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Exploring the Impact of Emotions on Internet Users' Perceived Privacy

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ABSTRACT

The study of information privacy in e-commerce is still in its infancy. Current studies have mainly focused on consumers' general concern for privacy. They have largely ignored situational factors (such as emotions, website design, etc) and the potential influence of situational factors in shaping Internet users' perception about the level of privacy (or privacy belief) ensured by online vendors. This study draws on cognitive congruency theory to explore the impact of emotions on Internet users' privacy beliefs. It finds that, for an unfamiliar website, a holistic shopping experience triggers various emotions. These emotions (likings and frustration) then act as the primary determinants of privacy belief. Privacy concern is a less important factor in shaping privacy beliefs. Trust belief and privacy belief then serve as primary antecedents of intention to give out personal information. Therefore, in the future, privacy researchers should devote more efforts to studying privacy belief and the impact of situational factors.

Keywords

Privacy belief, privacy concern, emotion, e-commerce, cognitive appraisal.

INTRODUCTION

Information privacy has been identified as a critical factor that may hamper the rapid growth of e-commerce (U.S. Public Interest Research Group). According to Hoffman et al. (Hoffman, Novak and Peralta, 1999a), "almost 95% of consumers have declined to provide personal information to Web sites". Despite the wide recognition of the importance of privacy, research on privacy in e-commerce is still in its infancy. Previous studies have examined privacy mainly as a general personal trait (privacy concern) (Malhotra, Kim and Agarwal, 2004; H. J. Smith, Milberg and Burke, 1996; Stewart and Segars, 2002). However, privacy decisions made by individuals are often found to be only weakly influenced by privacy concern, and may even be contradictory. For example, Malhotra et al. (2004) found no direct relationship between privacy concern and behavior intention. In the survey by Acquisti and Grossklags (2005), 41% of individuals with high privacy concern rarely read private policies containing the promised rules and safeguards to be offered. Therefore, it is not enough to focus only on privacy concerns. These previous studies have generally ignored situation-specific factors and their potential influence in shaping Internet users' perception about the level of privacy ensured by online vendors (or privacy belief). In the context of e-commerce, these situational factors (such web interface, functionality, etc) may play an important role in shaping online shoppers' perceptions about the level of privacy offered by a company (privacy belief). Further examination of consumers' specific privacy belief with respect to vendors is warranted.

In addition, previous studies have been only conducted from a rational perspective. They often fail to explain inconsistent behaviors related to privacy (Acquisti and Grossklags, 2005). Limitations of the rational perspective have been elaborated in (Acquisti and Grossklags, 2005). People may lack complete information or possess limited processing capability to make rational privacy decisions. Therefore, they may use a simplified mental mode and rely more on emotional cues to make decisions. However, the potential impacts of emotions on privacy related decisions and behaviors have not been examined at all, in spite of the fact that emotions have been found to influence consumers' satisfaction and shopping decisions. Kim et al. (2002) have concluded that delight is one important dimension of e-commerce which influences customer satisfaction. Bhattacharjee (2001) studied online banking and found that consumers' satisfaction and continuance intention are related to four emotion pairs: pleased/displeased, frustrated/contented and terrible/delighted. Privacy belief, as a higher order cognitive process, may also be explained by online shoppers' emotions.

The purpose of this study is threefold. First, we will explore the antecedents of online consumers' emotions. The cognitive evaluations of a website (cognitive appraisals) that are relevant to online privacy concern will be examined. Second, we will explore the potential role of online consumers' emotions on the formation of privacy belief. Third, we will examine the impact of privacy belief on behavior intention. Through this study, we want to answer three main questions: 1) How do cognitive appraisals formed in an online environment influence emotions? 2) Can emotions explain some of the variance of privacy belief from an irrational perspective? 3) How will privacy belief influence behavior intention (intention to give personal information)?

LITERATURE REVIEW AND RESEARCH MODEL

The theories underlying our study are elaborated in the following subsections. The resulting hypotheses are summarized in the research model shown in Figure 1.

Privacy, Privacy Belief and Trust Belief

Privacy concern reflects a person's general disposition to privacy invasion. During the shopping process, a consumer further develops his/her *privacy belief* specific to a particular vendor. This perceived privacy is the subjective probability that consumers believe that their private information is protected as expected (Metzger, 2004; Pavlou and Chellappa, 2001). Here, privacy belief is a more direct predictor of consumers' behavior intention toward a particular vendor than privacy concern. According to the Theory of Reasoned Action (Fishbein and Ajzen, 1975), salient belief mediates the impact of personal traits on behavior intention. Therefore, we focus on privacy belief to gain a better understanding of privacy related decisions and behaviors. Consumers with high privacy belief are more likely to perceive that their information privacy will be respected and may be more inclined to release personal information and purchase products or services.

H1: Privacy belief has a positive impact on behavior intention.

H2: Privacy belief mediates the impact of privacy concern on behavior intention.

Trust is intertwined with privacy issues in determining information disclosure and purchasing activity in the online environment (Malhotra et al., 2004; Metzger, 2004). Privacy statements have been found to increase trust in online environment (Palmer, Bailey and Faraj, 2000; Pennington, Wilcox and Grover, 2003). Metzger (2004) found that perceived level of Web site privacy protection is positively related to the trust belief in the Web site. Therefore, privacy belief in a Web site may foster the trust belief of the Web site.

H3: Privacy belief has a positive impact on trust belief.

Trust belief has been found to be one of the key determinants to the disclosure of personal information in an uncertain environment (Jarvenpaa and Tractinsky, 1999). In online shopping, consumers face uncertainties related to product quality as well as the consequences of releasing personal information, which may increase the perceived risk of online shopping (Jarvenpaa and Tractinsky, 1999). Trust plays a critical role in helping consumers overcome perceptions of risk. Consumers with high trust beliefs are more likely to release personal information and make purchases (McKnight, Choudhury and Kacmar, 2002). Therefore, we have

H4: Trust belief has a positive impact on behavior intention to give out personal information.

Emotions and Cognitive Appraisals

According to cognitive appraisal theory, we often form some cognitive appraisals about the environment. Appraisals of the environment are then expected to elicit appropriate emotions that pull us toward good or push us away from bad things (Arnold, 1960; C. A. Smith and Kirby, 2001). Although many dimensions of cognitive appraisals have been identified (Roseman, Antoniou and Jose, 1996; C. A. Smith and Ellsworth, 1985), we selected two most examined cognitive appraisals to address the online situation. They are motive-consistency and probability. We selected five emotions that were studied in the context of online consumers in previous research, including liking, joy, dislike, frustration, and fear (Ethier, Hadaya, Talbot and Cadieux, 2004).

Motive consistency is an appraisal of the extent to which a situation is in line with one's motive, and whether the situation can help achieve one's goal. Motive consistency is the primary dimension that differentiates positive emotions from negative emotions. For example, an online customer may feel frustrated if (s)he is unable to search for a product in a vendor's website. In the context of online shopping, motive consistency reflects the consumers' holistic shopping experience (Ethier et al., 2004). A favorable shopping experience is expected to increase the intensity of positive emotions while the more unfavorable shopping experience should increase the intensity of negative emotions. Therefore, we have:

H5: Motive consistency has a positive impact on the intensity of liking (H_{5a}), and joy (H_{5b}).

H6: Motive consistency has a negative impact on the intensity of frustration (H_{6a}), fear (H_{6b}) and dislike (H_{6c}).

Probability is the second cognitive appraisal dimension used in our study, which is the cognitive appraisal of the uncertainty level of the situation. Online environment is computer-mediated. Social cues commonly used by consumers to ascertain the exchange relationship are absent, resulting in a greater level of uncertainty. According to Roseman (1996), probability appraisal is related to joy and fear. A greater certainty in a situation is expected to increase joy while a more uncertain situation is expected to enhance fear. Therefore, we have

H7: Probability has a positive impact on the intensity of joy.

H8: Probability has a negative impact on the intensity of fear.

Emotions, Privacy Beliefs and Trust Beliefs

Emotion is closely intertwined with cognition. Cognition is about how we think. Personal belief is one type of cognition. It has been widely recognized that our feelings influence our thinking, judgments, and decisions. Emotions serve as feedback about the environment. Positive affect can inform individuals that the current environment is safe while negative affective states can signal a problematic environment (Petty, DeSteno and Rucker, 2001). The feedback from affect should have a direct impact on people's privacy belief since privacy is an expression of the core value security (Moor, 1997). Affect is generally found to have a congruent effect on cognition (Forgas, 2001). People in positive affective state tend to make more positive judgments than people in negative state. Therefore,

H9: Liking (H_{9a}) and joy (H_{9b}) tend to have a positive impact on privacy belief.

H10: Frustration (H_{10a}), fear (H_{10b}) and dislike (H_{10c}) tend to have a negative impact on privacy belief.

H11: Liking (H_{11a}) and joy (H_{11b}) tend to have a positive impact on trust belief.

H12: Frustration (H_{12a}), fear (H_{12b}) and dislike (H_{12c}) tend to have a negative impact on trust belief.

Covariates

Besides the factors mentioned above, individual differences may potentially influence Internet users' behavior related to privacy issues. We include five personal factors in our model as covariates, namely sex (Milne and Rohm, 2000), age (Culnan, 1995), Internet experience (Phelps, Nowak and Ferrell, 2000), whether the subject has been the victim of privacy invasion in the past (Malhotra et al., 2004), and media exposure about incidents of privacy invasion (H. J. Smith et al., 1996).

METHODOLOGY

An online survey was administered to student volunteers at a major Midwestern U.S. university. Items used to measure constructs were drawn from previous literature and re-worded slightly for the online environment. Motive consistency was measured using four items developed by Éthier, et al. (2004). The instrument to measure probability was derived from Roseman et al. (1996). Joy, liking, dislike and fear were measured by items from Shaver et al (1987). Frustration was measured using items adapted from Peters et al (1980). Privacy belief was measured using items from Pavlou and Chellappa (2001). Trust belief was measured using the scale developed by Pennington et al. (2003). Behavior intention (intention to give personal information) was measured by scales after Malhotra et al (2004) and MacKenzie and Spreng (1992). Privacy concern was measured by three items from Malhotra et al's (2004) global information privacy concern scale.

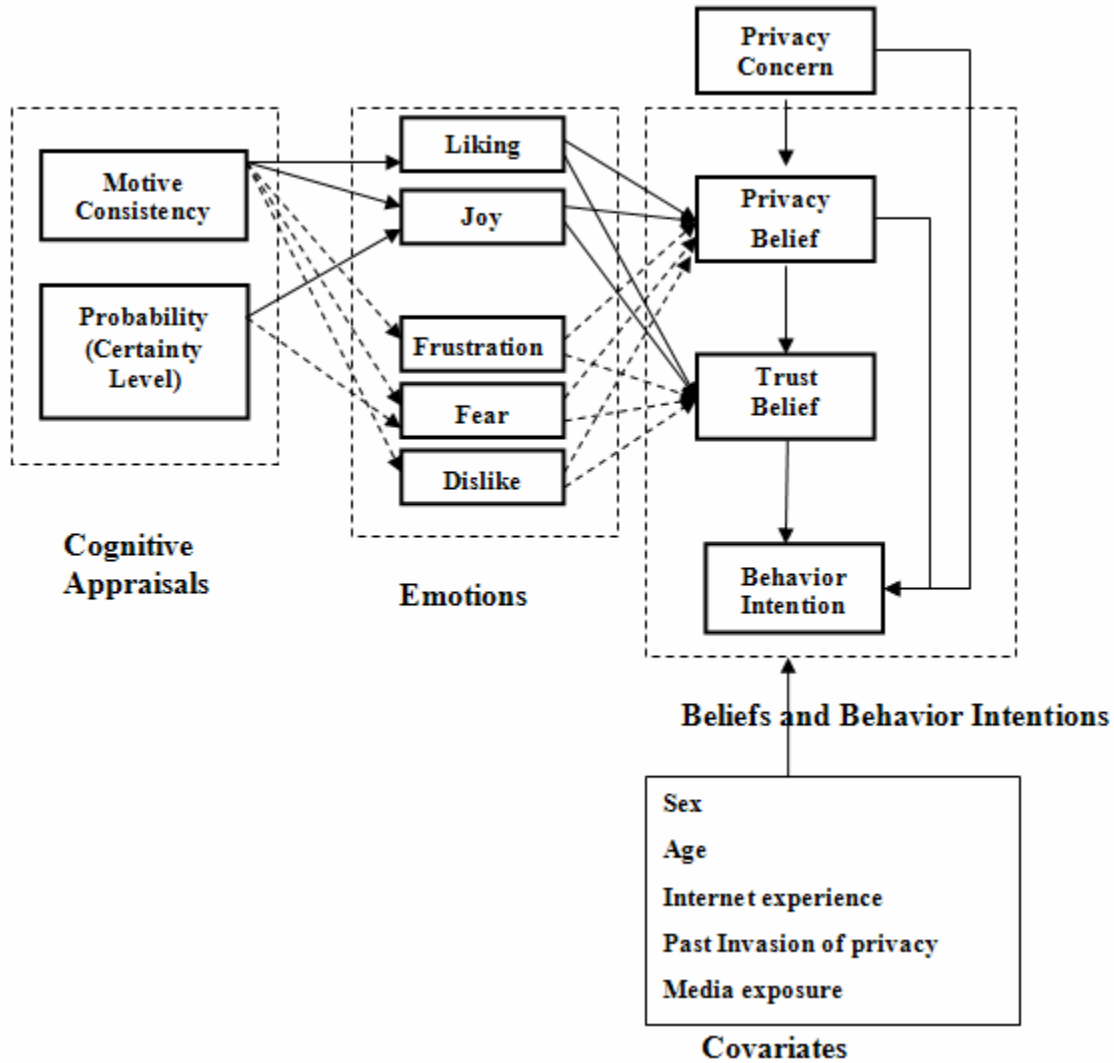


Figure 1. Research Model.

DATA ANALYSIS

164 usable responses were included in the preliminary data analysis. Partial least squares (PLS), a structural equation modeling technique, was chosen to examine our measurement model and structural model. Before testing hypothesized relationships among latent constructs, we first examined convergent validity, reliability and discriminant validity of the measurement model. All indicators have loadings above 0.6 except one negatively-worded item used to measure privacy belief. That item was then dropped from the following analysis. The remaining items exhibit sound convergent validity. All scales are reliable with CR above 0.7 and AVE above 0.5. The square root of AVE of each latent construct was found to be greater than the correlations between that construct and any other constructs, suggesting discriminant validity. A complete data analysis is available on request.

CONCLUSIONS

This study explored the impact of Internet users' emotions on the formation of their privacy beliefs. Our results suggest that, for an unfamiliar website, shopping experience in a holistic sense (motive consistency) triggers positive and negative emotions. These emotions appear to be primary determinants of privacy beliefs. Privacy concern appears to be less important for forming privacy belief when subjects are interacting with a specific website. Therefore, privacy researchers should devote more efforts to studying privacy beliefs and situation-specific factors that may influence privacy beliefs such as emotions, web design, etc. Our findings have important practical implications for online vendors. Findings of this study suggest that, to enhance perceived privacy, online vendors should pay attention to Internet users' emotions, especially liking and frustration during the shopping experience.

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