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# Personalization—privacy paradox and consumer conflict with the use of location-based mobile commerce



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#### ABSTRACT

This study empirically explored consumers' response to the personalization—privacy paradox arising from the use of location-based mobile commerce (LBMC) and investigated the factors affecting consumers' psychological and behavioral reactions to the paradox. A self-administered online consumer survey was conducted using a South Korean sample comprising those with experience using LBMC, and data from 517 respondents were analyzed. Using cluster analysis, consumers were categorized into four groups according to their responses regarding perceived personalization benefits and privacy risks: indifferent (n=87), personalization oriented (n=113), privacy oriented (n=152), and ambivalent (n=165). The results revealed significant differences across consumer groups in the antecedents and outcomes of the personalization—privacy paradox. Multiple regression analysis showed that factors influence the two outcome variables of the personalization—privacy paradox: internal conflict (psychological outcome) and continued use intention of LBMC (behavioral outcome). In conclusion, this study showed that consumer involvement, self-efficacy, and technology optimism significantly affected both outcome variables, whereas technology insecurity influenced internal conflict, and consumer trust influenced continued use intention. This study contributes to the current literature and provides practical implications for marketers and retailers aiming to succeed in the mobile commerce environment.

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#### 1. Introduction

Location-based mobile commerce (LBMC) using wireless connectivity and technologies that automatically detect user's current location information have emerged as effective marketing and commerce channels aiding location-referent transactions between businesses and mobile consumers (Kourouthanassis & Giaglis, 2012; Wyse, 2008). However, from a consumer perspective, LBMC is a double-edged sword. It increases both personalization benefits and privacy risks perceived by users leading to a dilemma in consumer choice, that is, the personalization—privacy paradox (Awad & Krishnan, 2006; Grossklags & Acquisti, 2007; Guo, Sun, Yan, & Wang, 2012; Lee & Cranage, 2011; Sheng, Nah, & Siau, 2008; Sutanto, Palme, Tan, & Phang, 2013; Xu, Luo, Carroll, & Rosson, 2011).

Much of the extant literature on the personalization—privacy paradox addresses a broad range of subjects. While some works hold that privacy takes precedence over all other values including

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personalization benefits (Culnan & Bies, 2003; Phelps, D'Souza, & Nowak, 2001), some other works report that privacy concerns should not prevent access to the benefits of personalized services (Grossklags & Acquisti, 2007; Hann, Hui, Lee, & Png, 2002). Certain studies claim that the decision to provide personal information or access personalized services is rational and the result of a "privacy calculus" (Dinev & Hart, 2006), whereas others state that such decisions are heuristically made based on immediate gains (Sundar, Kang, Wu, Go, & Zhang, 2013).

The disparity in the existing literature suggests that generalizing user responses to the personalization—privacy paradox can be difficult. Thus, this study argues that consumer response to the paradox differs by consumer characteristics. The objectives of this study are to explore consumer response to the personalization—privacy paradox, identify significantly different response patterns, investigate the antecedents of different response patterns, and examine the result of such response patterns. The research questions addressed are as follows:

**RQ1**: What are the different types of consumer groups that can be identified according to responses to the personalization—privacy paradox?

**RQ2**: How do the consumer groups differ by the antecedent (i.e., consumer involvement, consumer trust, self-efficacy, and technology readiness) and outcome (i.e., internal conflict and continued use intention) of the paradox?

**RQ3**: What factors affect consumers' internal conflict and continued use intention of LBMC?

This study extends the previous literature on the personalization—privacy paradox in two aspects. First, prior studies found that consumer responses to the personalization-privacy paradox vary depending on the service characteristics and contexts such as the type of personalized service (Awad & Krishnan, 2006), different ways and degrees of personalization (Sutanto et al., 2013; Xu et al., 2011), and information type (Jena, 2015). Drawing on these prior studies, this study aims to show that consumer characteristics, as well as the service context, are important determinants of the personalization—privacy paradox.

Second, previous studies addressed the behavioral outcomes of the personalization—privacy paradox, such as the intention to use or accept services; however, a paradoxical situation can evoke negative psychological consequences such as stress and confusion (Büschel, Mehdi, Cammilleri, Marzouki, & Elger, 2014; Levine & Wiener, 2014). In this study, both psychological (consumer's internal conflict) and behavioral (intention to use service) outcomes of the personalization—privacy paradox are investigated to compare and contrast the factors influencing the two outcome variables.

#### 2. Literature review and model development

#### 2.1. Personalization—privacy paradox

The successful personalization of services depends on two factors: business abilities to acquire and process consumer information and consumer willingness to share information and use personalized services (Chellappa & Sin, 2005). Businesses try to obtain as much valuable consumer information as possible to provide personalized and customized products and services.

However, the practicalities are more complicated if you consider the consumers' perspective. Consumers look for personalized products and services and are willing to provide personal information for benefits such as discounts, personalized information, and services. However, they prefer to divulge as little information as possible because of the risk of privacy invasion (Culnan & Bies, 2003; Sheng et al., 2008). Because gaining personalization benefits simultaneously increases privacy risk, consumers face a dilemma between seeking personalization benefits and avoiding privacy risks (Awad & Krishnan, 2006; Sutanto et al., 2013).

While terms used to explain the personalization—privacy paradox differ, such as benefit versus risk, gain versus loss, and approach versus avoidance, the paradox is a source of internal consumer conflict. Empirical studies have suggested that while personalization has a positive effect, privacy risk negatively affects consumers' intention to use personalized services (Awad & Krishnan, 2006; Sheng et al., 2008; Sutanto et al., 2013; Treiblmaier & Pollach, 2007), location-aware marketing (Xu et al., 2011), social networking services (Utz & Kramer, 2009), and the intention to provide personal information to use these services (Norberg, Horne, & Horne, 2007).

Awad and Krishnan (2006) found that the relative importance of personalization benefits and privacy risks vary depending on the service context. In the case of personalized services, the obvious benefits to consumers outweigh the potential risks of privacy infringement, whereas the opposite holds true for personalized advertisements. Similarly, Sutanto et al. (2013) suggested that consumer response to the personalization—privacy paradox

depends on the personalization process or the level of gratification provided by personalized information.

The personalization—privacy paradox is increasingly seen in situations where personal information is collected and used through mobile devices. The one-on-one direct relationship established between a smartphone and its user enables identification, differentiation, and interaction with individual consumers and offers an opportunity to provide personalized information without time or location constraints (Sutanto et al., 2013). In the past, the main source of personalized information was consumers; however, today, a more accurate consumer profile can be extracted by combining personally identifiable information and multimodal sensor data from smartphones (Christin, Reinhardt, Kanhere, & Hollick, 2011). The expansion in the use of mobile devices and related services has led to an increase in both personalization benefits and privacy risks, and the internal conflict of consumers can be intensified in the mobile environment.

#### 2.2. Antecedents of the personalization—privacy paradox

Conducting an interdisciplinary review of the literature on information privacy, Smith, Milberg, and Burke (2011) argued that the most helpful positivist studies examine differences in antecedents and outcomes as a function of privacy-related variables.

#### 2.2.1. Consumer involvement

Involvement is defined as a person's perceived relevance of an object based on inherent needs and values (Zaichkowsky, 1985). Many studies have revealed that the degree of consumer involvement is likely to affect information search, information processing, and decision-making (Petty & Cacioppo, 1984; Tam & Ho, 2005). According to Swilley and Goldsmith (2007), consumer involvement in mobile commerce heightens the perception of personalization benefits, such as interesting information or coupons, and has significant positive effects on the intention to adopt mobile commerce. This suggests that the benefits and risk perceptions of LBMC may differ by the level of consumer involvement in services (Gao, Sultan, & Rohm, 2010).

#### 2.2.2. Consumer trust

In online shopping environments with high uncertainty, the level of trust in an online seller influences consumers' decisions to engage in transactions (Culnan & Bies, 2003; Hoffman, Novak, & Peralta, 1999). Consumer trust in service providers positively influences the perceived personalization benefits but negatively affects the perceived risk of privacy and security (Liao, Liu, & Chen, 2011). In previous studies on LBMC, trust was found to directly reduce privacy concerns (Junglas & Spitzmuller, 2005) and indirectly increase consumer satisfaction and service use intention (Xu, Teo, & Tan, 2005).

#### 2.2.3. Self-efficacy

Self-efficacy in the context of privacy is the perception of an individual's ability to protect personal privacy (Chen & Chen, 2015). Some previous studies reported that higher self-efficacy lowers privacy risks, consistent with the privacy calculus model, and leads to greater willingness to provide personal information for the use of personalized services (Wasko & Faraj, 2005). Sundar and Marathe (2010) believe that self-efficacy is a predictor of consumer behavior related to technology acceptance and application because consumers with higher self-efficacy are better able to control technology and predict its consequences. That is, higher self-efficacy enables consumers to counteract the negative outcomes of inherently risky actions.

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