

December 2004

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Junghyun Kim  
*Michigan State University*

Dan Kim  
*Michigan State University*

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## Recommended Citation

Kim, Junghyun and Kim, Dan, "The Effects of Perceptual Factors on Personal Information Disclosure" (2004). *AMCIS 2004 Proceedings*. 147.  
<http://aisel.aisnet.org/amcis2004/147>

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# The Effects of Perceptual Factors on Personal Information Disclosure on the Web

**Junghyun Kim**

Department of Telecommunication, Information  
Studies and Media  
Michigan State University  
Communication Arts and Sciences, 406  
East Lansing 48824  
Tel: 1-517-353-3640  
kimjun19@msu.edu

**Dan J. Kim**

Department of Telecommunication, Information  
Studies and Media  
Michigan State University  
Communication Arts and Sciences, 402  
East Lansing 48824  
Tel: 1-517- 353-6712  
dankim@msu.edu

## ABSTRACT

The present research examines what kinds of factors influence Internet users' decision to disclose their personal information. The present study investigates the perceived value of the benefits that Internet users can get from web sites and costs that are supposed to be caused by personal information disclosure behavior. The larger the perceived value of the benefits provided by a certain web site are, the more Internet users may become willing to register the web site even if they need to release their personal information. On the other hand, two types of costs - 1) Privacy risk that might be resulted from misuse or loss of personal information, and 2) Irksomeness or annoyance that is accompanied by personal information disclosure process – are expected to work against the disclosure of personal information by Internet users.

## Keywords

Personal information disclosure, perceived value, irksomeness, perceived risk, trust

## INTRODUCTION

Internet users browse, search for information or buy products on the web. When Internet users are participating in these activities, some web sites require personally identifying information in order to give users access to services provided by those web sites. In such sense, providing personal information may be another activity that is indispensable to Internet users if they want to get information, service or products from web sites. Personally identifying information required by web sites includes name, phone number, e-mail address, postal address, credit card number or even social security number. Internet users may willingly provide their personal information in some occasions, while they might be reluctant to submit such information at other occasions.

Then what are the factors that influence the decision of Internet users on whether they provide their personal information or not? A group of previous studies investigated factors that affect product purchase decision of consumers on the Internet (Jarvenpaa, Tractinsky, & Vitale, 2000; Kimery & McCord, 2002). This group of studies focused on trust and privacy risk as main factors that affected Internet users' purchasing intention. However, a study that focuses on Internet users' personal information disclosure has yet to come. LaRose and Rifon (2004) found that the degree of perceptual involvement in privacy risk accounted for Internet users' information disclosure behavior, but their finding was mainly based on privacy issue excluding other factors that might affect Internet user's information disclosure.

Therefore, the present study investigates other factors as well as privacy concern, which might influence personal information disclosure by Internet users. Four factors are adopted as antecedents of personal information disclosure in this study: (1) Privacy concern of Internet users such as insecurity of information transmission or misuse of personal information, (2) Trust toward web sites based on the belief that users' personal information is secure, (3) Perceived value of benefit that is achieved from web sites, and (4) Perceived irksomeness or annoyance felt by Internet users when they have to complete personal information disclosure process. Applying valence framework (Lewin, 1943), the present study examines how expected value, annoyance of providing personal information, trust and privacy risk might contribute to personal information disclosure by Internet users.

## **THEORETICAL FRAMEWORK & HYPOTHESES**

### **Costs and benefits of information disclosure: Valence theory**

Consumers of marketing literature are considered to be rational in making purchase decisions. Being rational consumers means that consumers are aware of their goals and able to calculate their costs required to achieve those goals as well as benefits gained from purchasing certain products (Peter & Tarpey, 1975). Based on such assumption, the present study adopts valence theory arguing that consumers pay attention to positive and negative valence of certain products when they are making purchase decision (Lewin, 1943). According to this theory, consumers calculate net valence by subtracting expected cost from expected benefits, and attempt to maximize net return (Peter & Tarpey, 1975).

Benefits that can be gained from the Internet include easy access or saving time and cost spent on information or product search (Girard, Silverblatt, & Korgaonkar, 2002; Li, Kuo, & Russel, 1999; Jarvenpaa & Todd, 1997; Steinfield & Whitten, 1999; Kim, Ferrin, & Rao, 2003). However, these benefits can be endowed with diverse degrees of importance depending on how much value Internet users perceive from such benefits. That is, even the same benefit provided by certain web site has different importance according to how much value is endowed by Internet users to it. Therefore, if Internet users put high value on benefits such as access to information, communities or products that are existent at certain web site, they might be willing to disclose their personal information required by the web site in order to achieve these benefits. Thus, the present study uses perceived value of the benefit that can be gained from certain web site instead of perceived benefit itself.

On the other hand, providing personal information to web sites has costs. Surveys showed that most of the Internet users were concerned about the possibility of misuse or loss of their personal information as the most negative outcome when they were releasing their personal information (NTIA, 2000; Pew Research, 2000; Cole, 2001). However, in reality, perceived risk associated with personal information disclosure seems to have little impact on diverse online activities of Internet users (Han & Maclaurin, 2002; Miyazaki & Krishnamurthy, 2002).

Then what else could be costs when Internet users are releasing their personal information to web sites? The present study suggests that perceived annoyance or irksomeness that is accompanied by the labor of filling in or typing in personal information might be another factor hindering the disclosure of personal information by Internet users. Based on the assumption that providing personal information to web sites is a kind of labor to achieve future good, which does not necessarily come with pleasure, the present study proposes that Internet users might feel annoyed by the process of inputting personal information. Such perceived annoyance might work against personal information disclosure as another cost to be paid by Internet users.

Weighing the size of perceived value of the benefits and costs – perceived risk associated with personal information release and irksomeness of information supply process -, Internet users may decide whether they complete personal information disclosure process required by web sites or not. The larger the perceived value is compared to costs, the more willingly Internet users may provide their personal information.

### **Perceived risk and trust**

Internet users can perceive risk when doing diverse activities at web sites such as purchasing products, sending and receiving money, or disclose their personal information. However, this study limits the boundary of risk into that associated with personal information disclosure, which includes potential insecurity during the personal information transmission, demand of too much personal information that is not necessary or imperfect protection of personal information from being released or sold to other commercial companies (Clarke, 1999; Hoffman, Novak, & Peralta, 1999). The higher risk associated with personal information is perceived, Internet users may become less willing to release their personal information. In other words, Internet users' willingness to release personal information may be negatively related to the degree of perceived risk associated with the privacy of personal information.

Trust is known to be the most important factor that can reduce the privacy concern of Internet users (Brynjolfsson & Smith, 1999; McGraw H, 1999; Hoffman, et al., 1999). Trust toward certain web site is influenced by people's perception or attitude toward the company that owns the web site. Established brand name, perceived size and reputation of the company could work as a signal that the web site can be trusted or not (Doney & Cannon, 1997; Jarvenpaa, et al., 2000). High level of trust has been found to increase favorable or cooperative behavior of consumers toward the requests of companies (Anderson & Narus, 1990; Schurr & Ozanne, 1985), since trust is known to reduce the perceived risk of being mistreated by them

(Anderson & Weitz, 1989). The less perceived risk associated with their personal information also lead Internet users to willingly complete the personal information disclosure process required by web sites.

*H1: Perceived risk associated with personal information disclosure will reduce the willingness to complete the personal information disclosure process.*

*H2a and H2b: Trust toward a web site will a) reduce the perceived risk associated with personal information disclosure, and b) increase the willingness to complete the personal information disclosure process.*

### **Perceived irksomeness of information disclosure process**

Internet has increased people's convenience by enabling them to search for information or buy products without going out of their home. However, Internet requires other type of labor from Internet users in order to make up for the absence of physical presence; to provide personally identifying information. Providing personal information ranges from simple ones such as filling in name and e-mail address to complicated ones such as providing first and last name, telephone number, postal address, hobbies, interests, and even secure information such as social security number or credit card number. The former case might not cause much pain to Internet users, but the latter might take more work and time to fill in. Therefore, it can be considered as a type of labor rather than a leisure activity, since providing personal information to web sites may cause annoyance or irksomeness to Internet users. Labor is not something people find pleasure from doing it but rather something that needs painful exertion of mind or body to achieve certain future goal (Jevons, 1888). Therefore, once Internet users perceive information disclosure process as irksome and annoying, they may give up before they complete the personal information disclosure process. In other words, Internet users' perception of annoyance or irksomeness accompanied by the process of providing personal information may work against the willingness of releasing personal information by Internet users.

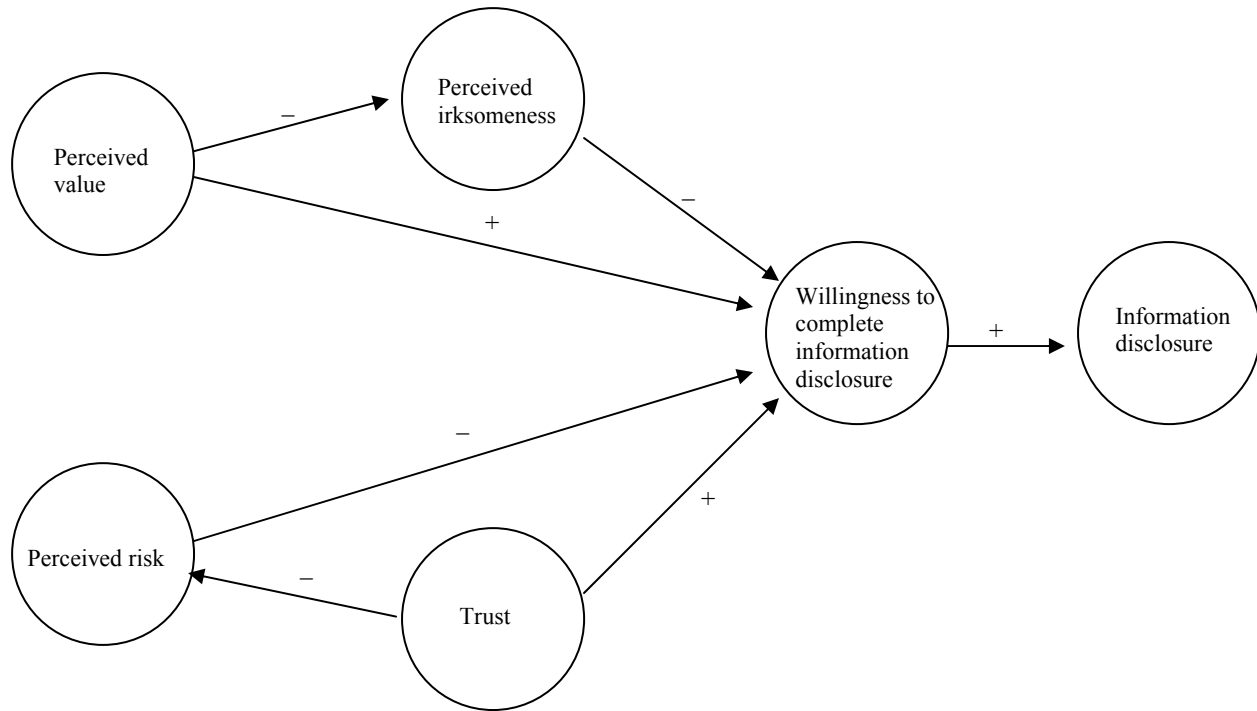
If Internet users perceive that benefits to be gained from certain web site are valuable, they might be willing to go through the annoyance of typing personal information to achieve it. On the other hand, if Internet users think that there is not much benefit to be gained from the web site, even small amount of personal information disclosure process might be perceived as annoying labor. Thus, the greater value Internet users perceive on benefits, the perceived degree of irksomeness or annoyance of providing personal information might be alleviated. The perceived value of benefits that can be achieved from web sites can also directly increase Internet users' willingness to involve in the information disclosure process.

*H3: Perceived irksomeness associated with the personal information disclosure will reduce the willingness to complete the personal information disclosure process.*

*H4a and H4b: Perceived value a) reduce the irksomeness associated with the personal information disclosure and b) increase the willingness to complete the personal information disclosure process.*

*H5: Willingness to complete the personal information disclosure process will increase the actual disclosure of personal information*

Figure 1 presents a proposed research model summarizing the causal relationships among perceived value, perceived cost (perceived risk and irksomeness), trust and willingness to complete personal information disclosure.



**Figure 1. Hypothesized personal information disclosure model**

Note: + and – in the model show the direction of relationship between two factors.

## RESEARCH METHODS

### Sampling and data collection procedure

Students at a large Midwestern university are going to be recruited based on their voluntary participation decisions. All the participants are told to fill out online survey for 2 weeks from March 8<sup>th</sup> to 22<sup>nd</sup>. The survey is going to ask their Internet usage experience assuming that most of the participants have experience of releasing their personal information to receive service or be a member of certain web sites. However, for those who have not had any experience of disclosing their personal information, they will be asked to visit any web site that requires personal information to allow access to its service during the survey period. All the participants will receive extra credits as a token of appreciation.

### Measurements

*Perceived value* will be measured by five items that are describing how much value Internet users put on the benefits that are gained from the web sites they visit. The *Perceived irksomeness* will be measured by seven items that are newly invented for this study. *Trust* will be measured by four items that were suggested by previous studies (Gefen, 2000; Jarvenpaa, et al., 2000). *Perceived risk* will be measured by four items that were borrowed from Jarvenpaa et al.'s study (2000). *Willingness to complete personal information disclosure process* is composed of three items that are newly invented for the present study, which measure the intention of personal information disclosure by Internet users. *Information disclosure* will be measured by one dichotomy item asking whether participants actually disclosed all the personal information that is necessary to register or become a member of certain web sites or failed to do it. The following Table 1 lists all the research questionnaires that will be used for online survey.

Construct	Items	Source
Perceived value	I really want to be a member of web site X to gain the service (e.g. information, community membership or products) it provides.	Newly invented
	It is really important for me to register or become a member of web site X.	Newly invented
	The service I want from web site X is not available at any other web sites.	Newly invented
	The benefits I can get from web site X is valuable to me.	Newly invented
	Web site X could provide me the benefits I want (e.g. information, community membership or products)	Newly invented
Perceived irksomeness	It takes too much time to provide my personal information web site X requires.	Newly invented
	It is a lot of work to type my personal information web site X requires.	Newly invented
	It is annoying to provide all the personal information the web site X requires.	Newly invented
	It is a tedious job to fill in personal information at the web site X.	Newly invented
	It is bothersome to type all the personal information the web site X requires.	Newly invented
	I do not mind typing in my personal information to web site X.	Newly invented
	It is worthwhile to provide my personal information to web site X.	Newly invented
Trust	I trust web site X to do the job right in handling my personal information	(Gefen, 2000; Jarvenpaa et al., 2000)
	I trust web site X in dealing with my personal information	(Gefen, 2000; Jarvenpaa et al., 2000)
	The web site X is trustworthy	(Gefen, 2000; Jarvenpaa et al., 2000)
	I believe that web site X will not misuse any of my personal information.	Newly invented
Perceived risk	I find it necessary to be cautious with web site X in releasing my personal information	(Jarvenpaa et al., 2000)
	How would you characterize the decision of releasing your personal information at the web site X? (7: significant opportunity, 1: Significant risk)	(Jarvenpaa et al., 2000)
	What best describes a decision to release your personal information at the web site X? (7: very positive, 1: very negative)	(Jarvenpaa et al., 2000)
Willingness to complete information disclosure process	I am likely to release my personal information to register or be a member of web site X.	Newly invented
	I will release my personal information if web site X needs it.	Newly invented
	I intend to complete information disclosure process to get what I want from web site X.	Newly invented
Information disclosure	1: I have released all the personal information web site X required and became a member of the web site 2: I have not provided all the personal information web site X required, so failed to become a member of the web site	Newly invented

Table 1. Survey questionnaires and sources

### Data analysis

The hypothesized model will be tested using Bentler's (1989) EQS structural equation program. All the multi-item scales for five latent factors are treated as a single indicator of its corresponding latent factor by taking the mean value of all the items (Bandalos, 2002). Therefore, random measurement error will be corrected by setting the random error variance associated with each construct equal to the product of its variance and the quantity one minus its estimated reliability (Bollen, 1989). To report the results of structural equation modeling, this study will refer to the guidelines suggested by Raykov,

Tomer, and Nesselrode (1991). In examining the goodness-of-fit, this study will include chi-square and four major model fit indices including Bentler and Bonnet's (1980) Normed Fit Index (NFI), Tucker & Lewis' Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). If NFI, NNFI and CFI exceed .90, then it is considered to be acceptable fit of the tested model. To be a good model fit, however, those three indices should be over .95. A successful model should also have a RMSEA of .06 or lower (Bentler, 1990; Bollen, 1990).

## EXPECTED CONTRIBUTIONS OF THE STUDY

The present study is expected to contribute to understanding new type of Internet user behavior by adopting unexplored variables. First of all, it adopts Internet users' willingness to complete the personal information disclosure process as dependent variable, which has not been explored enough by previous Internet user behavior studies. Internet users disclose their personal information with the expectation that they can get benefits they want (e.g. service, information or products) from web sites. Therefore, to Internet users, providing personal information to web sites might be perceived as a course or process to go through in order to achieve future benefits rather than reciprocal interaction with web sites such as self-disclosure (Jourard, 1971) in interpersonal communication.

Perceived value is another unique variable used in the present study, which is distinguished from perceived benefits. Instead of using benefits, which are objective and assumed to provide the same amount of value to Internet users, the present study allows the possibility that Internet users perceive diverse degrees of value toward the same benefit provided by web sites. According to how much value or importance is endowed to the benefit, Internet users might be more or less willing to complete the personal information disclosure process. That is, the more value is perceived by Internet users toward certain benefit, the less emphasis is placed on the costs and labor they need to pay to achieve the benefit.

Finally, irksomeness or annoyance accompanied by personal information disclosure process has not been considered as one of the factors influencing Internet users' decision on their personal information disclosure. In reality, some Internet users might not finish personal information disclosure process simply because they are tired or annoyed from typing in their personal information required by web sites. Not all the Internet users might be always concerned about their privacy risk every time they provide their personal information to web sites (Han & Maclaurin, 2002; Miyazaki & Krishnamurthy, 2002).

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