

# CONSUMPTION VALUES, PERSONAL CHARACTERISTICS AND BEHAVIORAL INTENTIONS IN MOBILE SHOPPING ADOPTION

## VRIJEDNOSTI PRI POTROŠNJI, OSOBNI ČIMBENICI I NAMJERE PONAŠANJA U PRIHVAĆANJU MOBILNE KUPOVINE

TRŽIŠTE

UDK 658.842:621.395.721.5

366.12

Original scientific paper

Izvorni znanstveni rad

### Rujipun Assarut

Doctoral Candidate, Marketing Department  
Chulalongkorn Business School, Chulalongkorn University  
Phyathai Road, Pathumwan, Bangkok, 10330, THAILAND  
Phone: ++66 81 373 8995  
E-mail: rujipun.as558@cbs.chula.ac.th

### Somkiat Eiamkanchanalai, Ph. D.

Associate Professor, Marketing Department  
Chulalongkorn Business School, Chulalongkorn University  
Phyathai Road, Pathumwan, Bangkok, 10330, THAILAND  
E-mail: somkiat@cbs.chula.ac.th

### Key words:

*mobile shopping, consumption values, personal characteristics, product and service types*

### Ključne riječi:

*mobilna kupovina, vrijednosti pri potrošnji, osobni čimbenici, vrste proizvoda i usluga*

### ABSTRACT

Past literature has indicated that consumption value is an important factor in consumer decision making on whether to adopt online shopping. However, most studies have focused only on a single product or service type and, therefore, generalization of the results has been limited. Moreover, previous studies of the indirect effects of personal characteristics on the adoption of online shopping have emphasized solely the importance of utilitarian values. None have investigated the indirect effects of consumption

### SAŽETAK

Dosadašnja je literatura pokazala da je vrijednost pri potrošnji važan čimbenik u odlučivanju potrošača o prihvaćanju *online* kupovine. Međutim većina je studija bila usredotočena na jednu vrstu proizvoda ili usluge. Zbog toga je generalizacija rezultata ograničena. Nadalje, prethodne studije neizravnih učinaka osobnih čimbenika na prihvaćanje *online* kupovine naglašavale su samo utilitarne vrijednosti. Nitko nije istražio indirektnu učinke kroz vrijednosti pri potrošnji koje uključuju i utilitarne i hedonistički aspekt.

values that include both utilitarian and hedonic aspects. This study examines the relationships between consumption values, personal characteristics and behavioral intentions in the adoption of mobile shopping from the perspectives of different product and service types. The results reveal convenience, security and emotional values as the common values which consumers of fashion goods and accommodations consider when deciding whether to purchase via a mobile device. Apart from the most common values, travelers also consider conditional and epistemic values when assessing whether to reserve accommodation using a mobile device. Moreover, innovativeness and self-efficacy were both shown to exert significant indirect effects, via consumption values, on consumers' intentions to adopt mobile shopping. Managerial implications and suggestions are further discussed.

Ova studija ispituje odnose između vrijednosti pri potrošnji, osobnih čimbenika i namjera ponašanja u prihvaćanju mobilne kupovine, i to iz perspektive različitih vrsta proizvoda i usluga. Rezultati su otkrili da su praktičnost, sigurnost i emocionalne vrijednosti zajedničke vrijednosti koje potrošači modnih proizvoda i korisnici usluga smještaja razmatraju pri odlučivanju o kupovini putem mobilnog uređaja. Osim zajedničkih vrijednosti, korisnici (putnici) također razmatraju situacijske i spoznajne vrijednosti pri procjenjivanju treba li rezervirati usluge smještaja putem mobilnog uređaja. Nadalje, pokazalo se da inovativnost i samoučinkovitost imaju značajne neizravne učinke kroz vrijednosti pri potrošnji na namjere prihvaćanja mobilne kupovine. Implikacije i prijedlozi za menadžere detaljnije su raspravljani.

## 1. INTRODUCTION

Along with the advances in technological development of mobile devices, such as Smartphones, the widespread diffusion of those devices has opened new business opportunities in the retail industry in recent years. eMarketer (2014) indicated that the number of smartphone users worldwide is expected to surpass one-quarter of the global population in 2015 and reach 2.16 billion people in 2016. In the context of retailing, the development of mobile communication has increased the popularity of mobile shopping, which refers to a form of retail shopping in which consumers purchase products or services by means of mobile devices over wireless networks (Yang, 2010). Forrester Research (2014) estimated that US mobile shoppers made nearly \$114 billion in purchases in 2014, and that this figure is expected to more than double to \$293 billion by 2018.

Via the mobile retail channel, consumer shopping behavior has evolved dramatically. No longer restricted to a local shopping place, consumers are empowered by a world of unlimited choices which they can access anytime and anywhere. Even though mobile shopping has several benefits, such as purchasing convenience, consumers may be reluctant to buy items offered via mobile devices. One of the reasons for this is that they are unsure of the quality of the products or services they will receive. In addition, they may from time to time become frustrated with mobile system glitches, which could result in the loss of sales. The key to survival in this new climate is to understand the drivers underlying consumer decision making about whether to adopt mobile shopping and organize one's business around these drivers.

Consumer decision-making behavior on the adoption of mobile shopping as an emerging service has attracted considerable attention from academics. Among recent works, Lu and Rastrick (2014) investigated the influencing factors of website design on the adoption of the mobile retail channel, reporting navigation design to be

the most significant factor affecting consumers' perceived ease of use on mobile websites. Chen and Lan (2014) utilized the technology acceptance model in their study and found that external factors – i.e. mobility, convenience and information richness – influence perceived ease of use, perceived usefulness and trust in mobile shopping adoption. Furthermore, a study by Yang (2012) extended the theory of planned behavior and found that perceived enjoyment has a stronger effect on consumers' attitudes toward adopting mobile shopping than does perceived usefulness, and that the perceived control of mobile shopping also has a significant effect on mobile shopping adoption.

Consumer value-driven decision-making in innovation adoption has been one of major themes in consumer research (Sheth, Newman & Gross, 1991). From a retailing perspective, Hartnett (1998, p. 21) stated that "when retailers satisfy people-based needs, they are delivering values, which puts them in a much stronger position in the long term." Thus, retail customers are value-driven. Marketers should understand which values are significant, and where they should emphasize them in order to attract their customers to purchase their products or services.

Research on consumer value-driven decision making has evolved from a focus on the cognitive aspect of decision making, which normally considered the economic and functional aspects of products and services, to include more intrinsic and emotional aspects (Hirschman & Holbrook, 1982). The experience of a product or service can be seen to be valued holistically from both utilitarian and hedonic aspects. Thus, consumers make their choices based on their perceived utilitarian or hedonic evaluations of products and services, or so called consumer perceived value (Sheth et al., 1991). An extensive and widely accepted theoretical framework on consumer value-driven decision making is offered by the theory of consumption values (Sheth et al., 1991), which was used as the fundamental theory in this study to explain consumers' behavioral intentions to adopt mobile shopping.

Apart from consumption values, consumer researchers have widely accepted that personal characteristics, especially innovativeness and self-efficacy, also play an important role in consumers' adoption of innovation (e.g. Rogers, 2003; O'Cass & Fenech, 2003). In the context of online retailing, a study by Lian and Lin (2008) demonstrated that innovativeness and self-efficacy directly influence intentions to adopt web shopping. O'Cass and Fenech (2003) found that personal characteristics have indirect effects on web retailing adoption through perceived usefulness and perceived ease of use. Furthermore, a study by Citrin, Sprott, Silverman and Stem (2000) indicated that innovativeness has a direct influence on consumers' adoption of Web shopping. Accordingly, studies of online shopping adoption to date have shown focus either on the direct or indirect effects of personal characteristics. Moreover, when studying indirect effects, they focused only on utilitarian values, i.e. the perceptions of usefulness and ease of use. To gain more understanding of mobile shopping adoption, it would be useful to investigate the indirect effects of personal characteristics through both utilitarian and hedonic values, and include both direct and indirect effects in the same research model.

Peterson, Balasubramanian and Bronnenberg (1997) indicated that, due to the special characteristics of the Internet, the suitability of the Internet for marketing depends on the characteristics of the products and services marketed in that manner. As such, considering the differences among product and service types is important for a full understanding of the influence of online retail shopping. So far, a few researchers, such as Lian and Lin (2008), have studied the effects of product and service types on the determinants of web retailing adoption, but most have neglected this element, especially in the context of mobile shopping.

The present study, therefore, has three primary objectives: (1) to examine the influence of consumption values on the adoption of mobile shopping; (2) to investigate the impact of

personal characteristics on the perception of consumption values, including both utilitarian and hedonic aspects; and (3) to examine these relationships from the perspectives of different product and service types. The results of this study will contribute to the understanding of consumer decision-making behavior in terms of the adoption of mobile shopping. They will also provide implications for the development of effective marketing strategies aimed at particular customer segments, according to consumers' personal characteristics in different product and service-type settings.

## 2. CONCEPTUAL FRAMEWORK

### 2.1. Consumer perceived value

In consumer research, the concept of consumer perceived value has long been studied and widely accepted by researchers as a key predictor of consumer decision-making behavior (e.g. Sheth et al., 1991; Zeithaml, 1988). Zeithaml (1988) defined consumer perceived value as a consumer's overall assessment of the utility of a product or service based on his or her perceptions of what is received and what is given. Early interpretations of the "get" and "give" components were criticized as being too simplistic because they focused on perceived quality and monetary price, while ignoring the multi-dimensionality of decision making (Sheth et al., 1991). Recently, a research approach that views perceived value as a multi-dimensional construct by considering both the utilitarian and the hedonic views of consumption values has been widely gaining acceptance.

An extensive and widely accepted theoretical framework on multiple perceived value dimensions is offered by the theory of consumption values of Sheth et al. (1991). This theory provides the foundation for creating a comprehensive model of multiple consumption values. Sheth et

al. (1991) suggested five value dimensions in their theory: functional, social, emotional, epistemic and conditional values. The same framework was used as a foundation for this study.

Recall that perceived value is viewed as a multi-dimensional construct and is the aggregation of perceptions of various consumption values. This overall assessment, or perceived value, in turn would affect the outcome variables. Turel, Serenko and Bontis (2010) contended that the original theory of consumption values presented a narrower view, in which the value dimensions affected only consumer choice behavior, and proposed the study of behavioral usage and positive word-of-mouth (WOM) intentions as behavioral outcomes. Additionally, all consumption values as studied by Sheth et al. (1991) are independent from each other and do not necessarily co-vary. Thus, they do not satisfy the conditions for the reflective indicator model as a measurement of perceived value construct (Jarvis, MacKenzie & Podsakoff, 2003). Accordingly, the perceived value construct in this study was modeled as a second-order composite latent variable with consumption values as its first-order formative indicators.

According to Sheth et al. (1991), functional value is presumed to be the main driver of consumer choice and may be derived from the attributes of the product or service. In the context of mobile services, Pura (2005) suggested that convenience value is considered as a primary attractor apart from monetary value. Another important attribute of mobile services is security, especially for online shopping. Online shopping involves greater security concerns than traditional channels, as buyers and sellers do not interact face-to-face with each other, and it allows high anonymity. Therefore, in this study, the functional value was depicted by three value dimensions – i.e. monetary, convenience, and security values.

In mobile shopping, consumers are able to search and compare the prices of products or services in search of a real bargain. Thus, it may provide the perception of good value for one's

money. Furthermore, the mobile channel also provides consumers with the convenience of searching for information and shopping. It saves consumers' time and efforts in shopping. Apart from this, according to the study of O'Casey and Fenech (2003), online shoppers increase their purchases when they perceive that their credit card numbers and other sensitive information are safe. Thus, it is expected that all functional values positively affect the manner in which consumers perceive the overall value of the mobile shopping channel.

- H1** The higher the monetary value, the higher the perceived value of mobile shopping.
- H2** The higher the convenience value, the higher the perceived value of mobile shopping.
- H3** The higher the security value, the higher the perceived value of mobile shopping.

As indicated in several previous studies of mobile services (e.g. Pihlstrom & Brush, 2008; Pura, 2005), social, conditional, epistemic and emotional values are drivers of the adoption of mobile services. Social value is expected to be perceived by mobile shoppers as increasing their sociability because they can easily share their product- or service-purchasing experiences with their peers through their social network in the mobile shopping environment. Conditional value is another value that could possibly be perceived by mobile shoppers as resolving problems in situations that are unplanned or in which a product or service is difficult to purchase via traditional channels. For example, a consumer could use a mobile channel to reserve a good hotel very near to all of the sightseeing locations that he or she wants to visit.

Apart from this, the mobile retail channel may provide epistemic value to satisfy consumers' aspirations in seeking new knowledge. The reason for it lies in the fact that it can provide new shopping experiences for consumers, such as being able to shop when consumers are on a train or a bus. Furthermore, emotional value is expected to have a significant influence on the overall value perception of mobile shoppers

since an enjoyable shopping experience is one of the main factors driving consumers to shop in the first place, as indicated by Hirschman and Holbrook (1982). Thus, the following hypotheses were formulated:

- H4** The higher the social value, the higher the perceived value of mobile shopping.
- H5** The higher the conditional value, the higher the perceived value of mobile shopping.
- H6** The higher the epistemic value, the higher the perceived value of mobile shopping.
- H7** The higher the emotional value, the higher the perceived value of mobile shopping.

As indicated by Zeithaml (1988), consumers are value-driven, and their decision-making behaviors depend on perceived value or the overall assessment of value perceptions. Regarding innovation adoption, Turel et al. (2010) argued that perceived value is the basis on which consumers come to the decision to adopt an innovation. The study of Turel et al. (2010) demonstrated that perceived value has a strong direct effect on the intention to use and recommend the adoption of hedonic digital artifacts. Accordingly, perceived value is expected to influence the intentions of consumers to adopt the mobile shopping channel.

- H8** The higher the perceived value, the stronger the behavioral usage intentions.
- H9** The higher the perceived value, the stronger the positive WOM intentions.

## 2.2. Personal characteristics related to innovation adoption

### 2.2.1. Consumer innovativeness with regard to shopping

In the behavioral sciences, innovativeness is one of the few concepts that have much relevance

for consumer behavior. Consumer researchers view innovativeness as a personality construct possessed to some extent by all individual consumers. Although a number of researchers have used different techniques to define or to measure consumer innovativeness, two main types of innovativeness have emerged, namely, general innovativeness and domain-specific innovativeness.

As indicated by Joseph and Vyas (1984), general innovativeness involves the intellectual, perceptual and attitudinal characteristics of an individual consumer. A consumer who scores high on a general innovativeness scale will be open to new experiences and will even seek such experiences. However, consumer innovativeness could be viewed as more domain-specific. Goldsmith and Hofacker (1991) defined domain-specific innovativeness as “the individual’s tendency to try innovations in products, services or processes in his or her area of interest.”

Several researchers have applied the concept of domain-specific innovativeness to web retail shopping and have found that this factor influences the decision to purchase online (e.g. Lian & Lin, 2008; O’Cass & Fenech, 2003). Nevertheless, the domain-specific innovativeness in the previous studies was defined to measure the degree of an individual’s tendency to search for information or know about a new shopping website. This definition implies that people with such domain-specific innovativeness already have an intention to shop online. Thus, this study defined domain-specific innovativeness for shopping context as *consumer innovativeness toward shopping*, which indicates the degree of an individual’s tendency to try out new ways or channels of shopping. By this definition, the implication of online shopping intentions will not be confounded in the innovativeness construct.

Goldsmith and Hofacker (1991) posited that domain-specific innovativeness is a key predictor of the tendency of an individual to adopt an innovation within a specific domain of interest. The study of Citrin et al. (2000) showed that

domain-specific innovativeness exerts a strong influence on the tendency of shoppers to look for a new shopping website, learn about it and adopt it. In the same manner, it is expected that consumers who have high innovativeness toward shopping tend to learn about and adopt a new shopping channel, such as mobile shopping.

**H10** The higher the consumer innovativeness with regard to shopping, the stronger the behavioral usage intentions.

**H11** The higher the consumer innovativeness with regard to shopping, the stronger the positive WOM intentions.

### 2.2.2. Mobile self-efficacy

Self-efficacy refers to the individual beliefs of people about their capabilities of learning and performing particular behaviors (Bandura, 1986). Several researchers have applied the concept of self-efficacy to online shopping, finding that Internet self-efficacy to be one of the main factors that influence the adoption of web retail shopping (e.g. Lian & Lin, 2008; O'Cass & Fenech, 2003). Internet self-efficacy was defined as the degree of an individual's beliefs about his or her capability of learning to use and surfing the Internet. However, in the mobile shopping context, the shopping activity is mainly carried out on mobile applications, which require different skills from those necessary in web retail shopping. Thus, the Internet self-efficacy construct might not be suitable in a mobile shopping context. Therefore, the concept of mobile self-efficacy was adopted and defined in this study as the degree of an individual's belief in his or her capability of learning and using mobile applications, for example, in order to search for information.

The study by O'Cass and Fenech (2003) demonstrated that consumers who have accumulated sufficient experience in surfing the Internet tend to acquire a belief in their capability to extend this ability to new online services, such as web

retail shopping. This is so because those consumers would gain higher confidence and perceive the new online services as being easier to adopt than would other consumers who have less experience surfing the Internet. In the same manner, it is expected that consumers who have accumulated sufficient skills to use a mobile device tend to feel confident extending their usage to adopt mobile shopping.

**H12** The higher the mobile self-efficacy, the stronger the behavioral usage intentions.

**H13** The higher the mobile self-efficacy, the stronger the positive WOM intentions.

### 2.3. Personal characteristics and perceived consumption values

As suggested by conventional marketing practice, a skimming price policy is generally followed when launching a new product because the innovators and early adopters of new products are willing to pay premium prices. This is so because innovative consumers are relatively more price insensitive than other consumers and may perceive buying the new product to be good value for their money. In the same vein, consumers who are high in innovativeness toward shopping are expected to perceive new ways or channels of shopping as having high monetary value.

**H14** The higher the consumer innovativeness with regard to shopping, the higher the monetary value.

According to a study by Vandecasteele and Geuens (2010), innovative consumers could be motivated by the functional performance of an innovation. Those consumers would pay attention to utilitarian attributes, such as convenience and usefulness. They tend to perceive the attributes which involve task management and problem-solving as having higher utilitarian value than those which are less innovative.

In other words, their motivations tend to be activated by convenience and conditional values. Furthermore, according to Rogers (2003), innovative consumers also show a risk-taking tendency when deciding to adopt an innovation. In other words, they may perceive an innovation to have higher security value than would other consumers who are less innovative.

- H15** The higher the consumer innovativeness with regard to shopping, the higher the convenience value.
- H16** The higher the consumer innovativeness with regard to shopping, the higher the conditional value.
- H17** The higher the consumer innovativeness with regard to shopping, the higher the security value.

Apart from functional motivations, innovative consumers are also motivated by social, cognitive and hedonic reasons (Vandecasteele & Geuens, 2010). Social motivation concerns the need to impress others and raise their social approval. Cognitive motivation is related to the desire of consumers to have new experiences using an innovation with the motivation for epistemic value, such as learning, knowing and understanding. Finally, innovative consumers are also motivated by hedonic or emotional value, which is related to the fun and excitement of an innovation. Thus, innovative consumers who are motivated by these values may perceive these consumption values to be higher than do other consumers who are less innovative.

- H18** The higher the consumer innovativeness with regard to shopping, the higher the social value.
- H19** The higher the consumer innovativeness with regard to shopping, the higher the epistemic value.
- H20** The higher the consumer innovativeness with regard to shopping, the higher the emotional value.

In their study Lian and Lin (2008) indicated that consumers with high Internet self-efficacy tend-

ed to use their skills to search and compare functions and prices of products or services on the Internet in order to find the one that would provide them with the best value for the money. Furthermore, Internet self-efficacy was shown in the study by O'Cass and Fenech (2003) to affect consumer perception on the ease of use and usefulness of web retail purchases. Therefore, in the same manner, it is expected that mobile self-efficacy may have positive effects on the mobile shoppers' perceptions of monetary and convenience values. Conditional value is also expected to be influenced by mobile self-efficacy. This is so because the more familiar with mobile usage consumers get, the more they tend to be able to apply their mobile capabilities in particular contexts that they encounter.

- H21** The higher the mobile self-efficacy, the higher the monetary value.
- H22** The higher the mobile self-efficacy, the higher the convenience value.
- H23** The higher the mobile self-efficacy, the higher the conditional value.

O'Cass and Fenech (2003) contended that consumers who have high Internet self-efficacy normally possess high Internet surfing experience and are aware of security measures available for secure transactions, so they can understand and control their involvement in the web retail channel. In the same vein, it is expected that mobile self-efficacy positively affects the perception of security value.

- H24** The higher the mobile self-efficacy, the higher the security value.

Yi and Gong (2008) demonstrated that consumers with high self-efficacy tended to have more satisfaction with online services and that they motivate themselves to share their experiences with friends, increasing their social self-esteem. Furthermore, those consumers might tend to see and capture the aspects of novelty in new online services faster than consumers with low self-efficacy, and could get the best outcomes and enjoy the new services. Thus, we put forward the following hypotheses:

- H25** The higher the mobile self-efficacy, the higher the social value.
- H26** The higher the mobile self-efficacy, the higher the epistemic value.
- H27** The higher the mobile self-efficacy, the higher the emotional value.

## 2.4. Online product and service types

Peterson et al. (1997) indicated that, due to the special characteristics of the Internet, the suitability of online marketing depends on the characteristics of the products and services marketed in it. Liang and Huang (1998) expressed a similar opinion, noting that, when coping with a market that has electronic characteristics, more attention must be paid to understanding which products or services are suitable for the market.

Consequently, different product and service types could provide different conditions for the relationships between consumption values, per-

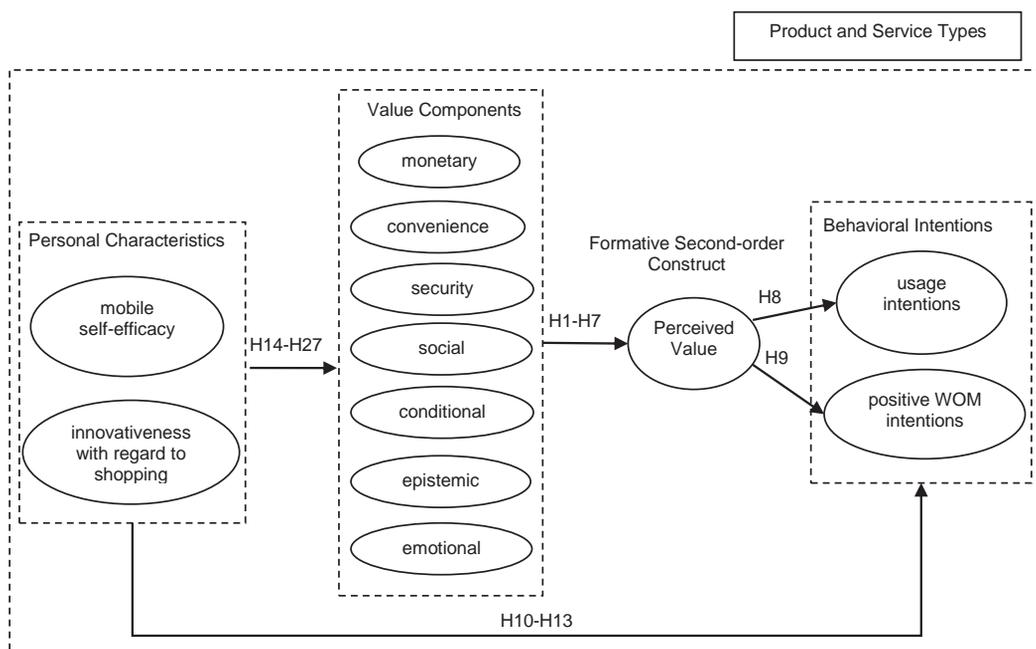
sonal characteristics and behavioral intentions. Thus, in this study, all hypothesized relationships were also examined from the perspectives of different product and service types.

Figure 1 presents the research model for this study.

Regarding the categorization of online products and services, Francis and White (2004) developed an established and widely accepted categorization scheme for online retail shopping, called the “fulfillment-product classification scheme”, based on how products or services have been fulfilled in the online retail context. The scheme was used as a foundation in this study.

The classification scheme is based on two marketing-relevant attributes. The first attribute is “fulfillment”, in which products or services are physically delivered offline or electronically delivered online. The second attribute is the “product” purchased online, which includes goods and services. Combining the “fulfillment” with the “product” segments, Internet retail shopping

**Figure 1:** Full proposed research model



can be categorized into four product and service types: the offline goods category, the offline services category, the electronic goods category, and the electronic services category, as shown in Table 1.

Two groups of respondents were involved: one for the context of purchasing fashion goods, and the other for reserving accommodations. For each group, the data of 308 respondents were equally collected.

**Table 1:** Fulfillment – product classification scheme

	Offline	Electronic
Goods	<ul style="list-style-type: none"> <li>• Consumer orders and waits for tangible goods (e.g. refrigerator, car, clothes) to be delivered.</li> <li>• Firm dispatches goods via physical delivery channels.</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer pays for and downloads digital products for consumption (e.g. mp3 music file).</li> </ul>
Services	<ul style="list-style-type: none"> <li>• Consumer reserves and pays online, (e.g. concert ticket, accommodation).</li> <li>• Consumer travels to the firm's service delivery location.</li> </ul>	<ul style="list-style-type: none"> <li>• Consumer establishes an account or membership and pays online.</li> <li>• The service is produced and consumed online (e.g. online TV).</li> </ul>

Source: Francis, J., & White, L. (2004). Value Across Fulfillment-Product Categories of Internet Shopping. *Managing Service Quality*, 14(2/3), 226-234.

As proposed in a study by ETDA (2013), online shoppers still mostly shop for tangible goods and make reservations of services online, and these transactions account for more than 90% of all products or services purchased online. Moreover, fashion goods (i.e. clothes and shoes) account for nearly 59% of all online shopping, while online reservations for accommodations (e.g. hotel, resort) account for 19%, or more than other service reservations, which account for less than 10% of all online shopping. Thus, this research focuses on online shopping for fashion goods (offline-goods category) and accommodations (offline-services category).

### 3. METHODOLOGY

Data were collected by means of a questionnaire survey. The respondents were consumers who had had previous mobile shopping experience.

The respondents in each group were aged 20–49 and lived in the Bangkok Metropolitan Region, but the majority of the respondents (68.9%) belonged to the working-age young-adult segment, who grew up with online environment (20–34 years of age). This is consistent with the survey results of NSO (2013) regarding the proportion of Thai online shoppers.

The items of each construct in the questionnaire were derived from the literature concerning consumption values and personal characteristics (Table 2) and were rated on a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Some items were modified by adapting the wording to fit the mobile shopping context. Interviews with eight experienced mobile shoppers were conducted in order to pre-test the questionnaire and make sure that it captured the meanings of the constructs. Thus, content validity was ensured.

**Table 2:** Constructs and items

Construct	Items	Sources
Monetary value (Mon)	<ul style="list-style-type: none"> <li>• Mobile shopping would save me money to be spent on the shopping activity.</li> <li>• Mobile shopping would enable me to compare prices to find a good deal.</li> <li>• Mobile shopping would enable me to find good promotions for goods or services.</li> </ul>	Pihlstrom & Brush (2008)
Convenience value (Conv)	<ul style="list-style-type: none"> <li>• Mobile shopping would save me time otherwise spent on the brick-and-mortar channel for shopping.</li> <li>• Mobile shopping would enable me to shop without being concerned about my location and time.</li> <li>• Mobile shopping would enable me to conveniently access information about goods or services.</li> </ul>	Pihlstrom & Brush (2008)
Security value (Sec)	<ul style="list-style-type: none"> <li>• I feel secure sending my personal or financial information across a mobile network.</li> <li>• I feel safe providing my personal or financial information to mobile retailers.</li> <li>• I feel that the mobile channel is a safe environment for shopping.</li> </ul>	O’Cass & Fenech (2003)
Social value (Soc)	<ul style="list-style-type: none"> <li>• Mobile shopping would help me feel accepted by others.</li> <li>• Mobile shopping would make me feel that I make a good impression on others.</li> <li>• Mobile shopping would improve the way people perceive me.</li> </ul>	Pihlstrom & Brush (2008)
Conditional value (Cond)	<ul style="list-style-type: none"> <li>• The flexibility of mobile shopping to be able to shop anytime and anywhere helps me get what I need at the time when it is necessary or when unexpected events occur.</li> <li>• Mobile shopping would increase my chances of finding rare or limited items.</li> </ul>	Pihlstrom & Brush (2008)
Epistemic value (Epi)	<ul style="list-style-type: none"> <li>• Mobile shopping arouses my curiosity for novel experiences.</li> <li>• Mobile shopping arouses me with the new experience of being able to shop anytime and anywhere.</li> <li>• Mobile shopping arouses me with a new experience by coming up with marvelous offers.</li> </ul>	Pihlstrom & Brush (2008)
Emotional value (Emo)	<ul style="list-style-type: none"> <li>• Shopping via mobile would give me pleasure.</li> <li>• Shopping via mobile would make me feel good.</li> <li>• Shopping via mobile would give me an enjoyable time.</li> </ul>	Pihlstrom & Brush (2008)
Perceived value (PerValue)	<i>Formative Second-Order Construct</i>	
Consumer innovativeness with regard to shopping (Innov)	<ul style="list-style-type: none"> <li>• Compared to my friends, I often seek information about new shopping channels.</li> <li>• If I heard that a new retail channel was available, I would not hesitate to try shopping at it.</li> <li>• I am among the first in my circle of friends to try shopping on a new shopping channel.</li> </ul>	Goldsmith & Hofacker (1991)
Mobile self-efficacy (SelfEff)	<ul style="list-style-type: none"> <li>• I could search and install a mobile application on my own.</li> <li>• I feel comfortable using a mobile application on my own.</li> <li>• I could use a mobile device to find information that I want.</li> </ul>	O’Cass & Fenech (2003)

Table 2 - Continued

Behavioral usage intentions (UseInt)	<ul style="list-style-type: none"> <li>• I intend to purchase products or services via mobile shopping in the future.</li> <li>• I would purchase a greater variety of products or services via mobile shopping in the future.</li> <li>• Mobile shopping is one of shopping channels that I would visit when I want to buy a product or service in the future.</li> </ul>	Pihlstrom & Brush (2008)
Positive WOM intentions (WOMInt)	<ul style="list-style-type: none"> <li>• I would say positive things about mobile shopping to other people.</li> <li>• I would recommend mobile shopping to someone who seeks my advice.</li> <li>• I would encourage friends and relatives to purchase from a mobile shopping channel.</li> </ul>	Turel et al. (2010)

The measurement and structural models were analyzed using partial least squares SEM (PLS-SEM). PLS-SEM was chosen because, when compared to covariance-based SEM (CB-SEM), it can work efficiently with a much smaller sample size, non-normality of data and increased model complexity, such as modeling higher-order constructs, and can incorporate formative and reflective constructs (Hair, Hult, Ringle & Sarstedt, 2014). SmartPLS 2.0 software was used as a tool for PLS-SEM analysis.

## 4. RESULTS

The analysis confirmed that all constructs had acceptable measurement properties on both re-

liability and validity. The results (Table 3) demonstrated that all outer loadings exceeded the threshold value of 0.708, indicating that the variance in each indicator was mostly explained by its underlying latent variable. Furthermore, all latent constructs had composite reliability greater than the recommended value of 0.7. The convergent validity was supported by the AVE values of all latent constructs, which were well above the required minimum level of 0.50. The square root of the AVE for each construct was higher than the corresponding inter-construct correlations, confirming the discriminant validity (Table 4).

Table 3: Results summary of measurement models

Latent variable	Indicators	Outer loadings	AVE	Composite reliability	Formative second-order construct (PerValue)		
					VIFs of dimensions	Standardized est.	t-statistic
Mon	Mon_1	0.7989	0.7367	0.8933	1.8646	0.2087**	52.7269
	Mon_2	0.8833					
	Mon_3	0.8898					
Conv	Conv_1	0.8522	0.7433	0.8967	2.1339	0.2099**	53.0406
	Conv_2	0.8924					
	Conv_3	0.8410					

Table 3 - Continued

Sec	Sec_1	0.9428	0.8696	0.9524	1.3757	0.2273**	50.8028
	Sec_2	0.9455					
	Sec_3	0.9088					
Soc	Soc_1	0.9387	0.9009	0.9646	1.0585	0.2302**	48.5844
	Soc_2	0.9668					
	Soc_3	0.9418					
Cond	Cond_1	0.8772	0.7740	0.8726	1.8507	0.1421**	49.7560
	Cond_2	0.8823					
Epi	Epi_1	0.8801	0.7715	0.9101	2.9182	0.2133**	54.0153
	Epi_2	0.8961					
	Epi_3	0.8584					
Emo	Emo_1	0.9491	0.8892	0.9601	2.2092	0.2287**	51.4960
	Emo_2	0.9546					
	Emo_3	0.9250					
Innov	Innov_1	0.8940	0.8485	0.9438	-	-	-
	Innov_2	0.9374					
	Innov_3	0.9314					
SelfEff	Self_1	0.8992	0.7677	0.9082	-	-	-
	Self_2	0.8965					
	Self_3	0.8311					
UseInt	Usage_1	0.9400	0.8750	0.9545	-	-	-
	Usage_2	0.9448					
	Usage_3	0.9213					
WOMInt	WOM_1	0.9239	0.8372	0.9391	-	-	-
	WOM_2	0.9290					
	WOM_3	0.8915					

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$

Table 4: Inter-construct correlation matrix with square roots of AVEs

	Mon	Conv	Sec	Soc	Cond	Epi	Emo	Innov	SelfEff	UseInt	WOMInt
Mon	<b>0.8583</b>										
Conv	0.6237	<b>0.8621</b>									
Sec	0.3791	0.4199	<b>0.9325</b>								
Soc	0.1035	0.0389	0.0733	<b>0.9492</b>							
Cond	0.4840	0.5745	0.3766	0.0658	<b>0.8798</b>						
Epi	0.5818	0.6137	0.3597	0.1124	0.6233	<b>0.8784</b>					
Emo	0.4423	0.4779	0.4384	0.2141	0.4729	0.7002	<b>0.9430</b>				
Innov	0.4310	0.3666	0.4253	0.1425	0.2971	0.4448	0.4545	<b>0.9211</b>			
SelfEff	0.4559	0.4881	0.3353	0.0828	0.4017	0.3904	0.2704	0.3034	<b>0.8762</b>		
UseInt	0.5185	0.5749	0.4995	0.0442	0.5913	0.6313	0.5800	0.4888	0.3981	<b>0.9354</b>	
WOMInt	0.4842	0.5766	0.4580	0.1288	0.5311	0.6134	0.6054	0.4996	0.4007	0.7662	<b>0.9150</b>

Note: Square roots of AVEs are presented on the diagonal. Construct correlations are shown below the diagonal.

As for the assessment of the perceived value construct, which is a formative second-order construct, multicollinearity among first-order dimensions and nomological validity were evaluated according to the approaches suggested in Diamantopoulos, Reifer and Roth (2008). Multicollinearity among the seven dimensions of consumption values was evaluated by the variance inflation factor (VIF). The results (Table 3) showed that the VIF values of all perceived value dimensions were lower than the recommended value of 3.3 (Roberts & Thatcher, 2009). Furthermore, all dimensions were also shown to have significant weights in the formative measurement model of the perceived value. Meanwhile, nomological validity was confirmed by examining the perceived value construct's relation to other two reflectively-measured outcome constructs, which are behavioral usage and positive WOM intentions. The perceived value construct was shown to have significant and strong relationships with both outcome variables (Table 5).

**Table 5:** Establishing nomological validity for perceived value construct

Relationship	Standardized est.	t-statistic
PerValue -> UseInt	0.7471**	37.7214
PerValue -> WOMInt	0.7238**	32.3904

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$

The structural model was analyzed by PLS-SEM with multi-group analysis in order to examine the hypothesized relationships in the model for each group of product and service types, as well as the statistical differences in the relationships between the groups (Table 6). The structural model showed that fashion goods shoppers significantly considered convenience, security and emotional values as the basis upon which individuals assessed the overall perceived value of mobile shopping. Meanwhile, travelers significantly considered convenience, security, conditional, epistemic and emotional values in their evaluation of reserving accommodation.

**Table 6:** Hypotheses and multi-group test results

Hypothesized relationship	Fashion goods			Accommodation			Multi-group t-statistic
	Standardized est.	t-statistic	Standard error	Standardized est.	t-statistic	Standard error	
H1 Mon -> PerValue	0.1059	1.2281	0.0862	0.0684	1.0531	0.0650	0.3479
H2 Conv -> PerValue	0.2091*	2.4227	0.0863	0.2108**	3.1885	0.0661	0.0157
H3 Sec -> PerValue	0.1573*	2.2436	0.0701	0.1950**	4.0627	0.0480	0.4445
H4 Soc -> PerValue	0.0463	0.7224	0.0641	0.0053	0.1292	0.0414	0.5382
H5 Cond -> PerValue	0.1180	1.4068	0.0839	0.3069**	4.4335	0.0692	1.7397
H6 Epi -> PerValue	0.2027	1.9374	0.1046	0.2787**	3.3098	0.0842	0.5669
H7 Emo -> PerValue	0.4372**	4.6348	0.0943	0.2317**	3.4938	0.0663	1.7856
H8 PerValue -> UseInt	0.5884**	13.1620	0.0447	0.7354**	19.8042	0.0371	2.5346*
H9 PerValue -> WOMInt	0.5486**	11.7599	0.0466	0.6717**	15.5849	0.0410	1.9865*
H10 Innov -> UseInt	0.2231**	5.0470	0.0442	0.0371	0.8992	0.0413	3.0798**
H11 Innov -> WOMInt	0.1821**	3.7704	0.0483	0.1338**	2.8401	0.0471	0.7171
H12 SelfEff -> UseInt	0.0181	0.4073	0.0444	0.0706	1.7281	0.0409	0.8711
H13 SelfEff -> WOMInt	0.0977*	2.1426	0.0456	0.0246	0.5478	0.0449	1.1441
H14 Innov -> Mon	0.3185**	6.1730	0.0516	0.3172**	5.4819	0.0579	0.0168
H15 Innov -> Conv	0.1449*	2.4349	0.0595	0.2620**	5.1936	0.0504	1.5042

Table 6 - Continued

<b>H16</b> Innov -> Cond	0.2064**	3.7194	0.0555	0.2227**	4.1250	0.0540	0.2108
<b>H17</b> Innov -> Sec	0.3307**	5.7010	0.0580	0.3645**	6.7706	0.0538	0.4279
<b>H18</b> Innov -> Soc	0.2147**	3.3285	0.0645	0.0944	1.7169	0.0550	1.4215
<b>H19</b> Innov -> Epi	0.3084**	5.5723	0.0554	0.4003**	7.6617	0.0522	1.2093
<b>H20</b> Innov -> Emo	0.4244**	9.1636	0.0463	0.4002**	6.8673	0.0583	0.3256
<b>H21</b> SelfEff -> Mon	0.3947**	8.1847	0.0482	0.3244**	6.2894	0.0516	0.9972
<b>H22</b> SelfEff -> Conv	0.3397**	5.5567	0.0611	0.3974**	7.7128	0.0515	0.7232
<b>H23</b> SelfEff -> Cond	0.4410**	9.2760	0.0475	0.3508**	6.1908	0.0567	1.2214
<b>H24</b> SelfEff -> Sec	0.2394**	4.3740	0.0547	0.2193**	3.9116	0.0561	0.2569
<b>H25</b> SelfEff -> Soc	0.0494	0.8991	0.0549	0.0490	0.8560	0.0572	0.0051
<b>H26</b> SelfEff -> Epi	0.3129**	5.8920	0.0531	0.2532**	5.1113	0.0495	0.8237
<b>H27</b> SelfEff -> Emo	0.1837**	3.4460	0.0533	0.1084*	2.2211	0.0488	1.0437
<b>R<sup>2</sup> of UseInt</b>		54.5%			62.6%		
<b>R<sup>2</sup> of WOMInt</b>		51.1%			58.1%		

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$

Additionally, for both groups, the perceived value exhibited strongly significant relationships with behavioral usage and positive WOM intentions. However, the relationships between consumption values and perceived value showed no statistically significant difference between the two groups; but in the relationships between perceived value and behavioral intentions, there were significant differences between those two groups.

The results also showed that fashion goods shoppers with high innovativeness with regard to shopping significantly perceived all consumption values to be higher. The results were similar for accommodation reservations, except for social value. Additionally, all relationships between innovativeness with regard to shopping and consumption values showed no statistically significant difference between the two groups. Furthermore, innovativeness with regard to shopping exhibited a direct and significant relationship with usage intentions only among fashion goods shoppers, but with positive WOM intentions among both groups of shoppers. The only relationship between innovativeness with regard to shopping and usage intentions showed a significant difference between the two groups.

Mobile self-efficacy was shown to exert significant effects on all value components except social value for both groups. All relationships between mobile self-efficacy and consumption values showed no statistically significant difference between the two groups. Furthermore, mobile self-efficacy exhibited a direct and significant influence only on positive WOM intentions among fashion goods shoppers, but to a very weak degree, and there were no significant differences between the two groups.

All in all, the perceived value, innovativeness with regard to shopping, and mobile self-efficacy explained major portions of the variation in behavioral intentions on mobile shopping adoption for fashion goods and accommodation reservation -- about 54.5% and 62.6%, respectively, of the variance ( $R^2$ ) for usage intentions, and 51.1% and 58.1%, respectively, for positive WOM intentions.

## 5. DISCUSSION AND IMPLICATIONS

This study introduces the theory of consumption values and personal characteristics as a way

of explaining and predicting the adoption of mobile shopping in the contexts of purchasing fashion goods and reserving accommodation. It was shown that fashion goods shoppers and travelers paid attention to different sets of consumption values when considering whether to adopt mobile shopping. Furthermore, innovativeness with regard to shopping and mobile self-efficacy were shown to have an impact on how consumers perceived the consumption values of the mobile retail channel, as well as some direct influence on the formation of behavioral intentions.

### Consumer-perceived value versus mobile shopping adoption

The findings suggest that consumption values play a significant role in the adoption of mobile shopping. In line with our expectations, convenience, security and emotional values were shown to have significant effects on the assessment of perceived value for both groups of shoppers.

With the arrival of online shopping, the reservation of accommodation has become simpler than ever. In the past, it was quite inconvenient for travelers to contact a hotel's sales representative to obtain information about the hotel and make a reservation, especially when traveling to foreign countries. Nowadays, travelers can conveniently review and reserve hotel rooms online while planning for their trips to anywhere in the world. Moreover, thanks to mobile navigation applications, travelers can easily obtain timely information to help them reach their accommodation or nearby attractions.

Similarly, online shopping also allows fashion goods shoppers to conveniently search for information about products, to order the products and let them be delivered to their address without the necessity of visiting a physical store. However, it lacks some other experiences that can be found in a physical channel, such as being able to touch merchandise and try things on. Consequently, consumers may still be reluctant

to buy fashion goods online because they cannot determine how materials feel and how well the goods fit. Marketers may need to provide a convenient and free return service, especially for clothes made of brand-new fabrics, in order to make it possible for customers to treat online shopping to some extent like a physical store, where they can try on, assess the products and easily return them if necessary.

The level of security value in mobile shopping remains a crucial concern for both groups of shoppers due to the perceived risk involved in transmitting sensitive information, such as personal information. However, it is important to note that fashion goods shoppers may encounter some other concerns regarding the items they have purchased, which are of no concern to travelers; for instance, if the goods are broken or defective, or if there is a delay in delivery. Thus, apart from designing a secured mobile retail service, fashion goods marketers also need to provide an efficient exchange or refund service to shoppers.

Additionally, marketers should include more emotional value while designing and operating mobile retail applications, such as an interactive feature that allows shoppers to be able to control the viewing angle of pictures of good-looking models with attractive clothes or pictures of beautiful hotels surrounded by colorful nature, in order to stimulate the mobile shopping intentions of the consumers. With the advancements of mobile technology, mobile applications should be able to provide a more realistic environment, while also bringing more enjoyment to mobile shoppers.

In contrast with our expectations, only travelers were shown to significantly consider conditional and epistemic values in their assessment of perceived value. Possible reasons for this might be among the following. Regarding conditional value, travelers perceived that the reservation of mobile accommodations can resolve some urgency or emergency situations for them, such as being able to help them search for suitable

accommodation near a place where they have never been before and automatically calculate the travel distance and the best route to the accommodation. This is different from buying fashion goods, which generally do not have such a high degree of contingency or urgency to urge consumers to purchase them online. Normally, fashion goods shoppers prefer to leisurely browse through a wide range of goods before making their buying decisions.

Regarding epistemic value, accommodation marketers can utilize location-based features available via mobile devices to provide travelers with novelty experiences, such as real-time navigation to the accommodation. Furthermore, putting the location information and travelers' preferences together would be a valuable combination for marketers who strive to provide suitable services at the place and time the travelers are ready to be served. On the other hand, at present location information is not utilized much in the fashion goods shopping service in Thailand. It is still a passive service, one in which shoppers access online stores, browse through pages of goods, place orders and wait for them to be delivered. This may be the reason why mobile fashion goods shopping lacks sufficient novelty to create a new experience to arouse the shoppers' curiosity.

Far from our expectations, neither group of shoppers perceived monetary and social values as important values in the adoption of mobile shopping. This indicates that the current pricing level of fashion goods and accommodation available via the mobile channel in Thailand may already seem reasonable to many consumers, and that is does not have great advantages over other alternative shopping channels. Furthermore, it also reveals that neither group of shoppers perceived mobile shopping itself as a shopping channel that could give them social approval or enhance their social self-conception. In other words, they may perceive that it is merely conventional to be able to shop by using a mobile device.

Regarding the aggregated assessment of consumption values, the findings also suggest that

the perceived value of accommodation reservation has a significantly stronger influence on the adoption of mobile shopping than that of fashion goods shopping. This might be due to the facts discussed so far in terms of each consumption value – i.e. that the reservation of accommodation has more obvious relative advantages and fewer concerns when compared to fashion goods shopping.

All in all, convenience, security and emotional values are crucial and common values to which marketers of fashion goods and accommodation should pay attention when designing and developing their mobile shopping services. Generally, convenience value is the main driver of the adoption of self-service technologies, while security value remains an important concern among online shoppers, and emotional value is an important attractor of shopping activity. Additionally, accommodation marketers also need to emphasize conditional and epistemic values by incorporating location-based features into their services in order to entice consumers to adopt mobile shopping.

### **Personal characteristics versus mobile shopping adoption**

The findings reveal somewhat unexpected results regarding direct relationships between the characteristic of innovativeness with regard to shopping and the adoption of mobile shopping. Innovativeness with regard to shopping directly motivates only the group of fashion goods shoppers to shop on mobile, but both groups of shoppers tend to spread positive WOM. One explanation for this may be that online accommodation reservation has become widely accepted ahead of online fashion goods shopping in Thailand, especially via desktop-based applications. This means that Thai travelers who have high innovativeness with regard to shopping are already familiar with online reservation and realize the existence of the mobile channel. However, this does not give them enough motivation to adopt it. They still need to assess the consumption values of the mobile channel and

decide whether to adopt it. This explanation is in line with our findings that the innovativeness characteristic indirectly drove both groups of shoppers to adopt mobile shopping through consumption values.

Accordingly, innovativeness with regard to shopping could possibly help marketers identify innovators and early adopters of their mobile retail service. This is very important in two ways. First, the innovators and early adopters might contribute to the initial groups of customers who will shop via the mobile retail channel and, second, they could provide important positive WOM about the mobile retail channel to later adopters. Thus, if marketers are able to identify potential innovators who love to try out new shopping channels, they can create marketing campaigns with appropriate incentives to be presented to consumers in order to facilitate the adoption process and encourage subsequent positive WOM to later adopters.

Apart from our expectations, both groups of shoppers were shown not to be directly driven by mobile self-efficacy to adopt mobile shopping. Moreover, mobile self-efficacy had a very weak degree of influence on both groups of shoppers to directly drive them to spread positive WOM about the mobile channel, although it was a significant factor in the case of fashion goods shoppers. Nevertheless, in the same manner as the innovativeness characteristic, both groups of shoppers were indirectly driven by mobile self-efficacy via consumption values. This implies that shoppers who are skilled at using mobile devices still need actual driving forces or values to attract them to decide to adopt mobile shopping.

Accordingly, mobile self-efficacy could help marketers attract consumers to adopt mobile shopping, especially through increasing their perceptions of consumption values on mobile shopping. In order to promote mobile retail usage among shoppers with high levels of mobile self-efficacy, marketers could develop and

design a marketing campaign, such as providing a trial period for shopping via their various mobile shopping services. This campaign thus could increase customers' familiarity with mobile retail technologies and enhance good perceptions of mobile shopping. Then, marketers might provide incentives to persuade those shoppers to continue using the mobile channel as an alternative shopping channel and to stimulate them to spread positive WOM to other consumers.

All in all, both groups of shoppers who have high innovativeness toward shopping or high mobile self-efficacy tend to attribute higher consumption values to mobile shopping, and these values in turn drive them to adopt mobile shopping and spread positive WOM. Consequently, both personal characteristics could help marketers target their potential customers and plan for their marketing strategies, as already discussed.

These research results could also give implications for overall marketing strategies that can be either directed towards building more commitment among current customers or attracting new customers to mobile retail shopping. Based on companies' current customers who are using other retail channels, marketers could attract and move the truly loyal customers to adopt the mobile channel for retail usage. As such, they may also attract new mobile retail customers through positive WOM of those truly loyal customers. Another strategy may be to attract customers who may not feel committed to the companies' products or services by convincing them with the help of differentiating experiences, in terms of more valuable services which could be obtained from the mobile shopping channel. In any case, such a strategy may require brand building in order to raise awareness among consumers of who is providing the mobile shopping service. Additionally, linking the mobile retail service to a particular brand of goods also helps to promote and manage the satisfaction of customers regarding the consumption values fulfilled by the mobile retailer.

## 6. LIMITATIONS AND FUTURE RESEARCH

Despite its potential contributions, this study has some limitations. First, the results are derived from consumers in Thailand, where mobile shopping is still in its infancy; it may have different results when compared to more established markets. Cross-national research is encouraged to investigate whether the results in this study may be generalized. A further limitation is that behavioral outcomes were measured by behavioral intentions. In the future, comparative research is encouraged between data from actual behaviors and intentions. Further research could also investigate the adoption of mobile shopping in other settings of different product and service types that have not been considered in this study. Additionally, it may be valuable to investigate the influence of brand building on how consumers perceive the consumption values of mobile shopping for different brands.

This research was also limited to the study of consumers who have mobile shopping experi-

ence. The findings may be different from those of inexperienced mobile shoppers. As found in the study of Agrebi and Jallais (2015), the perceptions of usefulness, ease of use and enjoyment exert significant effects on satisfaction among both experienced and inexperienced mobile shoppers. However, satisfaction positively influences the intention to adopt mobile shopping only among experienced shoppers. Thus, it would be beneficial to examine the proposed research model in this study further for possible application to inexperienced mobile shoppers.

Finally, as pointed out by Sherman (2014), mobile payment – which refers to the use of a mobile device as a payment device, plays an important role in the era of mobile commerce. From a market point of view, Sherman (2014) suggested that the ultimate drivers of mobile payment are the reduced costs and the increased reach to financial services, while the important inhibitors are security, regulations and the convenient ways to deposit and withdraw cash from a mobile account. In order to encourage the adoption of mobile shopping, an empirical study of those drivers and inhibitors in the acceptance of mobile payment would be useful.

## REFERENCES

1. Agrebi, S., & Jallais, J. (2015). Explain the intention to use smartphones for mobile shopping. *Journal of Retailing and Consumer Services*, 22, 16-23.
2. Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
3. Chen, Y. F., & Lan, Y. C. (2014). An empirical study of the factors affecting mobile shopping in Taiwan. *International Journal of Technology and Human Interaction*, 10(1), 19-30.
4. Citrin, A. V., Sprott, D. E., Silverman, S. N., & Stem, D. E., Jr. (2000). Adoption of Internet shopping: the role of consumer innovativeness. *Industrial Management & Data Systems*, 100(7), 294-300.
5. Diamantopoulos, A., Reifler, P., & Roth, K. P. (2008). Advancing Formative Measurement Models. *Journal of Business Research*, 61(12), 1203-1218.
6. eMarketer (2014). 2 Billion Consumers Worldwide to Get Smart(phones) by 2016. Retrieved: March 13<sup>th</sup>, 2015 from <http://www.emarketer.com/Article/2-Billion-Consumers-Worldwide-Smart-phones-by-2016/1011694>
7. ETDA - Electronics Transaction Development Agency (2013). Thailand Internet User Profile 2013. Available at [http://www.etcha.or.th/etcha\\_website/files/system/InternetUserProfile\\_2013\\_14.11.13.pdf](http://www.etcha.or.th/etcha_website/files/system/InternetUserProfile_2013_14.11.13.pdf)

8. Forrester Research (2014). US Mobile and Tablet Commerce to Top \$293B by 2018; Total eCommerce To hit \$414B. Retrieved: March 13<sup>th</sup>, 2015 from <https://www.forrester.com/US+Mobile+And+Tablet+Commerce+To+Top+293B+by+2018+Total+eCommerce+To+Hit+414B/-/E-PRE7004>
9. Francis, J., & White, L. (2004). Value across Fulfillment-Product Categories of Internet Shopping. *Managing Service Quality*, 14(2/3), 226-234.
10. Goldsmith, R. E., & Hofacker, C. F. (1991). Measuring consumer innovativeness. *Journal of the Academy of Marketing Science*, 19(3), 209-221.
11. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Thousand Oaks, (CA): Sage.
12. Hartnett, M. (1998). Shopper Needs Must be Priority. *Discount Store News*, 37(9), 21-22.
13. Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic Consumption: Emerging Concepts, Methods and Propositions. *Journal of Marketing*, 46(Summer), 92-101.
14. Jarvis, C. B., MacKenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research. *Journal of Consumer Research*, 30(2), 199-218.
15. Joseph, B., & Vyas, S. J. (1984). Concurrent validity of a measure of innovative cognitive style. *Journal of the Academy of Marketing Sciences*, 12(2), 159-175.
16. Lian, J. W., & Lin T. M. (2008). Effects of consumer characteristics on their acceptance of online shopping: Comparisons among different product types. *Computers in Human Behavior*, 24(1), 48-65.
17. Liang, T. P., & Huang, J. S. (1998). An empirical study on consumer acceptance on products in electronic markets: A transaction cost model. *Decision Support Systems*, 24(1), 29-43.
18. Lu, Y., & Rastrick, K. (2014). Impacts of website design on the adoption intention of mobile commerce: Gender as a moderator. *New Zealand Journal of Applied Business Research*, 12(2), 51-68.
19. NSO, National Statistical Institute of Thailand (2013). Survey on ICT Usage in Households and by Individuals in 2013. Available at: <http://service.nso.go.th/nso/nsopublish/themes/files/icthh56.pdf>
20. O'Cass, A., & Fenech T. (2003). Web retailing adoption: exploring the nature of internet users Web retailing behavior. *Journal of Retailing and Consumer Services*, 10(2), 81-94.
21. Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the implications of the Internet for consumer marketing. *Journal of Academy of Marketing Science*, 25(4), 329-346.
22. Pihlstrom, M., & Brush, G. J. (2008). Comparing the perceived value of information and entertainment mobile services. *Psychology and Marketing*, 25(8), 732-755.
23. Pura, M. (2005). Linking perceived value and loyalty in location-based mobile services. *Managing Service Quality*, 15(6), 509-538.
24. Roberts, N., & Thatcher, J. B. (2009). Conceptualizing and testing formative constructs: Tutorial and annotated example. *The DATA BASE for Advances in Information Systems*, 40(3), 9-39.
25. Rogers, E. M. (2003). *Diffusion of Innovations*, 5<sup>th</sup> ed. New York, NY: Free Press.
26. Sherman, M. (2014). An introduction to mobile payments: market drivers, applications, and inhibitors. *Proceedings of the 1<sup>st</sup> International Conference on Mobile Software Engineering and Systems*, ACM, 71-74.
27. Sheth, J. N., Newman, B. I., & Gross, B. L. (1991). *Consumption values and market choices, theory and applications*. Cincinnati, OH: South-Western Publishing Co.
28. Turel, O., Serenko, A., & Bontis, N. (2010). User acceptance of hedonic digital artifacts: A theory of consumption values perspective. *Information & Management*, 47(1), 53-59.
29. Vandecasteele, B., & Geuens, M. (2010). Motivated Consumer Innovativeness: Concept, measurement, and validation. *International Journal of Research in Marketing*, 27(4), 308-318.

30. Yang K. (2010). Determinants of US consumer mobile shopping services adoption: implications for designing mobile shopping services. *Journal of Consumer Marketing*, 27(3), 262-270.
31. Yang, K. (2012). Consumer technology traits in determining mobile shopping adoption: an application of the extended theory of planned behavior. *Journal of Retailing and Consumer Services*, 19(5), 484-491.
32. Yi, Y., & Gong, T. (2008). The Electronic Service Quality Model: The Moderating Effect of Customer Self-Efficacy. *Psychology & Marketing*, 25(7), 587-601.
33. Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2-22.