants reported living in the U.S., aged of 18 or more, and having a social media account (e.g., Facebook, Twitter) were included in this study. Each respondent was compensated with \$1 for answering the survey.

A total of 422 individuals responded to the survey. Respondents consisted of 251 (59.5%), identified as males, 170 (40.3%), as female, and 1 person (0.2%) identified as other. Age ranged from 18 to 76 years old ( $M = 35.36$ ,  $SD = 11.02$ ). There were 300 (71.1%) self-identified as White, 40 Black or African American (9.5%), 4 American Indian or Alaska Native (0.9%), 38 Asian (9.0%), 36 Hispanic or Latino (8.5%), 1 Native Hawaiian or Pacific Islander (0.2%), and 3 from other races and ethnicities (0.7%). Education levels ranged from high school or less (12.3%) to PhD degree (1.9%). The median was four-year undergraduate degree (38.6%). Income varied from below \$20,000 (12.1%) to \$90,000 or more (12.3%). The median of income was \$40,000-\$49,999 (14.2%).

### Measures

A cognitive interview (CI) was conducted to examine clarity and validity of the survey items. In other words, the pilot interview was to make sure that respondents interpreted survey items of social media skills and pro-attitudinal and cross-cutting exposure questionnaires in a way the authors intended. CI helps to increase validity when constructing survey items by reducing misalignment between the author's intention and respondent's interpretation of survey items. In this study, we asked participants to describe their thinking concurrently while they answer survey

questions (see more detailed process of CI: Peterson, Peterson & Powell, 2017). A total of five respondents participated in the interview. They are undergraduate and graduate students from Japan, China and The U.S. Participants were collectively and separately asked to answer each item and recall their thoughts while answering the questions, and the author verbally asked possible sources of confusion of the survey items.

Consequently, some changes were made to cross-cutting, pro-attitudinal exposure and social media skills survey questions. For example, regarding exposure items, previous survey items used “political views”. CI revealed that participants interpreted political views very differently. Some interpreted it as political ideology and party identification while others as political issues. Thus, I changed political views to a politician(s) to avoid the confusion. Likewise, social media skills items also included confusing questions. One example was an item asking the perceived difficulty in different social media site layouts. Participants interpreted “social media site layouts” in a variety of ways. Consequently, I specify it as the Web or an app version. Next, an item stating, “I find the way social media pages are designed confusing” was changed to “I find the way social media pages (e.g., newsfeed page of Facebook) are designed confusing”. This change was made based on participants’ confusion on “social media pages”. They struggled to imagine a particular social media page. Thus, I added an example social media page such as Facebook newsfeeds.

Survey question wording for each independent and dependent variable can be found in the appendix. Also, Changes I made to social media skills, pro-attitudinal and cross-cutting exposure scale items can be found in the appendix C.

### **Independent Variable**

**Social media skills** ( $M = 4.38$ ,  $SD = 0.59$ ,  $\alpha = .93$ ) was measured using 21 items. Respondents were asked to indicate how much they agree with statements on a 5-point scale ranging from 1 (= strongly disagree) to 5 (= strongly agree). These 21 items were designed to measure five dimensions: four items measured the operational dimension (e.g., I know how to save/bookmark a post on social media), four for information navigation (e.g., I find it hard to find an information I visited before on social media), five items measured the social dimension (I know how to change who I share content with on social media), four items for the creative dimension (e.g., I know how to upload my own photos on social media), and four regarded the mobile skills dimension (e.g., I can quickly figure out how to use new features of social media apps on a mobile phone).

### **Dependent Variables**

**Cross-cutting exposure** ( $M = 3.13$ ,  $SD = 0.90$ ,  $\alpha = .88$ ) was measured with 5 items adapted from Weeks et al. (2017) to measure the frequency of exposure to the information on a 5-point scale (1= never, 5= frequently). Respondents reported how often they encountered opposing information to their political party, issues, and politicians (e.g., In the past month, how often did you encounter information on social media that was critical of public issues they support, disagreed with a politician(s) they support, was favorable toward public issues they oppose, was critical of political party they support, and was favorable toward a political party they oppose?).

**Pro-attitudinal exposure** ( $M = 3.31$ ,  $SD = 0.85$ ,  $\alpha = .88$ ) was measured using 5 items adapted from Weeks et al. (2017). Respondents were asked to indicate the frequency of exposure to the information that supports their political issues, views, and politicians in the past month (e.g., How often did you encounter information that was positive toward public issues they support,



was critical of public issues they oppose, supported a politician(s) they endorse, was critical of political party you oppose, and was positive toward a political party they support?) on a 5-point scale measurement (1 = never, 5 = frequently).

***Social media political expression*** ( $M = 2.70$ ,  $SD = 0.93$ ,  $\alpha = .88$ ) was measured using 9 items adapted from Quenette and Velasquez (2018) to assess participant's expressive and informational behavior and a behavior of a different political nature on social media.

Respondents were asked to report how often respondents engaged in such actions (e.g., express your views on current issues, share news stories with your contacts, and express your views on political issues) on a 5-point scale ranging from 1 = never to 5 = frequently.

### **Control Variables**

I controlled for variables which might affect independent, mediating, and dependent variables.

The variables were controlled for based on theories and prior empirical findings. In addition to demographic variables, the current study controlled political variables. Given that those who are interested in politics and consume news media tend to enact SMPE (Gil de Zúñiga, Molyneux & Zheng, 2014; Velasquez & Rojas, 2017), I controlled for political interest and news media use.

Next, political efficacy was controlled for, giving that political expression will be more likely to be enacted when individuals have a feeling that they can make a difference (Velasquez & Rojas, 2017). Finally, prior research suggests that political ideological strength predicts ideologically consistent sites (Garrett, Carnahan & Lynch, 2013). Thus, I controlled for strength of political ideology.

***Demographic variables:*** Respondents' age, sex, education, income and race were controlled for in the analysis.

**Strength of political ideology** ( $M = 3.66$ ,  $SD = 1.77$ ) was determined using one item that asked respondents' political ideology. Respondents reported their political ideology on a scale ranging from -5 (= liberal) to 5 (= conservative). Then, the values were designed so that participants who identified as more liberal or more conservative had a higher value, while those who identified themselves as neutral had a lower value.

**Political interest** ( $M = 7.07$ ,  $SD = 2.46$ ) was measured with a single item. Respondents were asked to indicate the degree to which they are interested in government and politics on a 10-point scale (1= not interested at all, 10 = very interested).

**News media use** ( $M = 3.05$ ,  $SD = 0.78$ ) was measured with three items. These items measure frequency of print, radio, and TV media use. Respondents answered the items on a 5-point scale (1 = never, 5 = frequently).

**Political efficacy** ( $M = 3.16$ ,  $SD = 1.01$ ) was measured with 5 items adopted from Craig, Niemi and Silver (1990). Respondents were asked to indicate the degree to which they agreed with the following statements about internal political efficacy (e.g., I consider myself well-qualified to participate in politics, I feel I could do as good a job in public office as most other people, I think I am as well-informed about politics and government as most people) on a 5-point scale (1= strongly agree, 5 = strongly disagree).

### **Analytic Strategy**

To test all hypotheses, statistical analysis using PROCESS (Hayes, 2013 Model 4 with 5000 bootstrap samples) was conducted. This mediation analysis allows to estimate direct and indirect effect of social media skills on SMPE as well as subsequent effects of two parallel mediators on SMPE. The parallel mediation has an advantage for this study because it can compete the size of indirect effect of two exposure variables. Previous research on the effect of exposures on SMPE

has suggested that both cross-cutting and pro-attitudinal exposure influenced political expression on social media (Hasell & Weeks, 2017; Lane et al., 2018). The parallel mediation allows to find the stronger effect of two exposure variables on SMPE. Hayes' (2013) PROCESS for SPSS Model 4 allows to test the direct effect of X on Y and the indirect effect of X on Y through M. Social media skills were entered as X, the independent variable, and social media political expression was entered as Y, the dependent variable. Finally, pro-attitudinal exposure and cross-cutting exposure were entered as the parallel mediators (M). Participants' age, education, race, sex, income, political ideology strength, political interest, political efficacy, and news media use were entered as covariates.

## Results

H1 predicted that social media skills were positively related to SMPE. Contrary to the expectation, analyses indicated a negative and significant relationship ( $B = -.227, p < .001$ , two-tails, see Figure 1) after controlling for age, sex, race/ethnicity, income, political interest, and political ideology, news media use, and political efficacy. Hence, H1 was not supported, but an opposite direction of the relationship was found. The result suggests that skillful social media users are less likely to express and share political information on social media.

Regarding H2 and RQ1, the expectation was that social media skills were positively related to pro-attitudinal information exposure, and I asked whether social media skills have any relationship with cross-cutting exposure. Results suggested that H2 was supported. Skillful social media users are more likely to expose to political information that supports their existing attitude ( $B = .141, p < .05$ , two-tails, see Table 2 column 1). RQ1 asked whether social media skills had any relationship with cross-cutting information exposure. The finding suggested that social media skills were not associated with the exposure to dissenting political information on social

media ( $B = -.266, p = .356$ , see Table 2 column 2) after accounting for respondents' demographics and political variables. The result, overall, suggests that skillful social media users encounter more pro-attitudinal information on social media while skills were not significantly related to the frequency of cross-cutting exposure.

Lastly, RQ2 and H3 addressed the indirect relationship of social media skills on SMPE, through pro-attitudinal and cross-cutting exposure. The results indicated that an indirect effect between social media skills and SMPE was positive and significant through pro-attitudinal exposure ( $B = .270, CI [.164, .376], SE = .054, p < .001$ , see Table 3), taking into account the effect of covariates. RQ2 inquired about the indirect effect of cross-cutting exposure. The result showed that cross-cutting exposure did not mediate the relationship between social media skills and SMPE ( $B = .029, CI [-.065, .123], SE = .048, p = .548$ , see Table 3).

In sum, social media skills increased pro-attitudinal exposure, which accelerated the frequency of political expression on social media while this relationship was not confirmed for cross-cutting exposure.

Table 2

*Mediation of social media skills, pro-attitudinal exposure and cross-cutting exposure on social media political expression*

	Pro-attitudinal exposure			Cross-cutting exposure			Social media political expression		
	B	SE	p	B	SE	p	B	SE	p
Constant	1.265	.369	.001	1.977	.417	.001	1.827	.393.	.001
Pro-attitudinal Exposure	-	-	-	-	-	-	.270	.054	.001***
Cross-cutting exposure	-	-	-	-	-	-	.029	.048	.548
Social media skills	.141	.065	.032*	-.266	.074	.356	-.267	.068	.001***
Race/Ethnicity	-.011	.024	.658	-.034	.027	.203	.027	.025	.276
Age	-.004	.004	.291	-.005	.004	.910	-.011	.004	.005***
Sex	.229	.080	.004***	-.020	.090	.826	.059	.084	.478
Education	-.023	.030	.435	-.030	.034	.929	-.024	.031	.426
Income	.017	.015	.271	-.000	.017	.985	-.036	.016	.024*
Political ideology	.057	.023	.013**	-.006	.026	.810	-.011	.024	.645
Political interest	.096	.020	.001***	.053	.022	.018*	.014	.021	.492
News media use	.083	.056	.141	.172	.064	.007**	.301	.059	.001***
Political efficacy	.037	.046	.430	.016	.052	.756	.177	.048	.001***
	R <sup>2</sup> = .187			R <sup>2</sup> = .076			R <sup>2</sup> = .284		
	F(10,411) = 9.445, p < .001			F(10,411) = 3.360, p < .001			F(12,409) = 13.506, p < .001		

Note: \*p < .05; \*\* p < .01; \*\*\* p < .001 (two-tailed). N = 422. B = unstandardized coefficients, SE = standard errors, and p = p-values.

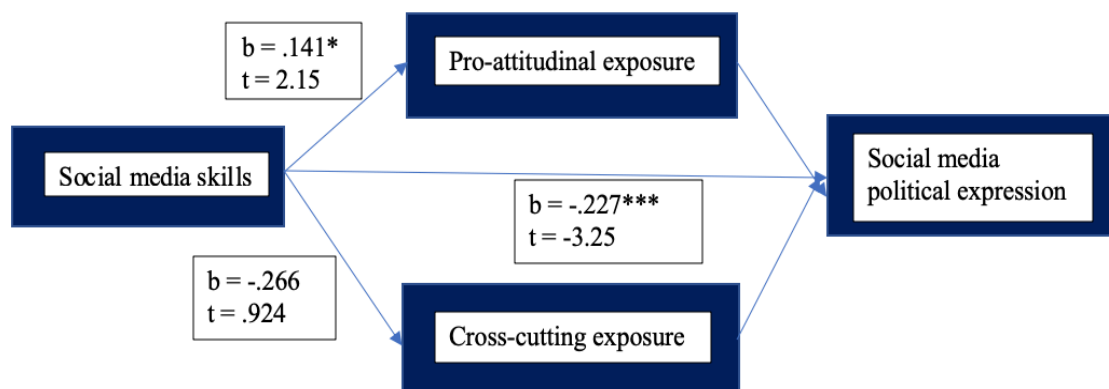
Table 3

*Unstandardized indirect and direct effects of social media skills on social media political expression*

<u>Indirect path effect</u>	<u>Estimate</u>	<u>95% C.I.</u>
Social media skills -> Social media political expression	-.2667	[-.4002, -.1332]
Social media skills -> Cross-cutting exposure -> Social media political expression	.0021	[-.0094, .0163]
Social media skills -> Pro-attitudinal exposure-> Social media political expression	.0380	[.0023, .0845]
Total effects	-.2268	[-.3641, -.0895]

*Note.* Cell entries are indirect path estimates and 95% confidence intervals from Hayes' (2013) PROCESS macro for SPSS (Model 4, with 5,000 bootstrap samples).

Figure 2



Note: \* $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed).

## Discussion

Prior work on the digital divide and political engagement suggested that Internet skills played an important role in consumption of political information, political expression, and participation, which could generate a so-called democratic divide (e.g., Beam et al., 2018; Hargittai & Shaw, 2015; Min, 2010). In this study, I addressed the digital divide on social media in relation to political expression, through pro-attitudinal and cross-cutting exposure. Specifically, this study sought to examine the effect of second-level digital divide of social media on political expression. Findings from this research suggested that skillful social media users were less likely to express political matters on social media. However, social media skills increased political expressive behaviors through pro-attitudinal exposure.

I found that social media skills directly and negatively influenced SMPE. This result was inconsistent with previous research that found a positive relationship between Internet skills and online political behavior related variables (Hargittai and Shaw, 2013). The result may suggest two things. First, those who know how to get information of their interests and are aware of social consequences such as removing friends and make inappropriate comments on social media are hesitant to express political issues. The negative relationship between social media skills and SMPE suggests that social media users are afraid of misunderstanding by their social network, resulting in self-censorship their political expression (e.g., Thorson, 2013). Second, social media skills work differently from Internet skills. Skills required in the Web 2.0 may be strongly related to social aspect more than the Web 1.0. as social media are characterized as selective self-presentation (e.g., Carr & Hayes, 2015). Furthermore, political discussions on social media, which are characterized as disrespectful (Duggan & Smith, 2016), may have inhibited their expression about political issues for self-protective purposes. If they do not post, comment, or

share political information on social media, the risk of being involved in the political interactions can be eschewed.

Next, this study advances the understanding of selective exposure literature by adding a technological variable. This study showed that those who have more social media skills were exposed to more pro-attitudinal exposure while the skills had no association with cross-cutting exposure. The positive relationship between social media skills and pro-attitudinal exposure perhaps suggests that a user-driven customization leads to increase pro-attitudinal exposure. Skills allow individuals to choose information of their interests, which consequently creates personalization of contents on social media (Dylko et al., 2017). On the contrary, social media skills did not have any relationship with cross-cutting exposure. Perhaps skillful users do not necessarily enact selective avoidance without political turmoil. In fact, as evidence has shown, people do not selectively avoid disagreeable information (Garrett, Carnahan & Lynch, 2013) except for a time of serious political fight such as Israel-Caza conflict (John & Dvir-Gvirsman, 2015). The findings therefore do not support a discussion on whether social media construct echo-chamber as the results suggest that social media skills lead to pro-attitudinal exposure, but it does not necessary mean that skillful users avoid cross-cutting exposure (e.g., Garrett & Stroud, 2014). This result makes much more sense when considering a study suggesting that cross-cutting exposure led to selective pro-attitudinal exposure to bolster their own political views (Weeks, et al., 2017). When people need to selectively choose agreeable information, social media skills perhaps help them increase the exposure to pro-attitudinal information.

When it comes to indirect path through pro-attitudinal and cross-cutting exposure, pro-attitudinal exposure had a positive and significant relationship with SMPE while cross-cutting exposure did not have such relationship. The result of pro-attitudinal exposure is consistent with



previous research that found pro-attitudinal online news use and political information sharing on social media mediated by anger toward other party candidate (Hasell & Weeks, 2016). Pro-attitudinal exposure might have evoked anger toward cross-cutting political views and led to expressive behaviors.

What is surprising is the result for cross-cutting exposure. Previous research found either positive or negative relationship between exposure to cross-cutting political views and political expression on social media (e.g., Gearhart & Zhang, 2015; Hampton et al., 2014; Lane et al., 2017), but I found no such relationship. This finding is in line with a recent study suggesting no relationship between cross-cutting exposure and political participation online and offline (Matthes, Knoll, Valenzuela, Hopmann & Sikorski, 2019). Given that selective avoidance does not occur frequently, it may be that social media users are incidentally or selectively exposed to disagreeable political information. Weeks et al. (2017) found that incidental counter-attitudinal exposure had no direct effect on political information sharing, but the exposure led to selective pro-attitudinal exposure. Although I did not use the same exposure measures, the result of this study may support the finding by Weeks et al (2017) because perhaps exposure to cross-cutting information arouse dissonance or anxiety. Such a threatening arousal propelled individuals to seek more information rather than express themselves (e.g., Marcus, Neuman, & MacKuen, 2000). The characteristic of information may be self-affirmative to eradicate the dissonance created by the exposer to cross-cutting information (Knobloch-Westerwick & Meng, 2011).

This study has implications to deliberative democracy. Normatively, opinion exchanges including disagreement are valued to reach a rational decision making. The result of this study suggests that social media skills posed a challenge to the norm. Given that the second-level social media divide led to imbalanced political expression via pro-attitudinal exposure, it implies

that those who have a certain partisan identification bolster their identity through pro-attitudinal exposure while non-political people become hesitant to express politics. Previous evidence has shown that pro-attitudinal exposure increased issue understanding, attitude strength and emotions, which increased intended political participation (Wojcieszak, Bimber, Feldman & Stroud, 2016). Therefore, the result suggests democratic concern because technologically savvy users can get information that affirms their political attitudes through pro-attitudinal exposure. The technologically savvier individuals become, the louder they become on social media.

### **Limitations**

This study has some limitations. First, it is important to note that samples are not nationally representative. MTurk participants tends to be young and liberal (Berinsky, Huber, & Lenz, 2012). Also, it is considered that they are technically savvier than general population. A study suggests that Internet skills have a positive relationship with social media use (Correa, 2016). Thus, it is possible that respondents have higher social media skills than normal population does.

Second, self-reported data may under or overestimate actual pro-attitudinal, cross-cutting exposure and social media skills (see Litt, 2013; Prior, 2009). Skills scale this study used depend on respondents' perception in social media operation. This raised a reliability concern as self-reported and performance-based method reported different levels of skills (e.g., Hargittai & Shafer, 2006). Social media skills may have the same reliability issues.

Third, social media skills scale may have some validity issues. Participants in the cognitive interview were not chosen based on probability samples. Main participants in the interview were undergraduate and graduate students including American and international students. This poses a threat to generalizability of the scale. Future research should correct the issue.

Lastly, this study did not include general social media use as a covariate. Social media use is known to lead to news exposure where people expose to political information (Barnidge, 2015). Future research needs to distinguish the effect of skills from general social media use. Velasquez and Quenette (2018) found a positive and significant relationship between general social media use and SMPE, so we do not know how much of the unexplained variances in SMPE can be explained by social media skills and general social media use.

Despite these limitations, this study provided new insights into how technological disparities influenced political expression by testing political information exposure as a mediator. First, we showed that social media skills could hinder the frequency of political expression. However, social media skills allowed its users to reach attitudinally congruent political information, which made them express, post, and share political information to others on social media. This suggested that social media skills possibly increased selective exposure to pro-attitudinal information exposure rather than to cross-cutting information.

### **Conclusion**

Political expression is an important democratic practice in this modern society. Although previous research has examined factors influencing political expression on social media (e.g., Lane et al., 2017; Velasquez & Rojas, 2017), few studies have examined the extent to which technological disparities influenced political expression. Furthermore, little research examined the mechanism of political expression on social media except for Hasell and Weeks (2017). Guided by digital divide and selective exposure research, this study examined the direct effect of social media skills on SMPE and indirect effect via pro-attitudinal and cross-cutting exposure.

Findings of this study suggested that skillful social media users tended to enact less political expression social media. This relationship, however, became positive via pro-attitudinal

exposure. Skillful social media users increased exposure to pro-attitudinal exposure, which encourage them to post, share, and express information about politics while this phenomenon was not confirmed for cross-cutting exposure.

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## Appendix A: Correlation Table

*Correlations of all variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Social media skills	1	.054	.154**	-.131**	-.051	.098*	-.051	.012	.070	-.034	.002	.099*	.089
2. Cross-cutting exposure	.054	1	.393**	.193**	.041	-.002	.055	-.086	.023	.211**	.161**	.229**	.072
3. Pro-attitudinal exposure	.154**	.393**	1	.322*	.035	.136**	.053	-.065	.048	.204**	.209**	.367**	.226**
4. Social media political expression	-.131**	.193**	.322**	1	-.062	.002	.064	.009	-.066	.360**	.336**	.284**	.069
5. Age	-.051	.041	.035	-.062	1	.211*	-.006	-.126**	.033	.155*	.019	.136**	.049
6. Sex	.098*	-.002	.136**	.002	.211*	1	.018	-.033	-.047	.035	-.157**	.005	.070
7. Education	-.051	.055	.053	.064	-.006	.018	1	-.077	.185**	.186**	.232**	.169**	.088
8. Race/Ethnicity	.012	-.086	-.065	.009	-.126**	-.033	-.077	1	-.006	-.018	-.135	-.139**	-.041
9. Income	-.070	.023	.048	-.066	.033	-.047	.185**	-.006	1	.152**	.034	-.017	-.028
10. News media use	-.034	.211**	.204**	.360**	.155**	.035	.186**	-.018	.152**	1	.381**	.399**	.048
11. Political efficacy	.002	.161**	.209**	.336**	.019	-.157*	.232**	-.135**	.034	.381**	1	.518**	.153**
12. Political interest	.099*	.229**	.367**	.284**	.136**	.005	.169**	-.139**	-.017	.399**	.518**	1	.309**
13. Strength of political ideology	.089	.072	.226**	.069	.049	.070	.088	-.041	-.028	.048	.153**	.309**	1

Note. \*  $p < .05$  \*\*  $p < .01$ .  $N = 422$

## Appendix B: Survey Question Wording

### **Cross-cutting exposure**

In the past month, how often (1= never, 5= frequently) did you encounter information on social media that was:

- 1) Critical of public issues you support
- 2) Disagreed with a politician(s) you support
- 3) Favorable toward public issues you oppose
- 4) Critical of political party you support
- 5) Favorable toward a political party you oppose

### **Pro-attitudinal exposure**

In the past month, how often (1= never, 5= frequently) did you encounter information on social media that was:

- 1) Positive toward public issues you support
- 2) Critical of public issues you oppose
- 3) Supported a politician(s) you endorse
- 4) Critical of a political party you oppose
- 5) Positive toward a political party you support

### **Social media political expression (SMPE)**

In the past month, how often (1 = never, 5 = frequently) did you engage in the following actions on social media?

- 1) Express your views on current issues
- 2) Shares news stories with your contacts
- 3) Express your views on public issues
- 4) Post or shared photos, videos, memes, or gifs created by you that relate to current events or politics
- 5) Click, like, or share political information

## Social media skills

The following questions ask you about your general use of social media. Please indicate how much you agree with the following statements. (1 = strongly disagree, 5 = strongly agree)

- 1) I know how to save/bookmark a post on social media
- 2) I know how to save/download a photo I found on social media
- 3) I know how to post content on social media
- 4) I know how to adjust the privacy settings of my social media accounts
- 5) I find it hard to find an information I visited before on social media
- 6) Different social media site layouts (e.g., web/app version) make working with them difficult
- 7) I find the way social media pages (e.g., newsfeed page of Facebook/home of Twitter) are designed confusing
- 8) I find it hard to use the search tool on social media
- 9) I know which information I should and shouldn't share on social media
- 10) I know a situation when I should and shouldn't share information on social media
- 11) I am careful to make my comments and behavior appropriate to the situation on social media
- 12) I know how to change who I share content with (e.g., friends, friends of friends or public) on social media
- 13) I know how to remove friends from my contact lists on social media
- 14) I know how to upload my own photos on social media
- 15) I know how to share video content I have created on social media
- 16) I know how to edit the photos I post on social media
- 17) I know how to re-post other people's materials (music, video, photo, text) into new social media posts.
- 18) I know how to install social media apps on a mobile device
- 19) I am very familiar with the features of social media on a mobile phone
- 20) I can quickly figure out how to use new features of social media apps on a mobile phone
- 21) I can use social media apps for communication (e.g., interpersonal/group communication) on a mobile device.

## Appendix C: Cognitive Interview

In the past month, how often (1= never, 5= frequently) did you encounter information on social media that was:

Critical of public issues you support  
 Disagreed with your political views – a politician(s) you support.  
 Favorable toward public issues you oppose  
 Critical of political party you support  
 Favorable toward a political party you oppose

In the past month, how often (1= never, 5= frequently) did you encounter information on social media that was:

Positive toward public issues you support  
 Critical of public issues you oppose  
 Supported your political views – a politician(s) you endorse.  
 Critical of a political party you oppose  
 Positive toward a political party you support

The following questions ask you about your general use of social media. Please indicate how much you agree with the following statements.

I know how to save/bookmark a post on social media  
 I know how to save/download a photo I found on social media  
 I know how to post content on social media  
 I know how to adjust the privacy settings of my social media accounts  
 I find it hard to find an information I visited before on social media  
Different social media site layouts make working with them difficult – Different social media site layout (e.g., web/app version) make working with them difficult.  
 I find the way social media pages are designed confusing – I find the way social media pages (e.g., Newsfeed page of Facebook/Home of Twitter) are designed confusing.  
 Please check somewhat disagree.  
 I find it hard to use the search tool on social media  
 I know which information I should and shouldn't share on social media  
 I know when I should and shouldn't share information on social media- I know a situation(s) when I should and shouldn't share information on social media.  
 I am careful to make my comments and behavior appropriate to the situation on social media  
 I know how to change who I share content with (e.g., friends, friends of friends or public) on social media  
 I know how to remove friends from my contact lists on social media  
 I know how to upload my own photos on social media  
 I know how to share video content I have created on social media  
 I know how to make changes to the photos I post on social media – I know how to edit the photos I post on social media.

I know how to combine other people's materials (music, video, photo, text) into new social media posts. – I know how to re-post other people's materials (music, video, photo, text) into new social media posts.

I know how to install social media apps on a mobile device

I am very familiar with the features of social media on a mobile phone

I can quickly figure out how to use new features of social media apps on a mobile phone

I can use social media apps for communication on a mobile device. - I can use social media apps for communication (e.g., interpersonal/group communication) on a mobile device