Exploring influential social cognitive determinants of social media use

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A R T I C L E   I N F O

A B S T R A C T

This study explored relationships between social cognitive determinants and examined their associations with social media usage. Overall, the model exhibits a goodness-of-fit and secures generalizability. In examining the social cognitive determinants of social media usage, habit strength was found, with statistical significance, to be the sole and immediate antecedent of social media use. Discussion and implications are further offered.

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1. Introduction

The emergence of social media stems from the introduction of Web 2.0 (e.g., Adobe Flash, and RSS),[2] a tool that empowers users to develop, contribute to, collaborate on, customize and distribute web content (O'Reilly, 2005; Vickery & Wunsch-Vincent, 2007). Social media has become a common platform for sharing various types of user-generated content such as news, photos, and videos made public within a bounded system (Boyd & Ellison, 2007). Since the inception of social media, diverse applications have been developed, gaining popularity in users' daily lives. Social media networks such as Facebook, Flickr, Google+, Twitter, YouTube, Wikipedia and Second Life represent the user-generated world of Web 2.0.

As of January 17, 2014, the popular social networking application Facebook had globally registered more than 1.15 billion active users (Bennett, 2014). In the United States alone, 128 million users log onto the site daily, and Facebook traffic constitutes up to 41% of all social networking traffic. Moreover, 100 h of content were posted every minute to the popular video sharing platform YouTube, and the image hosting site Flickr has a total of 87 million registered members and more than 3.5 million new images uploaded daily (Jeffries, 2013).

With the rise of varied platforms of social media, the online environment has become fully interactive and collaborative, allowing individuals to actively engage in two-way communication, post reviews of services and products, upload self-created videos, and even engage in virtual lives. In fact, social media offer a common platform for sharing user-created content, fostering users' active participation through interactivity, and providing the public with much deserved control (Kaplan & Haenlein, 2009). Thus, these advanced features of social media are thought to inspire user motives distinct from those associated with established Internet usage. Scholars have thus raised their interests in examination of factors affecting people's social media use.

In earlier studies, for example, perceived encouragement and perceived orientation were found to be significant factors that affect use of social networking services (Kwon & Wen, 2010), while enjoyment was also deemed an influential antecedent of SNS use (Lin & Lu, 2011). For social network games, in particular, perceived playfulness and security of SNGs were found to be a distinct construct (Shin & Shin, 2011). According to those studies, variation in the influential factors on SNS use seems to be coming from theoretical approaches (i.e., technology acceptance model, motivation theory, etc.) employed in measurement. Due to the heuristic nature that earlier findings provide, it would be intriguing to apply social cognitive perspective (Bandura, 1986) in examination of factors affecting one's use of social media, since it has been a robust perspective in explaining individuals' media use behaviors (Larose & Eastin, 2004).

Social cognitive perspective posits that anticipated outcomes of potential actions significantly influence individuals' actual behavior, and expectations are built on direct, indirect, and collective

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   [2] Adobe Flash refers to a method adding animation, interactivity, and audio/video streams to web pages. RSS (Really Simple Syndication) indicates a kind of web feed formats used to publish frequently updated content (e.g., blog entries and news headlines) in a standardized format.

experiences of the behavior in question (Bandura, 2002a, 2002b). Along with identifying anticipated outcomes, this theory organizes habit strength, deficient self-regulation and self-efficacy as factors that affect the behavior. In earlier research, the perspective has been primarily employed in examining predictors of Internet use behavior (i.e., LaRose & Eastin, 2004). Thus, it merits examining its applicability to social media use behavior by comparison or contrast with previous findings.

Employing social cognitive perspective, this study therefore aims to explore antecedents of social media use behavior. The findings of this study are expected to highlight social cognitive theory as an alternative perspective in explaining one's social media use behavior. Moreover, the theory's generalizability is anticipated to be corroborated by evaluation of the proposed model alongside another form of media use behavior.

2. Theoretical backgrounds

2.1. Nature of human capabilities

Social cognitive theory addresses determinants of human thoughts, feelings, and behavior in identifying reciprocal causation among personal factors (e.g., cognitive, affective or biological), behavioral patterns, and environmental events (Bandura, 2002a, 2002b). Through the processes of interaction and influence among the three determinants, individuals tend to retain, change or solidify their thoughts, affections, and actions, which constitute the intrinsic nature of human beings, also referred to as "plasticity" (Bandura, 2002a, 2002b, p. 121). When separated from other living things, people therefore demonstrate a distinctive capacity composed of four human capabilities: symbolization, self-regulation, self-reflection, and vicarious capability.

Symbolization refers to an individual's capacity to symbolize through cognitive processes related to his/her experiences with the external environment. In this process, people tend to create symbols (e.g., meaning, form, continuity, etc.) pertaining to their experiences. This cognitive capability is positively associated with one's capacity to comprehend the world and regulate external events (Bandura, 2002a, 2002b).

Self-regulatory capability involves one's responsiveness to external sanctions and demands. When reacting to the world or environmental events, one's capacity to steer him/herself influences the process. Self-regulation is typically demonstrated in the form of either proactive or reactive control. Proactive control involves motivating and guiding ones' actions by establishing and carrying out higher goals, while reactive control refers to one's efforts to bridge the gap between perceived performance and a personal standard (Bandura, 1991a, 199b).

Self-reflective capability refers to one's retrospective assessment of him/herself, including thoughts and behaviors, through comparison with indicators of reality. By examining themselves, individuals are able to identify and verify thoughts shaped by the following four modes: enactive, vicarious, social and logical forms (Bandura, 2002a, 2002b). Thus, one's thoughts are verified through his/her direct or indirect experiences, social norms, and inferences based on available knowledge. Perceived self-efficacy is considered a central component of self-reflective thought, influencing varied aspects of cognitive process (e.g., optimistic or pessimistic), behavior selection, and outcome expectations (Bandura, 2002a, 2002b).

Vicarious capability is related to the premise that learning is possible through, not only direct, but also indirect experience provided by mass media. Indeed, mass media sources, such as television, newspapers, and Internet, provide consumers with considerable information regarding life values, moral standards, and behavioral patterns. Cognitive, affective, and behavioral learning can therefore be achieved vicariously through observation of others' behaviors and the consequences conveyed and portrayed by mass media. In fact, Bandura (2002a, 2002b) found that individuals' perceptions of social reality are largely influenced by their indirect experiences.

2.2. Social cognitive determinants of media use behavior

Perceived self-efficacy has been identified as one of the notable determinants of individual motivation, affect, and behavior (Bandura, 1989; Zimmerman, 2000). Self-efficacy refers to one's self-assessment of his/her capacity to design things to do and then carry out the activities to achieve one's goals (Bandura, 1997; Zimmerman, 2000). Bandura (1999) noted that one's perceived personal efficacy is likely to affect that individual's selection of activities associated with the goal of eventual success. As such, this notion can be applied to an individual's media activities. A study by LaRose, Mastro, and Eastin (2001), for example, indicated that Internet self-efficacy was a significant predictor of Internet use. Furthermore, Gunn (1998) maintained that people who display Internet addiction-like symptoms also tend to demonstrate low self-efficacy. Thus, this study intends to examine the predictability of perceived self-efficacy on social media use.

Deficient self-regulation refers to one's lack of self-regulatory capability. As Bandura (2001) argued, people possess the ability to control their choices, feelings, and behaviors through self-monitoring processes (Bandura, 1986). When self-regulation fails to effectively operate, problematic behaviors may arise, such as addictions. Problematic uses of communication technologies (e.g., Internet, mobile phones, game, etc.) stem largely from users' failure or lack of self-regulation, which this study identifies as deficient self-regulation. LaRose, Lin, and Eastin (2003) determined that deficient self-regulation was directly related to participants' Internet usage and was also associated with habit strength.

Habit strength is a representation of individuals' behavioral patterns (LaRose & Eastin, 2004) and is, therefore, believed to influence their current behavior. Furthermore, habit strength is identified as a significant predictor of self-efficacy and is determined by expected outcomes (LaRose & Eastin, 2004). Thus, habit strength is expected to be a key factor in testing the causality of social use.

Past experiences. By considering past experiences of a particular behavior, people can assess the potential consequences of that behavior, as well as the potential effects on themselves and their environments (Bandura, 2002a, 2002b). In addition, individuals are able to anticipate outcomes according to their behavior. As such, past experience of a particular behavior is considered an important predictor of one's engagement in that behavior (Triandis, 1980). In a study examining Internet usage behavior (LaRose & Eastin, 2004), however, past experience did not demonstrate a direct impact on Internet use; rather, users' past experiences indirectly influenced this behavior via self-efficacy. Thus, this study aims to reevaluate the explanatory power of past experience on social media use.

Expected outcomes have been identified as a significant predictor of one's behavior (Bandura, 1986). Indeed, users' outcome expectations act as cognitively influential motivators guiding the ways in which individuals take action, such as adopting innovative communication technologies. Individuals' expectancies depend largely on their direct or indirect experiences of the behavior being considered. Expected outcomes are constructed according to the six following types: novel sensory, social, status, monetary, enjoyable activity, and self-reactive incentives (Bandura, 1986, pp. 232–240). Similarly, individuals integrate media use, which is partially mediated by the anticipated outcomes they aim to

achieve. For instance, LaRose and Eastin (2004) found that expected outcomes were significant predictors of Internet use.

2.3. Social media attributes

The assumption that social media usage varies from Internet consumption is based on the features that constitute social media. Web 2.0 and user-generated content are two key characteristics of social media (Kaplan & Haenlein, 2009). Established in 1999, Web 2.0 evolved as a platform for users to continuously create and modify content and applications (e.g., blogs, Wikis, tagging and bookmarking, multimedia sharing, podcasting, RSS and syndication, etc.) (DiNucci, 1999). Harnessing the capabilities of social media, participatory users are thus able to interact and collaborate as creators or prosumers of content. These users are therefore distinct from those of Web 1.0 Internet, which limits consumers to the passive viewing of content generated by others (Hermes, 2009).

User-created content (UCC) is another key foundation of social media. UCC or UGC (User-generated content) refers to "content made publicly available over the Internet, which reflects a certain amount of creative effort, and which is created outside of professional routines and practices" (OECD, 2007, p. 4). The growth and proliferation of UCC have been facilitated by a variety of technological, social, economic, and legal aspects, including increased availability of mobile and broadband technologies, the rise of a younger generation armed with computer skills and a willingness to engage in online content, lower cost of tools for the creation of UCC, and users' ability to copyright their own content (OECD, 2007).

Combining Web 2.0 and user-generated content, social media has established its influence in our daily routines. These intrinsic features of social media provide a base to explore causation between social cognitive determinants and social media consumption behaviors.

2.4. Hypotheses reasoning

Perceived self-efficacy is considered a primary antecedent of media use behavior. In particular, Internet self-efficacy (LaRose & Eastin, 2004) or computer self-efficacy (Barbeite & Weiss, 2004) has been identified as a significant predictor of Internet use. Furthermore, Bandura (1999) identified perceived self-efficacy as an important determinant of an individual's activities selected for the goal of eventual success. Based on this theoretical assumption and evidence from existing studies, this study proposes the following hypothesis:

H1. Perceived self-efficacy is positively associated with social media usage.

Habit strength refers to a recurring pattern of behavior that facilitates an individual's incremental cognitive numbness to a particular behavior (LaRose & Eastin, 2004) and is deemed an influential antecedent of his/her current or prospective behavior. Thus, the following hypothesis is posed:

H2. Habit strength is positively associated with social media usage.

As discussed earlier, self-regulation capability directs an individual's pursuit, generating self-incentives for continued efforts to attain goals (Bandura, 2001). Thus, we can assume that individuals exhibiting deficient self-regulation will likely be unable to guide what they seek and thus fail to monitor the impact of behavior on themselves, others, and their environments (Bandura, 1991a, 1991b). In examining Internet usage behavior, the study suggested that deficient self-regulation directly influences Internet

usage (LaRose & Eastin, 2004). In the same vein, this factor is expected to influence social media use. Therefore, the following hypothesis is proposed:

H3. Deficient self-regulation is positively associated with social media usage.

Deficient self-regulation refers to "a state in which conscious self-control is diminished" (LaRose & Eastin, 2004, p. 363). People whose conscious self-control is compromised are more likely to use media in a habitual manner. LaRose and Eastin (2004) found that deficient self-regulation was positively related to Internet habit strength. Therefore, the following hypothesis is suggested:

H4. Deficient self-regulation is positively associated with social media habit strength.

Self-efficacy refers to an individual's personal assessment of his/her ability to organize and execute a course of action to achieve his/her goals. Thus, it is plausible to assume that people demonstrating low self-efficacy are less able to direct their own actions, which could potentially result in habitual social media usage. Thus, this study proposes the following hypothesis:

H5. Perceived self-efficacy is negatively associated with social media habit strength.

Based on past experiences of a particular behavior, individuals evaluate the potential impacts of the behavior in question on themselves and their environments. Thus, they can predict likely outcomes of their actions. Furthermore, past experiences of a particular behavior are expected to provide individuals with information, skills, and resources regarding their actions, which they can in turn use to inform prospective behaviors. Past experience is therefore expected to increase perceived self-efficacy. Consequently, the following hypothesis is posited:

H6. Social media experience is positively associated with perceived self-efficacy.

The extent of an individual's past experiences with social media is anticipated to relate to recurring behavior patterns and habits, since inattentiveness tends to increase as activities are continuously repeated (LaRose & Eastin, 2004). Thus, this study proposes the following hypothesis:

H7. Social media experience is positively associated with social media habit strength.

Expected outcomes are considered influential determinants of human behavior and act as motivators for individuals to partake in a particular action (Bandura, 2002a, 2002b). This logic is expected to translate to social media use behavior. Expected outcomes are organized according to the following six types: novel sensory, social, status, monetary, enjoyable activity, and self-reactive incentives. This study examines the relationships between each type of the expected outcomes and other determinants of social media usage. In addition, this research evaluates the associations between self-efficacy and expected outcomes, and between the expected outcomes and both habit strength and deficient self-regulations. As such, this study intends to answer the following research questions:

RQ1: What are the relationships between the types of expected outcomes and habit strength?
RQ2: What are the relationships between the types of expected outcomes and social media use behavior?
RQ3: What are the relationships between self-efficacy and the types of expected outcomes?
RQ4: What are the relationships between the types of expected outcomes and deficient self-regulations?

3. Methodology

3.1. Data collection

This study used online panel companies to recruit participants. A panel can provide a more representative sample of a country's population than is possible with a student sample. In addition, the use of an online panel is more timely and cost-effective (Duffy, Smith, Terhanian, & Bremer, 2005). Although the use of online panels may raise some concerns regarding the representativeness of a population (Babbie, 2009), this data collection method has gained popularity due to its capacity to generate a nationally representative sample of Internet users (Topp & Pawloski, 2002) without geographical boundaries.

The original sample included 697 participants. Through the process of data mining, 94 responses were removed due to incomplete answers or missing variables, resulting in a final study sample of 603 participant responses for analysis.

3.2. Measurement

A 7-point Likert scale ranging from "strongly disagree (1)" to "strongly agree (7)" was employed to measure all variables, with the exception of past social media experience and social media usage. The measures were adopted from Larose and Eastin (2004), with exception of deficient self-regulation, which was adopted from LaRose et al. (2003).

Perceived self-efficacy. This variable is defined as an individual's judgment of his or her ability to integrate and implement a course of action to achieve specified goals. It was treated as an independent variable for H1, H5, and RQ3, and as a dependent variable for H6. Nine statements were used to measure this variable including "I can always manage to solve difficult problems if I try hard enough" and "If someone opposes me, I can find the means and ways to get what I want."

Deficient self-regulation. This variable refers to a lack of, or failure of, self-regulation. Participants were asked to indicate the degree to which they possess the deliberative ability to make choices, feel, behave in an appropriate manner, motivate, and regulate their implement. This variable was treated as an independent variable for H4 and as a dependent variable for RQ4. Seven items were used to measure deficient self-regulation, including statements such as "I have a hard time keeping my social media use under control" and "I have to keep using the social media more and more to get my thrill."

Habit strength. This study defines habit strength as the degree to which one repeats a similar pattern of behavior with inattentiveness. This variable was treated as an independent variable for H2 and as a dependent variable for H4, H5, H7 and RQ1. This variable was measured by asking participants to respond to statements such as "The social media is part of my usual routine" and "I would miss the social media if I could no longer go online."

Activity outcomes. This variable was measured by asking participants to respond to four statements regarding the frequency of social media use to "cheer myself up," "play a game I like," "feel entertained," and "hear music I like."

Monetary outcomes. Participants responded to four questions that measured monetary outcomes, including the following: Using social media, how likely are you to "find bargains on products and services," and "save time shopping"?

Novel outcomes. To measure novel outcomes, the following four questions were asked: Using social media, how likely are you to "get immediate knowledge of big news events," "find a wealth of information," "find interactive news features," and "obtain information that I can't find elsewhere"?

Social outcomes. This variable was measured using seven items, including questions regarding the likelihood of participants' use of social media to "get support from others," "find something to talk about," "feel like I belong to a group," and "maintain a relationship I value."

Self-reactive outcomes. Five items were used to measure self-reactive outcomes, including the following: Using social media, how likely are you to "relieve boredom," and "find a way to pass the time"?

Status outcomes. The following two items were used to measure status outcome: Using social media, how likely are you to "improve future prospects in life" and "get up to date with new technology"?

The six outcome variables of social media usage detailed above were treated as independent variables for RQ1, RQ2, and RQ4 and as dependent variables for RQ3.

Past experience. Participants were asked if they had ever engaged in social media activity in the past, and this variable was treated as an independent variable for H6 and H7. For data analysis purposes, this variable was coded as a dummy variable, with "0" representing "no" and "1" as "yes."

Social media usage. Participants were asked to indicate their degree of average daily social media usage based on seven categories, with higher numbers indicating greater daily usage. This variable was treated as a dependent variable for H1, H2, H3, and RQ2.

Reliabilities. Cronbach's alphas for each of the measures were as follows: perceived self-efficacy (9 items) = .95, self-regulation (7 items) = .95, habit strength (3 items) = .95, activity outcomes (4 items) = .86, monetary outcomes (4 items) = .94, novel outcomes (4 items) = .94, social outcomes (7 items) = .96, self-reactive outcomes (5 items) = .94, and status outcomes (2 items) = .84. Overall, data displayed higher levels of reliability across all of the measures.

3.3. Statistical analysis

Exploratory factor analysis. Exploratory factor analysis (EFA) was performed for the purpose of item reduction. Any measurement item that would not be loaded on its intended factor or that displayed a factor loading value lower than .65 was removed.

Structural equation modeling (SEM). To test the proposed model, this study used a goodness-of-fit test from the SEM program AMOS 18, which computes multiple alternatives of goodness-of-fit coefficients. This study used the ratio of χ^2 to the degree of freedom and several fit indices including the comparative fit index (CFI), the goodness of fit index (GFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA). The values of CFI, GFI, and NFI range from 0 to 1.00, with higher values indicating better fit; values of .90 and above are generally considered to represent a good fit. RMSEA values of .08 or less usually indicate a good fit (Byrne, 2001; Kline, 2005).

4. Results

4.1. Descriptive statistics

The participants for this study were 51.8% male and 48.2% female, ranging in age from 19 to 85, with a mean age of 48 (SD = 15.53). The averages of the six expected outcome variables were in a similar range, with the novel variable demonstrating the highest average (*M* = 4.48, SD = 1.84) and the status variable demonstrating the lowest average (*M* = 4.02, SD = 1.81). Self-efficacy demonstrated the highest average of all the variables (*M* = 5.64, SD = 1.11), and deficient self-regulation displayed the lowest average (*M* = 2.48, SD = 1.65). The average for habit strength was 3.88 (SD = 2.11) (See Table 1 for details)

4.2. Statistical analysis

Exploratory factor analysis was performed for the variables with multiple measurement items for the purpose of item reduction. Any measurement item that would not be loaded on its intended factor or that displayed a factor loading value lower than .65 was removed. The outcome of EFA demonstrated that none of the items needed to be excluded. Thus, all the initial measures were used to perform further analyses. This study utilized composite scores derived from principal component analysis for each latent variable with multiple measurement items.

Correlation analysis revealed that social media usage demonstrated significant relationships with all the expected outcomes: activity ($r = .56$), monetary ($r = .42$), novel ($r = .47$), social ($r = .54$), self-reactive ($r = .52$), and status ($r = .48$) (RQ2), habit strength ($r = .63$) (H2), and deficient self-regulation ($r = .51$) (H3) as shown in Table 1. However, social media usage was not associated with self-efficacy (H1). Habit strength was significantly associated with deficient self-regulation ($r = .61$) (H4), but was not associated with self-efficacy (H5). Social media experience was significantly related to social media habit strength (H7) ($r = .53$), but demonstrated no relationship with self-efficacy (H6). All the social media expected outcomes – activity ($r = .70$), monetary ($r = .53$), novel ($r = .60$), social ($r = .72$), self-reactive ($r = .70$), and status ($r = .63$) – were significantly associated with habit strength (RQ1). Four of the expected outcomes demonstrated significant associations with self-efficacy (RQ3), including monetary ($r = .10$), novel ($r = .11$), social ($r = .11$), and status ($r = .10$). Deficient self-regulation (RQ4) was positively associated with all of the expected outcomes (activity ($r = .53$), monetary ($r = .44$), novel ($r = .43$), social ($r = .47$), self-reactive ($r = .51$), and status ($r = .54$)). The correlation analysis demonstrated that a majority of the proposed hypotheses were supported as predicted.

Structural equation modeling (SEM) was used to test the proposed model. This study used a goodness-of-fit test from the SEM program AMOS 18, which computes multiple alternatives of goodness-of-fit coefficients. This study used the ratio of χ^2 to the degree of freedom and several fit indices, including the comparative fit index (CFI), the goodness of fit index (GFI), the normed fit index (NFI), and the root mean square error of approximation (RMSEA). The values of CFI, GFI, and NFI range from 0 to 1.00, with higher values representing better fit; values of .90 and above are generally regarded as indicating a good fit. RMSEA values of .08 or less usually represent a good fit (Byrne, 2001; Kline, 2005).

As demonstrated in Table 3, social media usage was influenced by habit strength (H2) ($\beta = .50$, $p < .001$) and deficient self-regulations (H3) ($\beta = .27$, $p < .001$). These significant paths demonstrate that individuals exhibiting stronger habit strength and a higher level of deficient self-regulation tend to use social media more frequently. Therefore, H2 and H3 were supported. RQ2 asked which of the expected outcomes would significantly impact participants' social media usage. Among the six outcomes, only activity ($\beta = .28$, $p < .001$) demonstrated a significant impact on social media usage. Self-efficacy was not found to influence social media usage (Fig. 1).

The analysis revealed that habit strength was significantly affected by past social media experience (H7) ($\beta = .39$, $p < .000$) and deficient self-regulation (H4) ($\beta = .30$, $p < .000$). This finding indicates that individuals with more social media experience and greater deficiency of self-regulation tend to demonstrate stronger habit strength. However, self-efficacy was not found to affect habit strength. In response to RQ1, which aimed to determine which of the expected outcomes affect users' habit strength, both social ($\beta = .35$, $p < .000$) and activity ($\beta = .21$, $p < .000$) were determined to have a significant impact, while the other four expected outcomes were not significantly related to habit strength.

Social media experience did not influence self-efficacy (H6). However, RQ3 addressed whether or not self-efficacy affects the expected outcomes of social media usage, and self-efficacy was found to be a significant predictor of the four expected outcome variables – novel ($\beta = .11$, $p < .05$), social ($\beta = .13$, $p < .05$), monetary ($\beta = .10$, $p < .05$), and status ($\beta = .11$, $p < .05$).

RQ4 asked if participants' expected outcomes influence deficient self-regulation, and of the six outcomes, the following four were found to be significant predictors of deficient self-regulation: activity ($\beta = .29$, $p < .000$), novel ($\beta = -.25$, $p < .000$), self-reactive ($\beta = .19$, $p < .05$), and status ($\beta = .39$, $p < .000$). This finding suggests that individuals exhibiting higher levels of the three expected outcomes—activity, self-reactive, and status—combined with a lower level of novel expected outcome, tend to also demonstrate greater deficiency of self-regulation. As shown in Table 2, the fit of the path model was generally satisfactory for the initial model. However, as indicated in modification indices, the proposed model was revised. The revised model was significantly improved in terms of fit indices including χ^2/df, CFI, GFI, NFI, and RMSEA (χ^2/df = 4.33, CFI = .99, GFI = .97, NFI = .98, RMSEA = .07)

5. Discussion and conclusions

This study explored relationships between social cognitive determinants and examined their associations with social media usage. Overall, the model exhibits a goodness-of-fit and secures generalizability through its alignment with the results of existing studies (Bandura, 2002a, 2002b; Kwak & Bandura, 1997; LaRose & Eastin, 2004). The findings of this study, therefore, suggest that the social cognitive perspective merits further future scholarly endeavors in studies of new media use behaviors.

Table 1
Correlation matrix.

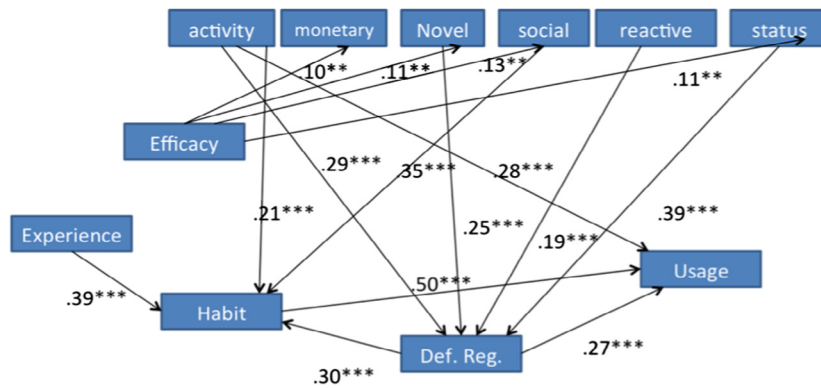|	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11
1. Activity	4.30 (1.70)	–										
2. Monetary	4.24 (1.93)	.73***	–									
3. Novel	4.48 (1.84)	.78***	.86***	–								
4. Social	4.47 (1.81)	.79***	.68***	.77***	–							
5. Self-reactive	4.44(1.80)	.81***	.69***	.77***	.88***	–						
6. Status	4.02 (1.81)	.75***	.77***	.80***	.80***	.79***	–					
7. Habit strength	3.88 (2.11)	.70***	.53**	.60***	.72***	.70***	.63***	–				
8. Def. self-reg	2.48 (1.65)	.53***	.44**	.43***	.47***	.51***	.54***	.61***	–			
9. Self-efficacy	5.64 (1.11)	.03	.10**	.11***	.12***	.05	.10***	.04	−.05	–		
10. Experience		.45***	.28***	.35***	.48***	.46***	.37***	.53***	.32***	.00	–	
11. Usage		.56***	.42***	.47***	.54***	.52***	.48***	.63***	.51***	.04	.55***	–

** $p < .01$.
*** $p < .001$.

Fig. 1. Tested Model. *Note:* **p < .01, ***p < .001.

Table 2
Goodness-of-fit indices.

Model fit	Criteria	Initial model	Revised model
Chi-square/(df)	⩽5	29.01	4.326
Comparative Fit Index (CFI)	⩾.90	.95	.99
Goodness of Fit Index (GFI)	⩾.90	.94	.97
Normed Fit Index (NFI)	⩾.90	.95	.98
Root mean Squared Error Residual (RMSEA)	⩽.08	.22	.07

Table 3
Path model of the relationship among the variables.

Path	Model	
	Standardized coefficient	Standardized error
Hypotheses		
HP1: Self-efficacy → Usage	.03	.04
HP2: Habit → Usage	.50***	.07
HP3: Def. self-reg. → Usage	.27***	.06
HP4: Def. self-reg. → Habit	.30***	.03
HP5: Self-efficacy → Habit	.02	.03
HP6: Experience → Self-efficacy	−.02	.03
HP7: Experience → Habit	.39***	.05
RQ 1		
Activity → Habit	.21***	.05
Novel → Habit	.06	.06
Social → Habit	.35***	.06
Monetary → Habit	−.08	.05
Self-reactive → Habit	.04	.06
Status → Habit	−.06	.05
RQ2		
Activity → Usage	.28***	.08
Novel → Usage	.14	.10
Social → Usage	.14	.10
Monetary → Usage	.11	.08
Self-reactive → Usage	−.10	.10
Status → Usage	−.07	.09
RQ3		
Self-efficacy → Activity	.03	.04
Self-efficacy → Novel	.11**	.04
Self-efficacy → Social	.13**	.04
Self-efficacy → Monetary	.10**	.04
Self-efficacy → Self-reactive	.05	.04
Self-efficacy → Status	.10**	.04
RQ4		
Activity → Def. self-reg.	.29***	.06
Novel → Def. self-reg.	−.25***	.08
Social → Def. self-reg.	−.12	.07
Monetary → Def. self-reg.	.10	.07
Self-reactive → Def. self-reg.	.19**	.08
Status → Def. self-reg.	.39***	.07

* p < .05.
** p < .01.
*** p < .001.

In examining the social cognitive determinants of social media usage, habit strength was found, with statistical significance, to be the sole and immediate antecedent of social media use. Although social media involves more interactive and collaborative features, this finding suggests that social media use is considered a habitual manner of behavior in which one's conscious attentive capacity is limited (Posner & Snyder, 1975). Verplanken and Aarts (1999) argue that a habit tends to entail an enduring cognitive orientation or "habitual mind-set" that makes an individual less attentive to new courses of action, thus contributing to sustained habitual behavior. Applying this logic to the results of this study, we can infer that deficient self-regulation, past experience, activity, and social outcomes seem to directly influence the habitual mind-set involved in social media use, and thus influence habitual social media use. The implication of these findings can be extended to the notion of automaticity, a feature of habit (Verplanken & Aarts, 1999).

Bargh and Chartrand (1999) argue that "most of our daily actions, motivations, judgments and emotions are not the products of conscious choice and guidance" (p. 465), but rather stem primarily from automatic perceptual activity. Additionally, they state that the "development of most acquired forms of automaticity (i.e., skill acquisition) depends on the frequent and consistent pairing of internal responses with external events" (p. 468). Thus, the current study's finding that habit strength is the best predictor of social media use indicates that social media usage is largely reliant on automaticity. Bargh and Chartrand (1999) further described automaticity as follows:

Initially, conscious choice and guidance are needed to perform the desired behavior or to generate what one hopes are accurate and useful expectations about what is going to happen next in the situation. But to the extent the same expectations are generated, or the same behavior is enacted, or the same goal and plan are chosen in that situation, conscious choice drops out as it is not needed. (p. 468)

In this respect, an individual's cognitive capacity is initially engaged in media use behavior through his/her efforts to make a choice, assess the expected outcomes, and trace the personal and social standards of his/her activity. Automaticity, however, is eventually animated in media usage (e.g., playing games, checking e-mails, visiting particular websites, turning on the television, listening to music) and becomes a predominant determinant of one's degree of media use. This reasoning seems evident, as this study

identified activity outcomes (e.g., playing a game, listening to music, feeling entertained) and social outcomes (e.g., maintaining a relationship) as significant predictors of habit strength.

Furthermore, the findings demonstrate that individuals' deficient self-regulation and past social media usage experiences largely determine habit strengths. This finding comports with LaRose & Eastin's (2004) study, which indicated that failure of self-monitoring, one of the sub-functions of self-regulation, could result in an increase in users' habit strength for Internet usage. As such, users' failure or lack of conscious control over social media use seems to magnify a habitual pattern of social media usage. In addition, the results indicating that the relationship of participants' accumulation of experiences using social media is linked to their habit strength of social media use are considered plausible. Overall, the path analysis demonstrates that deficient self-regulation, past experience, activity, and social outcomes directly influence habit strength and indirectly affect social media usage through habit strength.

Another conspicuous finding of this study indicates that general beliefs related to self-efficacy are directly associated with most of the expected outcomes of social media usage. As Bandura noted (1989), this finding indicates that individuals who assess themselves as being highly efficacious tend to look for positive outcomes from social media use, while those exhibiting low self-efficacy are likely to expect unfavorable outcomes. Moreover, within the perspective that anticipated outcomes act as influential incentives guiding the ways in which individuals take action, general self-efficacy is considered a significant antecedent of individuals' prospective behaviors. The results of this study, however, demonstrate a lack of causation between expected outcomes and social media usage, thus indicating that forethought is not significantly involved in social media use. Forethought is a feature of purposive human capabilities involving the tendency of individuals to anticipate the likely consequences of their prospective behaviors (Bandura, 2001). In steering their actions based largely on anticipated outcomes, people are therefore more likely to embrace courses of action that are expected to provide favorable outcomes, while typically avoiding activities they believe will yield negative outcomes. In short, user attentiveness to the potential positive outcomes of social media use appears to be waning, and instead, users are more likely to habitually engage social media without forethought, as discussed earlier.

Distinct from previous studies (LaRose & Eastin, 2004; LaRose et al., 2003) that employed an Internet self-efficacy scale, this study utilized a general self-efficacy measurement scale (Scholz, Dona, Sud, & Schwarzer, 2002). Interestingly, in the current study the relationship found between self-efficacy and expected outcomes was consistent with the results of existing studies. Thus, general self-efficacy beliefs tend to override a particular aspect of self-efficacy (e.g., Internet self-efficacy) and influence varied modes of the media consumption process. This finding implies that people who view themselves as optimistic and are self-confident in their capabilities at the macro level are likely to demonstrate a strong capacity to cope with any kind of micro condition or environment, even those with which they are unfamiliar. Therefore, it seems that cultivating a strong sense of self-efficacy should be a primary task in every aspect of life and practice, particularly in the initial address of new communication technologies.

Unlike anticipations in the proposed hypotheses, however, perceived self-efficacy failed to exhibit a significant relationship with some constructs, such as social media use, habit strength and past experience. Such results could be reasoned in concurrence with a finding of the study that habit strength is the strongest antecedent of social media use. Since perceived self-efficacy is deemed as one's belief in his/her own capacity to complete tasks and reach goals (Bandura, 1999), it is an engagement of a cognitive process or activity. In contrast, habit strength refers to a recurring pattern of behavior that is likely to interrupt the cognitive process by fostering one's incremental cognitive numbness to a certain behavior (LaRose & Eastin, 2004). Thus, the effect of perceived self-efficacy appears to be limited in social media use as it is a habitual activity. However, further research is encouraged to examine an association between self-efficacy and habit strength, since negative causation between the two constructs was not supported in this study.

Finally, the expected outcomes were found to be influential predictors of deficient self-regulation. With the exception of novel outcome, most of the anticipated outcomes demonstrated positive relationships with deficient self-regulation. For use of social media in general, people are therefore more likely to lose the conscious capacity to monitor their thoughts, feelings or behaviors as outcome expectancies increase. This finding suggests that expected outcomes beyond a certain level at which people can self-regulate their behaviors could serve as important predictors of problematic media usage (e.g., excessive uses of the Internet or mobile phone). However, in the case of the novel outcome (e.g., finding information, interactive features, and knowledge of news events), which demonstrated a negative relationship with deficient self-regulation, we can argue that searching for information is an activity that involves the proactive control of self-regulation (Bandura, 2002a, 2002b) in which individuals mobilize their personal resources, skills, and efforts to achieve their designated goals. As novel expectancy grows, proactive control is, therefore, expected to increase as well. As such, a negative association between novel outcome and deficient self-regulation can be corroborated.

Adding some knowledge to the existing literature and perspective, the findings of this study also provide a practical implication. Because people use social media in a habitual manner, they are likely to exhibit deficient self-regulation that will lead them to status of flow or addiction. In fact, individuals' incessant engagement with digital devices and activities in their daily lives has become a pandemic phenomenon that raises a variety of physical, psychological and social concerns, such as insomnia, high anxiety, and disconnection with physical surroundings (Jenaro, Flores, Gómez-Vela, González-Gil, & Caballo, 2007). To avoid the detrimental consequences it might cause, people should be encouraged to control their time on social media, and get involved in more cognitive activities on social media (i.e. posting views on a political or social issue on a blog, editing information in Wikipedia, etc.), rather than simply scanning, watching and reading content that others create.

As is true with much research, this study has several limitations that should be considered in helping to inform future research endeavors. Several of this study's findings might be considered original and compelling, but they should be interpreted with caution. First, this study utilized a measurement scale for the collective use of social media. Beyond the communal features of interactivity and collaboration, social media actually constitutes varied types and attributes. For instance, virtual social worlds (e.g., Second Life) fall into the category of social media that is high in social presence and self-presentation, while Wikipedia is classified as being low in both of these dimensions (Kaplan & Haenlin, 2009). Thus, each social media application may generate distinctive outcome expectancies and could demonstrate different reciprocal causation among social cognitive determinants in comparison with the current study. Secondly, the online panel samples utilized for this study may not be representative of the entire population. Therefore, varied data collection methods should be employed in order to enhance the proposed model's generalizability. Third, this study's examination is limited to a local context for determining the proposed model's goodness of fit. Future studies should examine social media usage in multiple countries in order to compare this study's results with those demonstrated in different cultural contexts. Such multi-country studies could contribute to the identification of a universal measurement scale.

Appendix A

See Tables 1–3.

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