

## INTRINSIC AND EXTRINSIC MOTIVATIONS AFFECTING IMPULSE-BUYING TENDENCY IN MOBILE SHOPPING

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I investigated whether or not the components of the technology acceptance model (TAM), such as cognitive and affective factors, could predict impulse-buying tendency and shopping attitude in a mobile shopping environment. Participants were 234 consumers who had experience of mobile shopping. I conducted this survey using an online survey system provided by a research company. Results showed that cognitive absorption as an affective factor (intrinsic motivation) was related positively to cognitive factors (extrinsic motivations). In addition, cognitive absorption had a significantly positive influence on impulse-buying tendency. Among cognitive factors of the TAM, perceived usefulness affected impulse-buying tendency positively; however, perceived ease of use did not significantly influence impulse-buying tendency. Lastly, I found impulse-buying tendency affected mobile shopping attitude positively. My results suggest that showing an impulse-buying tendency in a mobile shopping environment has a positive impact on shopping attitude.

*Keywords:* intrinsic motivation, cognitive absorption, extrinsic motivation, perceived ease of use, perceived usefulness, impulse-buying tendency, mobile shopping.

Smartphones have become the predominant driver of growth in mobile e-commerce (m-commerce) transactions (Criteo, 2017). The number of users of smartphones is expected to increase to 2.08 billion in 2016 and to 2.66 billion in 2019 (“Number of Smartphone Users,” 2016). Korea Internet Promotion Agency (2015) reported that 52.2% of mobile device users in South Korea use mobile shopping and that the proportion of mobile shopping usage (29.1%) is more than twice that of online shopping usage (14.3%).

To anticipate mobile technology adoption, previous researchers have tried to establish the specific features of m-commerce (H.-W. Kim, Chan & Gupta, 2007;

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Kleijnen, de Ruyter, & Wetzels, 2007; S. Lee & Park, 2006; Wu & Wang, 2005). Cognitive (or extrinsic) motivations and affective (or intrinsic) motivations could affect technology acceptance, and affective aspects of mobile technology are significantly related to mobile shopping attitude (Kulviwat, Bruner, Kumar, Nasco, & Clark, 2007; Nysveen, Pedersen, & Thorbjørnsen, 2005; Park, 2006; Venkatesh, 1999).

One of the features of mobile shopping is a strong impulse-buying tendency. Schwartz (2012) noted that the quick responsiveness and convenience of mobile shopping makes consumers more impulsive. However, does experiencing a tendency toward impulse buying when mobile shopping have only negative impacts on consumers? Consumers can buy various products using mobile shopping and even enjoy impulse buying when they shop using mobile channels (Shang, Chen, & Shen, 2005).

Mobile technology adoption has been studied by previous researchers (Agrebi & Jallais, 2015; Yang, 2010; Zheng, Liu, & Zhao, 2013), but the influence of the technology acceptance model (TAM) on mobile shopping and the influence of impulsive purchasing, which is a main feature of mobile shopping, have been insufficiently researched. Thus, in this study I explored whether or not extrinsic and intrinsic motivation for mobile shopping could affect the consumer's impulse-buying tendency positively. Furthermore, I also explored whether or not a consumer's impulse-buying tendency level affected their shopping attitude and intention to use mobile shopping continually.

### Technology Acceptance Model

Researchers have used the TAM to predict adoption of m-commerce (Ko, Kim, & Lee, 2009). The important components of the TAM for predicting acceptance of technology include perceived ease of use and perceived usefulness (Igarria, Guimaraes, & Davis, 1995; Shang et al., 2005). *Perceived usefulness* is defined as the subjective availability of a system to improve performance, and *perceived ease of use* means the degree to which a user is expected to be free to use a system (Davis, Bagozzi, & Warshaw, 1989). Perceived ease of use of mobile shopping can be related to ease of access to mobile sites and ease of navigating a mobile site (Yang, 2010). These two TAM components are expected to be significant in diffusion of new technology and services, such as mobile shopping (Venkatesh, 1999; Yang, 2010). Thus, perceived ease of use and perceived usefulness could affect a consumer's attitude toward using mobile shopping. Therefore, I formed the following hypotheses:

**Hypothesis 1:** Perceived ease of use will have a positive effect on mobile shopping attitude.

**Hypothesis 2:** Perceived usefulness will have a positive effect on mobile shopping attitude.

The effects of perceived ease of use on perceived usefulness have been investigated by many researchers (e.g., Fenech, 1998; Ko et al., 2009). Segars and Grover (1993) identified that perceived ease of use affects perceived usefulness directly. In mobile shopping, customers who feel ease of use would be likely to consider that the shopping is useful (Agrebi & Jallais, 2015). Therefore, I proposed the following hypothesis:

**Hypothesis 3:** Perceived ease of use will have a positive effect on perceived usefulness in mobile shopping.

### **Intrinsic Motivation and Cognitive Absorption**

*Intrinsic motivation* refers to behavior that is evoked by pleasure, joy, and fun (M. K. O. Lee, Cheung, & Chen, 2005). People can be motivated to use m-commerce because of intrinsic rewards as well as perceived usefulness (Ryan & Deci, 2000). Moreover, Agarwal and Karahanna (2000) suggested that cognitive absorption involves being deeply immersed in a system and that, through it, consumers can experience temporal dissociation, heightened enjoyment, and curiosity, all various forms of intrinsic motivation.

In this research, I have considered the *cognitive absorption* variable as an intrinsic motivation, as it is a state of perceived playfulness. Some researchers have suggested that the user only experiences cognitive absorption if the cognitive effort required is sufficient to enhance interest but not so high that they are distracted by the technological tools (Finneran & Zhang, 2003; Kiili, 2005). However, in a mobile situation, cognitive absorption can be experienced by consumers in a state of deep involvement (Agarwal & Karahanna, 2000). Furthermore, Saadé and Bahli (2005) suggested that cognitive absorption could be an important predictor of technology use and acceptance. Thus, cognitive absorption could influence perceived ease of use, perceived usefulness, and impulse-buying tendency in mobile shopping. Once cognitive absorption is motivated intrinsically, the perceived cognitive burden related to the task is reduced (Shang et al., 2005). If the cognitive burden is reduced, perceived ease of use would increase. Therefore, I formed the following hypothesis:

**Hypothesis 4:** Consumers' cognitive absorption will have a positive effect on the perceived ease of use in mobile shopping.

Cognitive absorption increases perceived usefulness and the level of technology acceptance (Saadé & Bahli, 2005; Shang et al., 2005). If consumers are absorbed in mobile shopping, they would be likely to consider the system they are using to be useful. Thus, this led to my next hypothesis:

**Hypothesis 5:** Consumers' cognitive absorption will have a positive effect on perceived usefulness in mobile shopping.

### Impulse-Buying Tendency

According to Stern (1962), *impulse buying* is the same as unplanned buying and refers to purchasing behaviors that the consumer has not planned to carry out. Some scholars have identified cognitive and affective factors that affect impulse buying positively or negatively (Parboteeah, Valacich, & Wells, 2009). Zhang, Prybutok, and Koh (2006) have suggested that consumers tend to be more prone to impulse buying in the Internet environment.

Researchers have shown that a tendency to impulse buying is influenced by hedonic needs, such as fun, novelty, and surprise (Rook & Fisher, 1995; Thompson, Locander, & Pollio, 1990). Eroglu, Machleit, and Davis (2001) suggested a categorization of website characteristics that consisted of high-task-relevant and low-task-relevant factors. High-task-relevant factors are related to the practicality and usability of websites, whereas low-task-relevant factors are associated with shopping experience, enjoyment, and website pleasantness. In studies about online shopping, these two factors have been suggested as significant antecedents of impulse buying (Adelaar, Chang, Lancendorfer, Lee, & Morimoto, 2003; Parboteeah et al., 2009). Shopping experiences of impulsive consumers tend to be triggered by low task-relevant factors such as excitement and pleasure (Verplanken, Herabadi, Perry, & Silvera, 2005). Thus, consumers who experience cognitive absorption, which is related to perceived playfulness and enjoyment, could have an enhanced impulse-buying tendency. Thus, I proposed the following hypothesis:

**Hypothesis 6:** Consumers' cognitive absorption will have a positive effect on impulse-buying tendency in mobile shopping.

Overby and Lee (2006) suggested that consumers consider utilitarian factors to be important when shopping online, because utilitarian components, such as ease of use and usefulness in online shopping, make it easy for consumers to compare products or prices (Mathwick, Malhotra, & Rigdon, 2001; Teo, 2001). When consumers consider their tasks to be easy, they tend to show a stronger impulse-buying tendency (Parboteeah et al., 2009; Verhagen & van Dolen, 2011; Wells, Parboteeah, & Valacich, 2011). Wells et al. (2011) investigated how easy it is to interact on the Internet and studied how ease of interaction can influence impulse-buying tendency. However, few researchers have studied the direct relationship between perceived ease of use and impulse-buying tendency. Thus, I formed a further hypothesis:

**Hypothesis 7:** Perceived ease of use will have a positive effect on impulse-buying tendency in mobile shopping.

Cognitive reactions, such as usefulness, are an important factor in the impulse-buying process (Weinberg & Gottwald, 1982). Nevertheless, even though both perceived usefulness and perceived ease of use have been suggested

as factors in previous impulsive-buying models (e.g., van der Heijden, 2004), the direct relationship between them has received relatively less attention from researchers (Parboteeah et al., 2009). Thus, I formed the following hypothesis:

**Hypothesis 8:** Perceived usefulness will have a positive effect on impulse-buying tendency in mobile shopping.

Researchers have extensively explored the antecedents of impulse-buying tendency (Chan, Cheung, & Lee, 2016; S. Kim & Eastin, 2011; Zheng et al., 2013). Impulse buying can be viewed as a function of the process that leads to the place where the actual purchase will be made (Drossos, Kokkinaki, Giaglis, & Fouskas, 2014). However, few scholars have investigated the results of an impulse-buying tendency. Thus, in this study, I aimed to establish the relationship between impulse-buying tendency and mobile shopping attitude. Therefore, I formed the following hypothesis:

**Hypothesis 9:** Impulse-buying tendency will lead to a positive attitude toward mobile shopping.

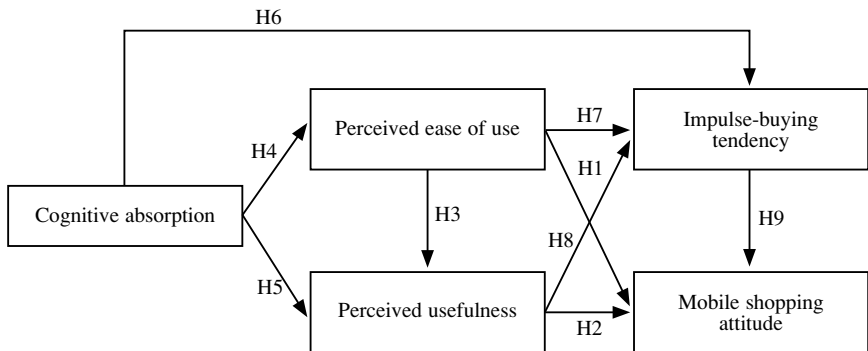


Figure 1. Research model to examine motivations for impulse-buying tendency in mobile shopping.

## Method

### Participants and Study Design

The participants were consumers from a metropolitan area of South Korea who had experience of mobile shopping. I distributed 250 online-survey forms, 16 of which were returned invalid, leaving 234 participants. The online survey was conducted by research company Macromill for about two weeks from September to October 2016. The sample consisted of 115 men (49.1%) and 119 women (50.9%), of whom 46 were aged in their twenties (19.7%), 96 in their thirties (41%), and 92 in their forties (39.3%). Of the participants, 140 (59.8%) used mobile Internet for more than one hour a day. I used SPSS version 22.0 and AMOS version 22.0 to analyze the data.

## Measures

I used measurement scales from the existing literature, with minor modifications as needed to customize them to the research's context of South Korea. A 7-point Likert-scale anchored from *strongly disagree* (1) to *strongly agree* (7) was used to measure each item. The scales of perceived ease of use and perceived usefulness were adapted from items developed by Shang et al. (2005) with minor modifications as needed to fit the purpose of this research. Respondents answered four items. Cognitive absorption was measured by three items developed by Agarwal and Karahanna (2000) and modified for use in this study. Impulse-buying tendency was measured by four items taken from Verplanken and Herabadi (2001). Mobile shopping attitude was adapted from Nysveen et al. (2005) for use in this study.

## Results

### Confirmatory Factor Analysis of Study Variables

I assessed the measures with an initial confirmatory factor analysis (CFA) to establish the reliability and discriminant validity of the multi-item scales (Anderson & Gerbing, 1988). The results are provided in Table 1. The chi-square values for this model were significant (342.872 with 142 *df*,  $p = .01$ ), and the comparative fit index (CFI) .943, incremental fit index (IFI) .944, Tucker-Lewis index (TLI) .931, and the root mean square error or approximation (RMSEA) .077 indicated satisfactory model fit. Cronbach's alphas of the factors were reliable, ranging from .80 to .93. The average variance extracted (AVE) was greater than 0.5. Thus, the five proposed factors of the research model were considered valid and reliable (Bagozzi & Yi, 1988). Convergent validity is obtained by calculating the strength of the factor loading of each observed measure on its proposed latent variable. All factor loadings from CFA were significant (minimum composite reliability = 13.711,  $p = .01$ ). These results support the convergent validity of the measures. Discriminant validity is confirmed by comparing the squared value of each pairwise correlation estimate and the AVE. Based on the criteria of Fornell and Larcker (1981), the squared values of the correlation coefficients between variables did not exceed AVE values. The results of correlation analysis are provided in Table 2.

Table 1. *Confirmatory Factor Analysis*

Variables	1	2	3	4	5
Cognitive absorption	1				
Perceived ease of use	.378***	1			
Perceived usefulness	.366***	.641***	1		
Impulsive-buying tendency	.356***	.285***	.447***	1	
Mobile shopping attitude	.296***	.550***	.570***	.470***	1

Note. \*\*\*  $p < .01$ .

Table 2. Correlations Among the Research Variables

Factor	Item	Factor loading	CR	AVE	Cronbach's $\alpha$
Cognitive absorption	CA1: I have fun interacting with mobile shopping.	.858	18.376	.642	.809
	CA2: Using mobile shopping excites my curiosity.	.909	15.937		
	CA3: I enjoy using the mobile shopping Web.	.886	17.014		
Perceived ease of use	PEOU1: I can quickly find products I want when I go to the mobile shop.	.746	13.771	.752	.892
	PEOU2: Interfaces of mobile stores are user friendly.	.842	17.035		
	PEOU3: There are many useful tools for shopping in the mobile stores.	.852	13.933		
	PEOU4: Shopping on the mobile Web is easy and effective.	.779	15.243		
Perceived usefulness	PU1: Mobile stores provide more information about products.	.721	14.991	.753	.896
	PU2: When shopping on the mobile Web, it is easy to compare the differences among various products.	.832	16.381		
	PU3: When shopping on the mobile Web, I can find some products that are not easy to be found.	.817	14.548		
	PU4: Mobile shopping takes less time for the whole transaction.	.858	14.571		
Impulsive-buying tendency	IBT1: It's hard to quit making purchases when shopping with mobile devices.	.731	15.364	.764	.917
	IBT2: Shopping through mobile devices often leads to unplanned purchases.	.932	16.976		
	IBT3: Often, when shopping through mobile devices, you make purchases that you do not need.	.920	18.044		
	IBT4: I make immediate purchasing impulses when shopping on mobile devices.	.879	16.349		
Mobile shopping attitude	MSA1: Shopping on mobile devices is a good way to shop.	.896	18.504	.797	.928
	MSA2: I prefer shopping on mobile devices.	.871	19.142		
	MSA3: Shopping on mobile devices is a smart way to shop.	.886	19.551		
	MSA4: I think shopping is positive on mobile devices.	.865	16.123		

Note. CR = composite reliability; AVE = average variance extracted.

**Hypothesis Testing Results**

To test the hypotheses, I used structural equation modeling, which is a multivariate statistical technique based on structural theory. The goodness-of-fit statistics were used to verify an acceptable model fit and reached acceptable levels ( $\chi^2 = 343.187$ ,  $df = 143$ ,  $CFI = .943$ ,  $IFI = .944$ ,  $TLI = .932$ ,  $RMSEA = .078$ ). The results of the tests of the hypotheses are summarized in Figure 2. All hypotheses, except Hypothesis 7, were supported.

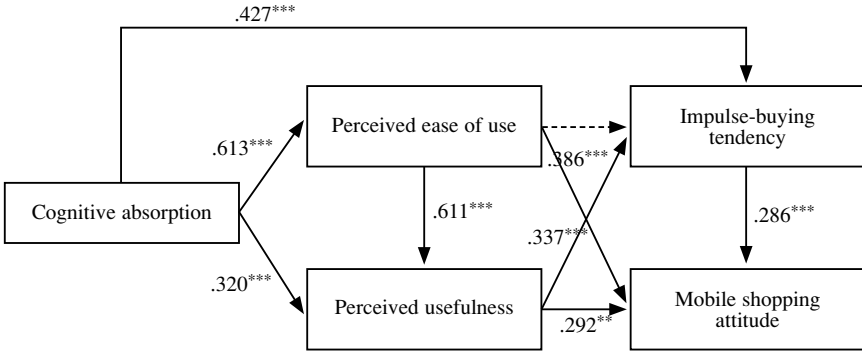


Figure 2. Results of the hypothesis testing.  
 \*\*  $p < .05$ , \*\*\*  $p < .01$ .

**Discussion**

My purpose in this study was to investigate the effects of intrinsic and extrinsic motivations on impulse-buying tendency in a mobile shopping environment. I also aimed to determine how impulse-buying tendency affects mobile shopping attitude and to examine whether or not this relationship is positive. Unlike previous researchers into the acceptance of mobile shopping (H.-W. Kim et al., 2007; Kleijnen et al., 2007; S. Lee & Park, 2006; Wu & Wang, 2005), I examined the impact of impulse buying as a positive factor, which is considered to be a side effect of mobile shopping. I also sought to identify the factors directly and indirectly influencing impulse-buying tendency through the intrinsic and extrinsic components of the TAM.

As predicted, cognitive absorption as an intrinsic motivation was found to affect the TAM factors of perceived ease of use and perceived usefulness, and it also positively influenced impulse-buying tendency in mobile shopping. The findings also show a positive relationship between intrinsic motivation and impulse-buying tendency in mobile shopping. This finding further supports those of existing studies that consumers who have high-arousal emotions show enhanced impulse-buying tendency (Verplanken et al., 2005).

The TAM factors of perceived ease of use and perceived usefulness were revealed as predictors of mobile shopping attitude, which is consistent with the finding of a previous study (Yang, 2010). However, perceived usefulness had a positive effect on impulse-buying tendency, whereas perceived ease of use did not affect impulse-buying tendency. These results mean that only perceived ease of use had an indirect effect on impulse-buying tendency. Liu, Li, & Hu (2013) suggested that the impact of perceived website ease of use on instant gratification was not significant. However, Nadkarni and Gupta (2007) proposed a nonlinear relationship (such as an inverted U-shape) between perceived ease of use and instant gratification. Thus, these results suggest that future researchers should pay more attention to the relationship between perceived ease of use and impulse buying.

One of my main purposes with this study was to investigate the relationship between impulse-buying tendency and mobile shopping attitude. As predicted, impulse buying positively affected mobile shopping attitude. This means that, in mobile contexts, consumers who purchase impulsively can be satisfied with their consumption and show a positive attitude toward their mobile shopping. These findings provide implications for mobile marketing strategists and mobile retailers. In a mobile shopping environment, intrinsic motivation is important and has a positive impact on both practical factors and impulse buying. Thus, mobile marketers should pay attention not only to improving cognitive factors but also to enhancing a consumer's affective experience. Furthermore, impulse buying in a mobile shopping context could have a positive impact on a consumer's attitude toward a mobile channel. Thus, appropriate stimulation of impulse buying may have a positive effect on consumer attitude.

Although intrinsic and extrinsic motivations were presented as antecedents of impulse buying in this study, there are other factors that could be examined in further research into mobile shopping. Several meaningful variables, such as types of product and the level of product involvement, could be included as moderating variables in future studies. The comparison between other shopping channels, such as online or offline channels, and a mobile channel, would also further understanding of the impact of impulse buying. In this study, therefore, I have provided the basis for further, and more sophisticated, research about mobile shopping.

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