

# The Impact of Audience Diversity and Information Sensitivity on Facebook Users' Self-Disclosure

Hsiu-Chia Ko author<sup>1</sup>, Huang-Yu Chi author<sup>2</sup>

Department of Information Management, Chaoyang University of Technology, Taichung, Taiwan, R.O.C., e-mail:huangyuamos@gmail.com

## Abstract

Based on Communication Privacy Management (CPM) theory, this study aims to investigate the impacts of audience diversity and information sensitivity on individuals' willingness to commit self-disclosure on Facebook using a mixed-design experiment and survey method. The research results revealed that posts on SNSs can be classified into three types. Individuals have the lowest willingness to post high-sensitive information about salary and politics, followed by medium-sensitive information about emotions and feelings, and low-sensitive information about current status and daily life. The results also found that audience diversity influences one's willingness to commit self-disclosure in SNSs. Individuals have a higher willingness to disclose themselves to close and reliable friends than to nodding acquaintances, common friends and strangers.

## 1. Introduction

Recently, the use of social network sites (SNSs) has become a global trend. According to the Q3 Social Media Report issued in Sept. 2011 by Nielsen, a US market research organization, SNS and blog use reached nearly 80% of the active Internet users in the US, indicating that among Americans who spend time online, majority visit these sites. The same report by Nielsen also stated that in Australia, Brazil, France, Japan and other countries and regions, SNSs accounted for the majority of users' time online, reaching at least 60% of active Internet users [1]. Clearly, SNSs are very popular around the world.

SNSs provide the function of posting messages (for example, through the Facebook "wall" ) so that followers who are friends or fans of the individual can also receive the same message synchronously. An individual's act of sharing

information about his/her life, emotions, inner feelings, and experiences with others can be regarded as a type of self-disclosure [2, 3]. SNSs provide users multiple opportunities to engage in communication in a computer-mediated context through self-disclosure, demonstrating the critical interwoven relationship among privacy, communication, and technology [4]. According to Child and Petronio [4], Communication Privacy Management (CPM) theory is a useful framework to help conceptualize and explore the disclosure and privacy practices occurring through SNSs. CPM is an evidence-based theory on the management of sharing users' private information and granting others access to such data. According to CPM theory, the privacy boundary defines the legal owner of private information and who has the right to control privacy. Two privacy boundaries are involved in self-disclosure: personal boundary and collective boundary [5]. Personal boundary refers to that which manages private information about the self. Except for the owner, people outside the boundary can know the private information within the personal boundary. On the contrary, information in the collective boundary may cover different sorts of individual information, which did not solely belong to the self, but to all members in a specific group. Moreover, members of a collective boundary were assumed to have responsibilities to protect the shared information. When making a decision to share private information with others, an individual would consider what sort of information to be shared, and what type of members to be included into the collective boundary. Therefore, the type of information shared and the recipients may have an impact on the extent of self-disclosure to others.

In SNSs settings, Internet users who allow, invite, and encourage others to share their profiles or posts fundamentally permit others to become co-owners of their posted information. However, compared with face-to-face interaction, privacy control inside a collective boundary within SNSs is more difficult for an individual, which may influence an individual's willingness to disclose him/herself on SNSs. The current study aims to investigate the impacts of audience diversity and information sensitivity on an individual's willingness to commit self-disclosure in SNSs by considering the most popular site, Facebook, as the research field based on CPM theory. In the present study, information with different degrees of sensitivity is designed by observing the related literature of self-disclosure and posts on Facebook. The current study uses a mixed-design experiment, conducted using a survey method, in which two groups of people were asked to express willingness to disclose information with different degrees of sensitivity when facing two types of audiences: stranger and close friend on Facebook. After an exploratory factor analysis and two-way mixed design ANOVA, a further study is conducted to explore an individual's willingness to commit self-disclosure in SNSs have significant difference when facing diverse audiences and

posting various degrees of sensitive information.

## **2. Review of literature and hypotheses development**

### **2.1. CPM theory**

CPM theory was first proposed by Petronio in 2002 [5]. Petronio proposed Communication Boundary Management (CBM) Theory in 1991 [7], which she renamed to CPM in 2002. In CPM, the behavior of sharing individual private information with others is considered “disclosure.” The major difference between disclosure and self-disclosure is that in the former, the disclosed information is not limited to personal information owned by an individual, and still covers private information about others [8]. CPM theory emphasizes that disclosure has benefits and risks. Although disclosing private information to others is one of the important means of establishing a close relationship with others, sharing private information with others is accompanied by certain kinds of risk, such as embarrassment, discomfort, or expulsion. Therefore, disclosing private personal information increases the probability of vulnerability. CPM theory emphasizes that while an individual has the need for protection of privacy, he or she also has the need for sharing private information with others. As such, individuals must strike a balance between their need for privacy and disclosure [9].

According to CPM theory, the management of individual privacy rules consists of three processes: privacy rules foundations, boundary coordination operations, and boundary turbulence [5, 9, 10]. The privacy rules foundation refers to the process of establishing privacy rules. Risk-benefit assessment is an important factor influencing the establishment of privacy rules. Individuals develop rules to help them maximize benefits and minimize risks of disclosure. The second process, boundary coordination operations, refers to the process by which individuals create a collective boundary with others or participate in an existing collective boundary. The final process, boundary turbulence, stems from the difficulty of managing boundary coordination and operation, which may sometimes result in occasional violations of privacy management rules (i.e., people within a collective boundary may fail to comply with the common privacy management rules). The second process, coordination privacy boundary, includes three management operations: boundary linkages, boundary ownership, and boundary permeability [5, 6,9, 10].

### **2.2. CPM theory and self-disclosure**

Laurenceau, Barrett, and Pietromonaco [11] classified self-disclosure into two types: factual self-disclosure and emotional self-disclosure. Factual self-disclosure

generally refers to the disclosure of relatively personal fact or information, such as “I failed the examination in the school today.” On the other hand, emotional self-disclosure refers to the disclosure of private feelings, advice and judgment, such as “I failed the examination in the school and I was so terribly upset.” Apparently, emotional self-disclosure refers to an individual’s feeling about matters, and factual self-disclosure consists of statements related to themselves, but without comments on this matter. Compared with factual self-disclosure, emotional self-disclosure has a higher degree of privacy for an individual. Moreover, individual data (such as income) can be considered more highly sensitive data [12].

According to CPM theory, the sensitivity of the information is one of the important factors influencing the risk-benefit assessment. Since emotional self-disclosure and income may cause a higher risk; an individual may tend to not reveal this sort of information within a collective boundary.

### 2.3. Audience diversity and information sensitivity on SNSs

Currently, many SNSs have the function of setting a social circle, but the research results of Stuzman, Capra, and Thompson [13] show that although 87% of the participants changed their privacy settings on Facebook, 77% of these never set the special rights for certain audience. Clearly, most Facebook users seem not often use the function of social circle setting. Boyd [14] reported that adolescents use the SNS MySpace to communicate with their classmates, and that they do not want their parents to know about their MySpace profiles. To prevent their parents from knowing about their activities on MySpace, these adolescents would adopt many methods, such as hiding their identities and creating a second account on MySpace.

Hollenbaugh [15] probed into the individual motivation of blogging, and found that the audience group defined by bloggers are not close friends or family, but themselves. Moreover, Hollenbaugh [15] found that the organization of one’s thoughts and reflections as the main motivation for using blogs influences the amount and depth of bloggers’ self-disclosure. Child and Petronio [4] also reported that with the prevalence of boundary crossing, managing privacy boundaries is fast becoming difficult in SNS settings. Clearly, the diversity of audiences in SNS may influence user self-disclosure willingness. Therefore, the following hypothesis was proposed:

H1: Audience diversity influences an individual’s willingness to commit self-disclosure in SNSs.

Moreover, the research results of Frye and Dornisch [16] showed that the disclosure of highly intimate topics using online communication tools with the

perception of low level of privacy is more uncomfortable than the disclosure of similar topics using the communication tools with a higher level of privacy perception.

Clearly, due to the openness of SNSs, establishing an effective negotiation mechanism, which results in message extension and boundary crossing among the co-owners of private information within a collective boundary, is difficult. Considering the cost and benefits of disclosure, an individual first assesses the information sensitivity and the level of risks that accompany the disclosure in SNSs, and then decides to limit the disclosure to surface information; finally, the highly sensitive information is concealed by the individual and kept in a personal boundary. Accordingly, the sensitivity of disclosed information may influence users' willingness to commit self-disclosure on SNSs. Therefore, this study proposed the following hypothesis:

H2: Information sensitivity influences an individual's willingness to commit self-disclosure in SNSs.

### 3. Research design

#### 3.1. Research method and scenario design

The current study was conducted using mixed-design experiment through two different scenarios. First, based on previous literature on self-disclosure and through observations of posts on Facebook, ten items with different degrees of sensitivity were designed to measure willingness to commit self-disclosure. Sample items include the daily life such as "I am willing to post today's trivia on Facebook" and "I am willing to post the moment what is happening on Facebook," and so on. Moreover, high- personal private message such as "I am willing to open my phone number on Facebook" and "I am willing to open my e-mail on Facebook," and so on. Meanwhile, based on the close and distant relationships between Facebook users and their audience, two Facebook audience groups were identified: "strangers," and "close friends." Then two different scenarios were designed, each of which was designed to include only one type of audience on Facebook. We asked two groups of participants to indicate the extent of their willingness to commit self-disclosure, which was measured using 10 items with different degrees of sensitivity, when their audiences on Facebook only include one type of audience.

Table 1. Definition of different audience groups and questionnaire response

Types of audience	Operational definition	Total response	Invalid response	Valid response
Strangers	People on Facebook with whom the user is not	51	5	46

	acquainted and has no interaction in real life			
	People on Facebook with whom the user has an			
<b>Close friends</b>	intimate and reliable friendship and can share anything in the inner world	43	3	40
<b>Total</b>		94	8	86

## 4. Data analysis

### 4.1. Participants' demographics

The current study collected 86 valid questionnaires. The majority of the participants are male (n=59, 67.82%), and most participants have used Facebook for 2 to 3 years (n=33, 37.93%). There were more participants who reported using Facebook 3 to 4 times a day, and the time of beyond 50 min (n=32, 36.78%). The number of posts each day made by majority of the participants is less than 2 (n=56, 64.36%).

The multiple audiences that exist in Facebook. Most of these consist of mainly friends (n=84, 96.55%), siblings (n=56, 64.37%), and relatives (n=47, 54.02%). Notably, nearly 54% of participants have reported using the customized privacy settings in their posts, indicating that over 50% of the participants may care about the audiences of their posts.

### 4.2. Factor analysis

We performed a factor analysis to determine the extent of participants' perception of these sensitive information. Principal components analysis was used as an extraction method, and varimax rotation was used to extract the components. The result showed total variance of extraction is 69.80%. that the three factors were extracted. The loading of each factor is greater than or equal to 0.5, thereby meeting the threshold advanced by Hair et al. [17], who suggested that in the sample size of 86 or greater, factor loadings of .45 and above are significant. Regarding the examination of questionnaire validity, that the Cronbach's  $\alpha$  of each research construct is greater than 0.6, thus meeting the threshold value suggested by Hair et al. [17], the three factors were labeled as daily life, personal private message and salary and politics.

### 4.3. Two-way mixed design ANOVA

Finally, a two-way mixed design ANOVA was adopted to test the research hypotheses. Audience diversity (close friends and strangers) served as the between-subjects factor, whereas information sensitivity (daily life, personal private information and salary and politics) served as the within-subjects factor. The analysis result shown revealed no significant interaction effect between audience diversity and sensitivity of information (F=1.921, P=0.15>0.05). Therefore, the hypotheses were tested by examining the significance of the main effects of audience diversity and

information sensitivity, respectively. The results of the main effect test shows that there was a significant main effect of audience diversity ( $F=9.521, P<0.05$ ), indicating that different audiences had an impact on participants' willingness to commit self-disclosure on Facebook, thus, the H1 was supported. The result of the post-hoc test showed that participants were more willing to disclose information to close friends than strangers (shown in Table 2).

Table 2. Willingness to commit self-disclosure of information with different degrees of sensitivity in the face of audience diversity

	Daily life		personal private information		Salary and politics	
	$\mu$	SD	$\mu$	SD	$\mu$	SD
<b>Close friends</b>	4.94	1.24	4.23	1.24	2.37	1.41
<b>Strangers</b>	4.19	1.08	3.46	1.27	2.14	1.20

Note:  $\mu$  indicates Mean, SD indicates standard deviation.

The results also revealed that the main effect of information sensitivity has reached a significant level ( $F=108.071, P<0.05$ ), showing that information sensitivity had an impact on Facebook users' willingness to commit self-disclosure; therefore, H2 was supported. The result of the post-hoc test showed that although no significant difference in participants' willingness to disclose information pertaining to their daily life, such willingness was higher than that pertaining to information about their personal private message and salary and politics.

## 5. Conclusions

Because of a rapid rise of social networking websites in recent years, it becomes very common that users express their opinions on these websites. Based on the CPM theory and self disclosure theory, This study explore whether various types of audience and sensitive information influence Facebook users' intention to disclose messages On the Wall.

This study has several significant findings. First, according to the analysis results of the participants Facebook usage experience, more that 40% of the participants have used privacy setting function to hide some personal information in their profiles, and more than 50% of them have ever limited the accessibility of their posts to certain viewers. More than half of the users are willing to publish their personal profiles on Facebook, but they hold a more reserved attitude in deciding who can view their postings. This means that the participants care who are reading their posts. Second,

the result of factor analysis shows that posts on Facebook can be classified into 3 levels of sensitivity: low sensitivity (daily life), medium sensitivity (personal private message), and high sensitivity (salary and politics). A Two-way mixed design ANOVA further demonstrates that the Facebook users have more willing to post diary life related information, follows by personal private information and salary and politics related information.. Third, consistent with the CPM theory, The users' willingness to disclosure private information on Facebook were determined by the relationship with the audiences. Only the close relationships have been established among the Facebook users and their audiences, the willing to disclose private information on Facebook would be promoted. Taken as a whole, this study results demonstrates that diversity of audience and sensitivity of information shape a person's intention to make self-disclosure on Facebook.

### References

1. Nielsen, State of the media: the social media report. 2011.
2. Derlega, V.J., et al., Self-Disclosure. 1993, California: Sage Publications, Inc.
3. Gibbs, J.L., N.B. Ellison, and R.D. Heino, Self-Presentation in Online Personals. The Role of Anticipated Future Interaction, Self-disclosure, and Perceived Success in Internet Dating. *Communication Research*, 2006. **33**(2): p. 152-177.
4. Child, J.T. and S. Petronio, Unpacking the paradoxes of privacy in CMC relationships: The challenges of blogging and relational communication on the Internet, in *Computer-Mediated Communication in Personal Relationships*, K.B. Wright and L.M. Webb, Editors. 2010, Peter Lang Publishing.
5. Petronio, S., *Boundaries of Privacy Dialectics of Disclosure*. 2002, Albany, NY: State University of New York Press.
6. Child, J.T., et al., Blog scrubbing: Exploring triggers that change privacy rules. *Computers in Human Behavior*, 2011. **27**(5): p. 2017-2027.
7. Petronio, S., *Communication Boundary Management: A Theoretical Model of Managing Disclosure of Private Information Between Marital Couples*. *Communication Theory*, 1991. **1**(4): p. 311-335.
8. Petronio, S., *Communication privacy management theory*, in *Introducing Communication Theory: Analysis and Application*, R.L. West and L.H. Turner, Editors. 2003, McGraw-Hill Humanities. p. 168-180.

9. Metzger, M.J., Communication Privacy Management in Electronic Commerce. *Journal of Computer-Mediated Communication*, 2007. **12**(2).
10. Child, J.T., J.C. Pearson, and S. Petronio, Blogging, Communication, and Privacy Management: Development of the Blogging Privacy Management Measure. *Journal of the American Society for Information Science and Technology*, 2009. **60**(10): p. 2079-2094.
11. Laurenceau, J.-P., L.F. Barrett, and P.R. Pietromonaco, "Intimacy as an Interpersonal Process" The Importance of Self-Disclosure, Partner Disclosure, and Perceived Partner Responsiveness in Interpersonal Exchanges. *Journal of Personality and Social Psychology*, 1998. **74**(5): p. 1238-1251.
12. Malhotra, N.K., S.S. Kim, and J. Agarwal, Internet Users' Information Privacy Concerns (IUIPC): The Construct, the Scale, and a Causal Model. *Information Systems Research*, 2004. **15**(4): p. 336-355.
13. Stutzman, F., R. Capra, and J. Thompson, Factors Mediating Disclosure in Social Network Sites. *Computers in Human Behavior*, 2011. **27**: p. 590-598.
14. Boyd, D., Why Youth Love Social Network Sites: The Role of Networked Publics in Teenage Social Life, in *MacArthur Foundation Series on Digital Media and Learning*, D. Buckingham, T.J. D., and C. T., Editors. 2008, MIT Press: Cambridge MA. p. 119-142.
15. Hollenbaugh, E.E., Personal Journal Bloggers: Profiles of Disclosiveness. *Computers in Human Behavior*, 2010. **26**: p. 1657-1666.
16. Frye, N.E. and M.M. Dornisch, When Is Trust Not Enough? The Role of Perceived Privacy of Communication Tools in Comfort with Self-disclosure. *Computers in Human Behavior*, 2010. **26**: p. 1120-1127.
17. Hair, J.F., et al., *Multivariate Data Analysis*. 5th ed. 1998, New Jersey: Prentice-Hall, Inc.