



# Visiting theories that predict college students' self-disclosure on Facebook



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## ABSTRACT

This study explores factors that may explain information disclosure behavior on Facebook and provides understanding of each factor's contribution in explaining such behavior. Factors tested in this study are drawn from theories (e.g., social contract theory and uses and gratification theory) and constructs (e.g., trust/self-disclosure relationships, time spent on Facebook, number of Facebook friends, and gender difference). Findings suggest the potential of all the factors examined in this study as frameworks to explain self-disclosure behavior on Facebook. This social media-specific study offers evidence that these theories may have implications that are different from the current e-commerce literature on self-disclosure. Both theoretical and practical implications are discussed.

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## 1. Introduction

Facebook reported that the number of active monthly social media users reached 1.06 billion globally in December 2012, with 193 million in the U.S. and Canada (Tam, 2013). Research conducted by Pew Research Center (2013) showed that a majority of Facebook users (71%) agree that social media is important in their lives. These facts indicate that Facebook has become an indispensable part of many users' everyday lives, breaking the boundary between their virtual and real worlds. However, there have been continuing concerns about self-disclosure, referring to the process by which a person voluntarily discloses personal information to others (Cozby, 1973; Wheelless & Grotz, 1976), on social media. The concern was raised even higher in 2010 when a major security bug was found in Facebook's security setting (Bilton, 2010). Other factors, such as online stalking, harassment, and stolen personal data, have also stirred deep concerns among users of Facebook, who have consequently become more reluctant to disclose personal information on the social networking site. Recent studies suggest that Facebook users gradually become aware of privacy issues and begin disclosing personal information in more restrictive ways (for more details, see Wilson, Gosling, & Graham, 2012).

While many social media studies have explored the degree to which social media users reveal their personal information, there has been a lack of systematic analysis examining factors that might explain users' self-disclosure on social media. Further, much electronic commerce (hereafter e-commerce) literature has explored reasons influencing consumers' disclosure of personal information

on the Web (e.g., Joinson, Reips, Buchanan, & Paine Schofield, 2010; Metzger, 2004), though little research specifically exploring social media-specific self-disclosure exists. Because of the voluntary nature of self-disclosure on social media, which is different from e-commerce websites requiring self-disclosure for a transaction, it demands alternative approaches to theories.

Accordingly, this study attempted to examine factors that have been frequently used in e-commerce and social media literature: social contract theory (Fogel & Nehmad, 2009; Okazaki, Li, & Hirose, 2009), trust and self-disclosure relationships (Jarvenpaa & Tractinsky, 1999; Metzger, 2004), media usage patterns (Ko, Cho, & Roberts, 2005; Metzger, 2004), gender (Lewis, Kaufman, & Christakis, 2008; Thelwall, 2008), and uses and gratifications theory. While uses and gratifications theory has not been extensively used to explain self-disclosure online, much literature suggests that media motives affect ways of using media. Therefore, this study explored whether the theory can be used to predict self-disclosure on social media. The main goals of this study were to (1) examine whether the aforementioned theories would contribute to an understanding of self-disclosure in the context of social media, (2) identify factors influencing self-disclosure on social media in a more holistic way, and (3) suggest theoretical as well as practical implications.

## 2. Literature review

### 2.1. Facebook as a social media giant and its privacy crisis

Facebook was launched in 2004, and within five years, it had become one of the most popular social networking sites (SNS) in the United States and around the globe (Techtree News staff,

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2008). Facebook was founded by Mark Zuckerberg while he was attending Harvard University. Originally, it was an SNS providing service exclusively to Harvard University students. Over time, Facebook was made available to college students in the greater Boston area, and shortly afterwards, globally. As of 2012, the United States had more than 167 million Facebook users, with a 54% penetration rate. The 25–34 (24.4%) and 18–34 (23.7%) age groups are the two largest groups of the users in the United States ([checkfacebook.com, 2012](#)), justifying the use of college students as major subjects for Facebook-related studies in this field.

Facebook claims that they use members' personal information to provide customized services and better user experience ([Facebook, 2012](#)). However, this mechanism has drawn endless criticism for its invasion of privacy, in part for the company's use of personal user information for advertising or marketing purposes. Critics also point out that a security glitch found on Facebook in 2010 could result in the accidental release of users' personal information that is supposed to be private ([Wortham, 2010](#)). Likewise, Facebook also shares users' personal information with its partners to increase its profits ([Pegoraro, 2010](#)). This practice increases the chances of putting private information at risk. As privacy concerns among Facebook users has increased, many users not only have become reluctant to reveal their personal information on the site, but also have closed their Facebook accounts to boycott the way Facebook uses their personal information to operate the site ([Smith, 2010](#)). As a result of this controversy, privacy concerns have become more of an interest to social media practitioners as well as researchers.

## 2.2. Self-disclosure on Facebook

The degree of self-disclosure is often based on trust and can reinforce the closeness among people ([Cozby, 1973](#); [Derlega, Winstead, Wong, & Greenspan, 1987](#)) since the information released from self-disclosure is not easily accessed through any other means except the person disclosing the information ([Derlega & Grzelak, 1979](#)). In recent years, research on self-disclosure has shifted focus from interpersonal communication to online media. Early studies on computer-mediated communication found that people tend to disclose more personal information on the Web when compared to traditional interpersonal communication ([Tidwell & Walther, 2002](#)).

Regarding self-disclosure on Facebook, [Christofides, Muise, and Desmarais \(2009\)](#) found that Facebook users tend to disclose personal information, including e-mail address, birthday, relationship, and educational background on their profile pages. [Kolek and Saunders' \(2008\)](#) study on students' self-disclosure on Facebook found that "substantial proportions of students' profiles contained contact information, course schedules, positive references to the University, and pictures of students' consuming alcohol" (p. 1). However, in recent years, Facebook users have gradually become more reluctant to reveal their information due to security concerns ([Wilson et al., 2012](#)). Although previous studies have explored people's online self-disclosure, studies investigating the factors influencing Facebook users' self-disclosure are still underdeveloped and somewhat limited. Additionally, much literature suggests that self-disclosure is not only influenced by security concerns, but also by other factors. Therefore, this study sought to explore the factors that influence Facebook users' decisions regarding revealing personal information, based on previously established theories and practices.

## 2.3. Uses and gratifications on Facebook

Uses and gratifications theory (U&G) explains how media audiences' motives influence their media use and other outcomes, such as attitude and behavioral intentions. According to [Katz, Blumler,](#)

[and Gurevitch \(1973\)](#), U&G assumes audiences are "goal-driven" and actively consume media content to fulfill certain gratifications. When compared to other theories based on the notion of powerful media and passive audience, U&G is more concerned with "what people do with media" rather than "what media does to people" ([Katz, 1959](#)). Despite its old age, the notion of "active audiences" ensures its appropriateness for studying new media such as the Internet ([Newhagen & Rafaeli, 1996](#)). Further, studies have used U&G to explore Facebook motives (e.g., [Ellison, Steinfield, & Lampe, 2007](#); [Foregger, 2009](#); [Sheldon, 2008](#); [Smock, 2011](#)). In a Facebook motives study, [Smock \(2011\)](#) identified 9 major motives for using Facebook: relaxing entertainment, expressive information sharing, escapism, companionship, professional advancement, social interaction, habitual passing of time, and meeting new people. In addition, previous studies have found that users' motives for using Facebook predict their Facebook use ([Lee & Boyer, 2007](#); [Pempek, Yermolayeva, & Calvert, 2009](#)). For instance, students who are motivated to use Facebook for relationship maintenance tend to also use the site for the same purpose.

Even though U&G has helped researchers better understand Facebook motives and use, there is still an absence of research specifically exploring whether Facebook users' motives and usage patterns account for their self-disclosure on Facebook. Based on the notion of U&G, this study assumes that Facebook users may need to disclose more personal information to fulfill certain gratifications, such as social connections and relationship searches. Accordingly, this study asked whether the degree to which college students reveal their personal information is affected by different motives for using Facebook.

**RQ1.** Do different motives for using Facebook influence the degree to which college students disclose their personal information on Facebook?

[Metzger \(2004\)](#) found that time spent on the Web positively influences consumers' information disclosure on commercial websites. [Ko et al. \(2005\)](#) suggest that the duration of time spent on a website tends to positively influence consumers' attitudes toward the site, which in turn predicts their purchase intention. Based on the fact that time spent on the Web and commercial websites influences users' online behavior, this study postulated that self-disclosure on Facebook could be influenced by time spent on the site. This study also questioned whether the number of Facebook friends a user has influences his or her self-disclosure, since many of the social connections on Facebook require a certain degree of self-disclosure. Therefore, the following hypotheses were proposed:

**H1.** The more college students use Facebook, the more personal information they disclose on Facebook.

**H2.** The more Facebook friends college students have, the more personal information they disclose on Facebook.

## 2.4. Self-disclosure as a social contract

The concept of social contract indicates that consumers voluntarily provide personal information in exchange for certain services ([Milne & Gordon, 1993](#)). In exchanging personal information with services, consumers perceive benefits as well as risks regarding self-disclosure ([Okazaki et al., 2009](#)). [Culnan and Armstrong \(1999\)](#) examined the effects of perceived benefits and perceived risks on the collection and use of consumers' personal information and found that only when consumers perceive benefits to be higher than risks will they practice this "social contract." Contrarily, recent studies suggest that information disclosure on SNSs is influenced by

both perceived benefits and perceived risks (Fogel & Nehmad, 2009; Krasnova, Spiekermann, Koroleva, & Hildebrand, 2010).

Regarding perceived benefits of Facebook use, Facebook users might expect to receive information that is highly related to their interests through their voluntary self-disclosure and social connections. However, Facebook users may also perceive risks when disclosing personal information. For instance, location-based services on Facebook may publish a user's position, making Facebook users vulnerable to online predators. Cyber-stalking on SNSs can also cause serious social problems, especially for young adults and female users (Working to Halt Online Abuse, 2009). Based on the notion of social contract, the following hypotheses were proposed:

**H3a.** The higher benefits college students perceive in using Facebook, the more personal information they disclose on Facebook.

**H3b.** The higher risks college students perceive in using Facebook, the less personal information they disclose on Facebook.

### 2.5. Trust in and self-disclosure on Facebook

According to Mayer, Davis, and Schoorman (1995), trust is defined as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 712). In consumer behavior, trust implies consumers' belief that product or service providers can keep their promises and act in responsible ways (Devosk, Spini, & Schwartz, 2002). Since the advent of the Internet, studies focusing on online trust have become popular in many disciplines. Online trust is different from offline trust because the Internet is often regarded as an insecure sphere; therefore, online trust is relatively difficult to achieve and maintain when compared to trust in an offline environment (Friedman, Kahn, & Howe, 2000). Although online trust may require greater efforts by the user, previous studies found that online trust is not only a precursor of consumers' online transactions (Jarvenpaa & Tractinsky, 1999), but also strongly related to users' levels of self-disclosure on the Web (Metzger, 2004). While trust in a website may be different from trust in Facebook, it can be hypothesized that one may provide more personal information when one trusts in the social media. This may hold true in that self-disclosure is considered a vulnerable act in a virtual environment (Metzger, 2004).

**H4.** The more college students trust Facebook, the more personal information they disclose on Facebook.

### 2.6. Gender differences in online self-disclosure

Parks and Floyd (1996) claimed that demographic variables influence people's media use in cyberspace, and several subsequent SNS-related studies have substantiated this claim. Among many demographic characteristics, gender has been shown to be a significant factor affecting usage pattern of SNS (e.g., Acquisti & Gross, 2006; Caverlee & Webb, 2008; Hargittai, 2007; Joinson, 2008; Lenhart, 2009). Studies have specifically suggested that female social media users are less likely than male users to disclose private information such as telephone number and address on their social media pages, as they have a relatively higher privacy concern compared to male social media users (Lewis et al., 2008; Thelwall, 2008). Therefore, H5 was proposed:

**H5.** Male college students disclose more personal information on Facebook than female college students do.

A research framework for this study based on the hypotheses and research question was summarized in Fig. 1.

## 3. Method

In order to collect data for various independent variables (different motives for using Facebook, time spent on Facebook, number of Facebook friends, perceived benefits of using Facebook, perceived risks of using Facebook, trust in Facebook, and gender difference) and the dependent variable (disclosure of personal information) tested in this study, a survey was administrated at four different universities in the United States in November and December of 2012.

### 3.1. Sample

College students were selected as the research population because the majority of U.S. college students are Facebook account holders and they account for the largest group of Facebook users in the United States (checkfacebook.com, 2012). Several previous studies also confirmed that more than 90% of U.S. college students have Facebook accounts (e.g., Sheldon, 2008; Stutzman, 2006). A convenience sample was used. 212 college students were recruited from four different U.S. universities. By deleting 13 invalid cases and 7 students not having Facebook accounts, a total sample size of 192 participants was used in this study.

### 3.2. Procedure

This research was reviewed and approved by the Institutional Research Board of the researchers' university. An online survey consisting of 71 items was developed for data collection. Prior to the formal administration, a pretest was administered by recruiting 3 college students from the researchers' university. Minor problems of research design were identified and items were revised accordingly. The survey was administered individually at the participants' convenience, and the webpage for the online survey clearly explained the complete research procedure. Each participant spent from 8 to 10 min answering the online questionnaire. IBM SPSS Statistics 20 was used to analyze the data gathered in this study.

### 3.3. Instrumentation

The questionnaire included 7 sections of questions that were designed to measure the independent and dependent variables in this study.

#### 3.3.1. Motives for using Facebook

A total of 24 items were compiled from previous studies regarding Facebook motives (Joinson, 2008; Sheldon, 2008; Smock, 2011). These items asked participants to rate their agreement on a 7-Point Likert scale. The result of a principle component factor analysis is discussed in the result section (Table 1).

#### 3.3.2. Time spent and number of friends on Facebook

Two open-ended questions were designed to measure the participants' time spent (number of average minutes on a daily basis) on Facebook and the numbers of Facebook friends users had.

#### 3.3.3. Perceived benefits of Facebook use

This section was designed to measure the participants' degrees of perceived benefits of using Facebook. Three measurement items were borrowed from a previous study on Facebook users' concerns regarding privacy issues (Debatin, Lovejoy, Horn, & Hughes, 2009). Participants were asked to rate their perceived benefits on a 7-Point Likert scale. This section included these 3 statements: “I feel that Facebook helps me interact with friends and people”; “I

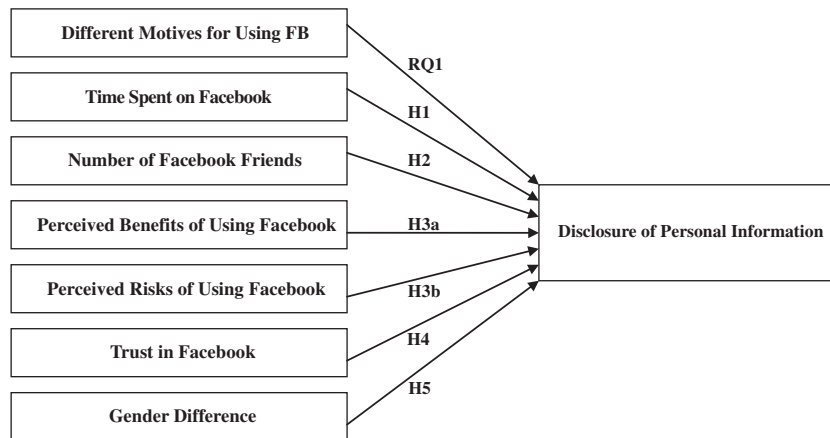


Fig. 1. Research Framework.

think that I would have less contact with my friends if I didn't have my Facebook account"; and "I think Facebook is important in my everyday life." Internal consistency reliability of the scale items was adequate with Cronbach's alpha of .79.

### 3.3.4. Perceived risks of Facebook use

This section was designed to measure the participants' degrees of perceived risks of using Facebook. Measurement items for perceived risks were also developed from [Debatin et al.'s \(2009\)](#) study. The participants were asked to respond to 3 statements: "I'm worried that I may encounter unwanted advances, stalking, or harassment on Facebook"; "I'm worried that I may encounter damaging gossip or rumors on Facebook"; and "I'm worried that I may encounter personal data stolen/abused by others on Facebook." The cronbach's alpha reliability of the 3-item measure showed internal consistency at .84.

### 3.3.5. Trust in Facebook

Four questions were designed to gauge the participants' degrees of trust in Facebook. A 7-Point Likert scale was developed from a previous study on social networking site users' risk taking, trust,

and privacy concerns ([Fogel & Nehmad, 2009](#)). The participants were asked to rate their agreement with the following statements: "Facebook is a trustworthy social network"; "I can count on Facebook to protect my privacy"; "I can count on Facebook to protect customers' personal information from unauthorized use"; and "Facebook can be relied on to keep its promises." The Cronbach's alpha of the 4-item measure was .92.

### 3.3.6. Demographic information

Three demographic questions derived from previous research on Facebook ([Ellison et al., 2007](#)) were used to gather information regarding participants' gender, classification of education, and age.

### 3.3.7. Self-disclosure on Facebook

A total of 21 items were used to determine users' self-disclosure on Facebook. Information that could be made available on Facebook users' "about me" pages was used to gauge the degree to which participants disclose their personal information. Participants were asked to check information items they disclosed on Facebook, and the number of items checked was converted into Information Disclosure Index (IDI) scores. The information items

Table 1

Summary of principle component factor analysis with varimax rotation and descriptive statistics for Facebook motives ( $N = 192$ ).

	Factor loadings	$h^2$	Alpha	$M$	$SD$
<b>Factor 1: Social motives</b>			0.80	5.19	1.14
I use Facebook to send a message to a friend	.60	.52			
I use Facebook to tag photos	.63	.50			
I use Facebook to update my own status	.64	.47			
I use Facebook to post a message on my friend's wall	.81	.67			
I use Facebook to share/post photos	.76	.58			
I use Facebook to see what people have put as their status	.59	.57			
<b>Factor 2: Hedonic motives</b>			0.77	3.27	1.19
I use Facebook to develop a romantic relationship	.67	.48			
I use Facebook because it is cool	.61	.54			
I use Facebook to feel less lonely	.80	.76			
I use Facebook to find more interesting people than in real life	.57	.50			
I use Facebook when no one to talk or be with	.60	.58			
<b>Factor 3: Utilitarian motives</b>			0.68	2.86	1.37
I use Facebook to join groups	.64	.50			
I use Facebook to play games	.73	.60			
I use Facebook to use applications	.85	.75			
<b>Factor 4: Social investigation motives</b>			0.76	3.61	1.70
I use Facebook to look at the profiles of people I don't know		.80			
I use Facebook to view other people's friends		.85			
Eigenvalue	5.07	2.03	1.31	1.13	
Cumulative%	31.71	44.40	52.62	59.65	



were categorized into 3 categories by the researchers: highly sensitive personal information, sensitive personal information, and basic personal information. In order to ensure face validity, a total of 12 social media professionals and heavy users of Facebook reviewed all of the items and agreed with the categorization. Highly sensitive personal information included items such as mobile phone number, other phone number(s), religious views, political views, address, relationship status, family members, and interests in men or women. Sensitive personal information included e-mail, profile picture, work experience, birthday, networks the participants join, and instant messenger screen name(s). Basic personal information included items such as language(s) spoken, gender, college/university, current city of residence, a short personal description, hometown, and personal website/blog URL.

#### 4. Results

In order to address research question 1 (Do different motives for using Facebook influence college students' degrees of self-disclosure?), a principle confirmatory factor analysis and a stepwise multiple regression were conducted. For a parsimonious measure, the initial 24 motive items were examined, and the factorability was confirmed (KMO measure = .85,  $\chi^2(276) = 2,087.37$ ,  $p = .000$ ). Items were eliminated based on the following criteria: (1) an average corrected item-to-total correlation below .35, (2) an average inter-item correlation below .2, (3) factor loadings below .45, and (4) items with cross-loading greater than .4 on more than one factor (Hatcher, 1994; Tabachnick & Fidell, 1996). As a result of the item purification, a total of 8 items were eliminated. A principle component factor analysis with varimax rotation was conducted with the remaining 16 items, and the four factor solution, which explained 59.65% of the variance, was selected (see Table 1). Factor 1 consisting of 6 items was named "social motives," meaning people using Facebook for social connections and relationship maintenance; Factor 2 consisting of 5 items was named "hedonic motives." It implies that people with a strong hedonic motivation seek enjoyment—affection gratification—during using Facebook (Hirschman & Holbrook, 1982); Factor 3 consisting of 3 items was named "utilitarian motives," which refers to rational and goal-oriented motivations (Batra & Ahtola, 1991); Factor 4 consisting of 2 items was named "social investigation motives." People with such motivation tend to use Facebook to search/stalk others they know or they do not know in their real lives. Factor loadings ranged from .57 to .85, and the lowest communality for items was .47. Internal consistencies for the factors identified were adequate, ranging from .68 to .80.

Each type of personal information (highly sensitive, sensitive, and basic personal information) was regressed on all four factors of Facebook motives. The results showed that the category of social motives was the significant predictor for self-disclosure across all three types of information (basic:  $\beta = .32$ ,  $p < .001$ ; sensitive:  $\beta = .31$ ,  $p < .001$ ; highly sensitive:  $\beta = .28$ ,  $p < .001$ ). Other motives, such as hedonic, utilitarian, and social investigation, however did not contribute to the multiple regression models (see Table 2). This may indicate that when college students use Facebook for the purpose of socializing, they are more likely to reveal personal information, whereas they barely bother to reveal their information for hedonic, utilitarian, or investigation uses. The result indicates that uses and gratifications theory may serve as a theoretical framework when exploring information self-disclosure on social media.

To examine hypothesis 1, each type of personal information was regressed on average minutes spent daily on Facebook. As shown in Table 3, the effects of time spent on Facebook were statistically

significant on all three types of information at the 0.5 level. The results also showed that time spent on the social media is more strongly associated with disclosure of highly sensitive information,  $F(1, 190) = 12.10$ ,  $R^2 = .06$ ,  $p < .001$ . Therefore, hypothesis 1 was supported on all types of information disclosure.

In examining the influence of the number of Facebook friends on self-disclosure, a positive relationship was hypothesized (hypothesis 2) and tested by a set of simple linear regression analyses. The results revealed that self-disclosure on Facebook for basic information ( $F(1, 186) = 8.09$ ,  $R^2 = .04$ ,  $p < .05$ ) and highly sensitive information ( $F(1, 186) = 6.51$ ,  $R^2 = .03$ ,  $p < .01$ ) increases as the number of friends on the social media increases, which was not the case with sensitive information (see Table 3). Thus, hypothesis 2 was partially supported.

Given the mixed results from previous studies, the effects of main constructs (i.e., perceived benefits and risks) in the social contract theory were tested on self-disclosure (hypotheses 3a and 3b). Hypothesis 3a proposed a positive relationship between perceived benefits of using Facebook and self-disclosure. A series of simple linear regression analyses confirmed the positive influence of perceived benefits on basic information ( $F(1, 190) = 17.26$ ,  $R^2 = .08$ ,  $p < .001$ ) and sensitive information ( $F(1, 190) = 6.93$ ,  $R^2 = .04$ ,  $p < .05$ ), with the exception of highly sensitive information (see Table 3). It can be said that self-disclosure of basic and sensitive information increases as Facebook users' perceived benefits increase. Highly sensitive information, however, was not predicted by perceived benefits; therefore, hypothesis 3a was partially supported. Hypothesis 3b, which proposed a negative relationship between perceived risks and self-disclosure, was not supported. The effects of perceived risks were statistically insignificant across all three types of information, although the trend was in the negative direction, as expected.

Hypothesis 4 proposed positive trust and self-disclosure relationships and was tested by a series of simple linear regressions. The results indicated that trust is a predictor of self-disclosure for basic information ( $F(1, 190) = 5.80$ ,  $R^2 = .03$ ,  $p < .05$ ) and sensitive information ( $F(1, 190) = 9.72$ ,  $R^2 = .05$ ,  $p < .01$ ). However, highly sensitive information disclosure was not predicted by trust in Facebook (see Table 3). It can be said that Facebook users are likely to reveal more personal information when they trust in Facebook, with the exception of highly sensitive information. Thus, hypothesis 4 was partially supported.

Finally, a series of independent samples *t*-tests was conducted to examine whether there is difference in self-disclosure on Facebook between male and female students. As shown in Table 4, male participants showed slightly higher mean scores than did female across all three types of information. However, only basic information disclosure was statistically significantly different depending on gender ( $t(98.11) = 1.97$ ,  $p < .05$ ).

**Table 2**

Summary of multiple regression analyses: Facebook motives on three types of self-disclosure (standardized coefficient,  $N = 192$ ).

Variables	Type of information		
	Basic	Sensitive	Highly sensitive
Social motives	.32 (4.10)***	.31 (4.00)***	.28 (3.53)***
Hedonic motives	-.08 (−.93)	.00 (.05)	-.01 (−.06)
Utilitarian motives	.14 (1.83)	.12 (1.53)	-.02 (−.24)
Social investigation motives	.07 (.92)	.05 (.60)	.09 (1.06)
<i>F</i> (4, 187)	7.47***	7.91***	4.97***
<i>R</i> <sup>2</sup>	.14	.15	.10

Note. () means *t*-value.

\*  $p < .05$ .

\*\*  $p < .01$ .

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

**Table 3**

Summary of simple linear regression analyses (standardized coefficient).

Hypotheses	d.f.	Type of information		
		Basic	Sensitive	Highly sensitive
<b>H1.</b> Time spent on Facebook	190	.16 (2.18)*	.21 (2.98)**	.25 (3.48)***
<b>H2.</b> Number of Facebook friends	186	.20 (2.84)*	.10 (1.41)	.18 (2.55)**
<b>H3a.</b> Perceived benefits	190	.29 (4.15)***	.19 (2.63)**	.13 (1.80)
<b>H3b.</b> Perceived risks	190	-.10 (-1.42)	-.06 (.77)	-.03 (-.42)
<b>H4.</b> Trust in Facebook	190	.17 (2.41)*	.22 (3.12)**	.11 (1.57)

Note. () means *t*-value.\*  $p < .05$ .\*\*  $p < .01$ .\*\*\*  $p < .001$ .

## 5. Discussion

The purpose of this study was to explore factors that may explain information disclosure behavior on Facebook and to provide understanding of each factor's contribution in explaining such behavior. Findings suggest the potential of all the theories and constructs examined in this study as frameworks to explain self-disclosure behavior on Facebook. However, this social media-specific study offered evidence that these theories may have different implications from previous literature, both theoretically and practically.

A total of four motives for using Facebook were identified (social, hedonic, utilitarian, and social investigation), and it was confirmed that different motives lead to the disclosure of different types of personal information, which echoes U&G's assumption that users tend to use media in different ways to fulfill their diverse needs. In this study, social motives predicted college students' "basic," "sensitive," and "highly sensitive" information disclosure. Hedonic, utilitarian, and social investigation motives were not significant factors in explaining information disclosure behavior. This finding suggests that college students who use Facebook for social motives (e.g., sending messages, tagging photos, and updating status) may be willing to provide more personal information, even "highly sensitive" information. The preliminary evidence showed in this study calls for more research on the link between social media motives and self-disclosure behavior. Social media companies may benefit from this finding by encouraging users to voluntarily provide their personal information based on types of activities in which users are involved on social media. However, given the fact that some Facebook users use the media for hedonic, utilitarian, and social investigation motives, social media companies should take caution when encouraging general users to reveal their personal information.

The effect of time spent on Facebook appeared to be significant on the disclosure of all types of personal information, with the biggest influence on "highly sensitive" information. This confirms that the more time college students spend on Facebook, the more likely they are willing to reveal their personal information, especially

more "highly sensitive" information. In addition to time spent on Facebook, the results also confirm that the more friends they have on Facebook, the more personal information they reveal on Facebook. While the number of friends on social media has mostly been studied for descriptive purposes, this study proposes the potential of the number of social media friends as an explanatory variable for predicting other variables, such as attitudinal and behavioral outcomes. Given that having friends online is a new phenomenon, future studies are expected to examine what exactly the number of friends on social media means theoretically. Social media companies requiring personal information to be disclosed may need to reinforce their sites' "stickiness," encouraging users to spend more time on social media. Likewise, social media companies may also need to encourage users to build up as many social connections as possible on their sites in order to lower the psychological barriers for users to disclose personal information.

Regarding the social contract theory, the result was primarily consistent with Krasnova et al.'s (2010) suggestion that users perceiving more benefit than risks tend to disclose more personal information. The result confirmed the utility of the social contract theory as a framework for explaining self-disclosure in the context of social media. In adopting the theory to examine effects of perceived benefits and risks on self-disclosure, this study treated personal information as a multidimensional construct and categorized types of information into three categories based on their sensitivity. This operationalization provides a deeper understanding of the application of the theory in explaining self-disclosure. The results revealed that the effect of perceived benefits was limited to "basic" and "sensitive" information only. Information that is considered highly sensitive for disclosure on social networking sites was not affected by how much users perceived benefits. One possible explanation is that college students using social media are well aware of the risks involved in disclosing "highly sensitive" personal information; therefore, they would not disclose such information, no matter how much they perceive the benefits to be. A Facebook study conducted by Debatin et al. (2009) supports this explanation, showing that more than 90% of college students are aware of the privacy issues on Facebook, and 77% claim that they are likely to restrict others' access to their Facebook personal profiles. In order to mitigate security concerns among Facebook users, social media companies should consider providing potential benefits in exchange for personal information. However, they should be aware of the risk of attempting to collect "highly" sensitive information.

Unlike Metzger's (2004) findings on the effect of trust on self-disclosure on the Web, the current study found that the effect of trust is significant only on "basic" information disclosure. Other types of information, such as sensitive and highly sensitive information disclosure, did not differ by degrees of trust in Facebook. It is plausible that self-disclosure on Facebook is different from that on the Web in general. Self-disclosure on the Web, such as

**Table 4**Results of *t*-test and descriptive statistics for gender difference in self-disclosure.

Gender	Type of information		
	Basic	Sensitive	Highly sensitive
Male ( <i>N</i> = 61)	5.15 (1.81)	3.59 (1.33)	3.13 (1.82)
Female ( <i>N</i> = 131)	4.63 (1.46)	3.47 (1.15)	2.85 (1.54)
<i>t</i> (98.11)	1.97*	.53	.29

Note. () means standard deviation.

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

providing private information and credit card numbers, tends to be protected by high-security Web pages. Hence, information disclosed on the Web is not easily viewable by unauthorized individuals. In contrast, information disclosed on Facebook is, to some degree, public to either the user's friends or friends' friends, even if the users use on-site privacy settings. This difference may lead Facebook users to be reluctant to disclose "sensitive" and "highly sensitive" personal information, independent from their degrees of trust. This finding suggests the trust and self-disclosure relationship still may serve as a theoretical framework in explaining self-disclosure in the social media context. However, it also calls for more research regarding the role of trust in social media. Despite needs for more research, social media companies are encouraged to reinforce users' trust if they aim to obtain "basic" personal information for advertising and marketing purposes.

Gender difference was also confirmed only on "basic" information disclosure, which partially supports previous studies' assumption that female users disclose less personal information on the Web because of their relatively high concerns about privacy invasion. It is plausible that both men and women are well concerned about privacy issues regarding private information disclosure on Facebook. Therefore, gender difference would not affect Facebook users' self-disclosure of "sensitive" and "highly sensitive" information. This finding also suggests a strong need for future studies to view personal information as a multidimensional construct and examine effects of gender on different categories of personal information disclosure. Based on the finding, social media companies may expect more "basic" information disclosed by male rather than female users. However, no difference between genders should be assumed in terms of sensitive and highly sensitive information.

### 5.1. Limitations and future studies

As with most studies, this study has limitations. First, even though the researchers selected factors influencing self-disclosure through an extensive research, theories and constructs that have potential may have been left unselected. Future studies should, therefore, attempt to identify and include theories and constructs that have significant potential for self-disclosure on social media. Second, this study examined individual contributions of each factor in explaining Facebook users' self-disclosure. It is suggested that further studies investigate and compare the predictive power of relevant theories and constructs. This would enrich theoretical discussion as to whether certain factors better explain self-disclosure behavior. Third, future studies may need to develop a measurement scale for perceived benefits and risks that is specific to social media studies. This study borrowed the scale from a study on e-commerce due to the lack of previously developed measurements for social media. Social media users may perceive benefits and risks differently from users of e-commerce websites. Fourth, it is desirable to further generalize the findings by including the general population in subsequent study. Although college students are deemed to be an appropriate sample frame for a social media study, researchers may be able to find mixed results from a general user survey. As discussed earlier, college students may have higher concerns about their online privacy, whereas the general population may have different degrees of perceived benefit and risk, as well as different levels of trust regarding their self-disclosure on social media.

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