



Contextual perceived value?

Investigating the role of contextual marketing for customer relationship management in a mobile commerce context

ThaeMin Lee

Department of Business Administration, Chungbuk National University, Cheongju, Korea, and

JongKun Jun

Department of International Business, Hankuk University of Foreign Studies, Yongin, Korea

Abstract

Purpose – The purpose of this paper is to propose and validate the mobile commerce (MC) consumers' repurchase intention (RPI) model including technology acceptance model (TAM), customer satisfaction (CS), and contextual perceived value (CPV) of marketing offer as a new MC-specific construct.

Design/methodology/approach – A survey instrument was used to gather data to test the relationships shown in the research model. χ^2 difference test was conducted in order to examine the contribution of CPV of marketing offer in explaining MC consumers' RPI. The hypothesized relationships were tested using the structural equation modeling.

Findings – The results of this study reveal that integrating CPV with CS and TAM in a single model can better explain and predict MC consumers' RPI. CPV has a significant effect on RPI, CS and perceived usefulness.

Research limitations/implications – CPV activated by contextual marketing is the key factor for customer relationship management in MC context.

Originality/value – The primary contribution of this study is to integrate CPV of marketing offer with TAM and CS into a coherent and parsimonious model that jointly predicts RPI.

Keywords Customer satisfaction, Mobile communication systems, Relationship marketing

Paper type Research paper

1. Introduction

Mobile businesses are opening up new marketing and customer relationship management (CRM) opportunities because they can provide two-way interactive communications which are location specific and highly personalized.

Mobile phones have shown to be very personal devices which may provide firms with unrivalled possibilities to build and maintain one-to-one relationships with their customers, combined with a set of unique features such as ubiquity, constant reachability, personalization, and localization (Camponovo *et al.*, 2005; Siau *et al.*, 2003).

In the mobile commerce (MC) environment, it is possible to identify the users and their geographical position by tracking the technical address of the mobile device. In this study, we will employ the term MC for electronic commerce transaction carried out via mobile phones based on Bai *et al.* (2005). Using the information on the users' identity, position, access time, and profiles, mobile service providers can offer the users optimal information or services, which are contextually relevant to them at the point of need.



For example, a mobile service provider may send the information or coupon for blue jeans to a consumer, who enters the department store to purchase jeans. This is an example of “contextual marketing.” Contextual marketing refers to the extent to which e-businesses use the ubiquitous internet to provide customers with relevant information in the right context and in real-time (Kenny and Marshall, 2000).

The mobile medium is well suited to enhance traditional CRM because the contextual marketing via mobile phone enabled by its very personal character and localization may allow the marketer to develop intimate relationships with customers.

Despite the potential of mobile CRM (hereafter referred to as mCRM), only the internet as a channel to manage customer relationships (eCRM) has attracted a lot of attention among academics (Feinberg *et al.*, 2002; Fjermestad and Romano, 2003), whereas understanding of managing customer relationships through mobile medium has gained far less attention (Sinisalo *et al.*, 2006). We attempt to bridge this gap in the literature by proposing and validating the MC-specific CRM model that explain the repurchase intentions (RPIs). We utilize constructs from the literature of technology acceptance model (TAM), customer satisfaction (CS), and MC-specific features as the lens to examine MC consumers’ RPIs.

Many practical and the theoretical models of customer retention have explored CS as a key determinant in customers’ decisions to keep or discontinue a given product or service relationship (Bolton, 1998; Rust and Zahorik, 1993; Zeithaml *et al.*, 1996). Several researches have proposed the integration of satisfaction and TAM in electronic commerce context (Devaraj *et al.*, 2002; Shin, 2004). However, no empirical study to date has investigated the interrelationship among TAM, CS and RPIs in a single mCRM framework.

We propose “contextual perceived value (CPV) of marketing offer” as a new construct to enhance the understanding of MC users’ RPIs. Consumers’ perceived value of MC should increase if mobile marketers can offer the users personalized message which is contextually relevant to them at the point of need. In that sense, we believe that CPV is not only a key driver of CS but also an important determinant of RPIs in MC context. We suggest CPV as a powerful tool for mCRM.

2. Literature review

2.1 mCRM

The key theoretical basis for CRM comes from the relationship marketing (RM) literature (Reinartz *et al.*, 2004). The term RM was initially coined by Berry (1983) who defined it as attracting, maintaining and enhancing customer relationships. According to Sinisalo *et al.* (2005), CRM is a holistic approach aiming at building and maintaining a profit-maximizing portfolio of customer relationships.

As the uppermost purpose of CRM is the ability to communicate with customers on an individual basis, mobile medium represent an appealing additional channel that can complement the existing channels (Camponovo *et al.*, 2005; McManus and Scornavacca, 2005). Since, MC environment has features not available in EC environment, such as mobility (Kalakota and Robinson, 2001), ubiquity, personal identity and localization (Kannan *et al.*, 2001), enabling customers to interact with companies via mobile medium anytime, anywhere.

As mCRM has only recently aroused interest among academics, no formal conceptualization of mCRM had been made before. Sinisalo *et al.* (2006) defined it

“as utilizing mobile medium (i.e. mobile phone, smart phone or PDA) for the purpose of managing customer relationships and activate customers to start dialogue with company via mobile medium.”

Lam and Chan (2003) examined CRM features as implemented on the internet (eCRM) and the mobile channel (mCRM). They proposed a framework to analyze the current eCRM and mCRM practice.

As mobile channel has the advantage of its high reach, low cost and high-retention rates (Clickatell, 2002), many companies seem to be ready for more sophisticated mCRM (Sinisalo *et al.*, 2005).

Although there are a few conceptual papers on mCRM (Camponovo *et al.*, 2005; Sinisalo *et al.*, 2006) empirical research is still very rare.

Several researches have addressed the issue on mobile/SMS marketing. According to Barnes and Scornavacca (2004), mobile marketing allows through effective targeting and tailoring of messages to customers to enhance the customer-business relationship.

Carroll *et al.* (2005) explored consumer's perceptions and attitudes towards mobile marketing via SMS through a sequential, mixed methods investigation. According to their research, four factors were identified and proven as all having a significant impact on mobile marketing acceptance – permission, content, wireless service provider control and the delivery of the message, which guided the development of a revised and empirically tested model of mobile marketing acceptance.

2.2 Technology acceptance model

Davis (1989) and Davis *et al.* (1989) suggested technology acceptance model (TAM) to explain and predict the individual's acceptance. According to TAM, system usage behavior is determined by the intention to use a particular system, which in turn, is determined by the user's beliefs about the system. The TAM further suggests that two beliefs – perceived usefulness and perceived ease of use – are instrumental in explaining the variance in users' intentions. Perceived usefulness is defined as the extent to which a person believes that using a particular system will enhance his or her job performance, while perceived ease of use is defined as the extent to which a person believes that using a particular system will be free of effort (Davis, 1989).

While TAM initially focused on system usage in the workplace (Adams *et al.*, 1992; Gefen and Straub, 1997), recent research has applied it to understand web site use (Lederer *et al.*, 2000; Moon and Kim, 2001) and consumer acceptance of e-commerce (Pavlou, 2003).

Several studies have modified the basic TAM in MC or mobile service context (Koivumaki *et al.*, 2006; Pagani, 2004; Wang *et al.*, 2006; Wu and Wang, 2005). Koivumaki *et al.* (2006) have shown that usefulness, user guidance and support, and user skills are significant factors in explaining the acceptance of mobile services. Wang *et al.* (2006) validated an integrated model for predicting consumer intention to use m-service by adding one trust-related construct (perceived credibility) and two resource-related constructs (“self-efficacy” and “perceived financial resources”) to the TAM's nomological structure and re-examining the relationships between the proposed constructs.

However, none of them have incorporated the MC-specific feature, contextual factors in the model specification. TAM's fundamental constructs do not fully reflect the context-mediated RPIs in MC. Therefore, to increase external validity of TAM, it is necessary to further explore the nature and specific influence of contextual factor.

2.3 Context

The term "Context" has been extensively used in the research of mobile-related technology. Chen and Kotz (2000) defined context in mobile computing as "the set of environmental states and settings that either determines an application's behavior or in which an application event occurs and is interesting to the user." Kim *et al.* (2002) define mobile context as "any personal and environmental information that may influence the person when he/she is using Mobile Internet." Their definition focuses on two aspects of context: personal context (emotion, physical state) and environmental context (location, the number of people nearby the user). Schilit *et al.* (1994) divided context into three categories: computing context (network connectivity, communication costs, etc.), user context (user profile, location, etc.), and physical context (lighting, noise, etc.). Chen and Kotz (2000) added time context (time of day, week, month, and season of the year) as a fourth context category.

Figge (2004) introduces "situation dependency" as a new concept to adapt MC applications according to the spatial, personal, and temporal context in which the user accesses a service. Figge (2004) conceived situation dependency as a three-dimensional space, with user identity (personal profile, background, preferences, etc.), access position, and access time.

2.4 Customer satisfaction and customer retention

The trend in marketing toward building relationships with customers continues to grow, and marketers have become increasingly interested in retaining customers over the long run (Lemon *et al.*, 2002). Many researches suggest that CS is a key determinant of customer retention (Bolton, 1998; Rust and Zahorik, 1993; Zeithaml *et al.*, 1996). According to Reichheld (1996), satisfaction measures have accounted for up to 40 percent of the variance in models of customer retention. Customer retention is regarded as essential factor in CRM (Hoekstra *et al.*, 1999; Reichheld, 1996). Increasing CS and customer retention leads to improved profits, positive word-of-mouth, and lower marketing expenditures (Reichheld, 1996).

CS is a consumer's post-purchase evaluation and affective response to the overall product or service experience (Oliver, 1992). CS is regarded as a necessary precondition for customer loyalty, which is in turn a key driver of profit growth and performance (Heskett *et al.*, 1997; Reichheld, 1993).

2.5 Contextual perceived value of marketing offer

A significant advantage of MC is that it can deliver personalized message to a user on the basis of user profile and location-awareness. For example, the mobile service provider can transmit to a car driver the information about the location of available gas stations; send a traveler well-targeted information about suitable accommodations; or inform an investor about the latest changes in stock prices. This implies that contextual factors are very important in the MC environment. According to Leppäniemi and Karjaluoto (2005), location awareness and personalization enabled by mobile technology can influence positively consumers' willingness to accept mobile advertising. Users who receive personalized and contextually relevant marketing offer will think it is valuable even though he or she has never recognized the value of MC before.

Perceived value is broadly defined as the results or benefits customers receive in relation to total costs (McDougall and Levesque, 2000). According to Zeithaml (1988),

perceived value is a customer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given. On electronic markets, firms can create value for customers in a manner that is different from that which has been achieved in conventional business (Han and Han, 2001). Correspondingly, MC not only extends the benefits of the web, but also allows for unique services and additional benefits when compared to traditional e-commerce applications (Tsalgaidou and Pitoura, 2001). According to Keen and Mackintosh (2001), the demand side of MC is a search for value, and hence there is a need to build an understanding of the elements and special features of wireless electronic channels that are value-adding from the consumer's point of view.

We propose "contextual perceived value of marketing offer" as MC-specific additional benefits to understand consumers' RPIs in MC context. In this study, we define CPV of marketing offer in the MC context as "the degree to which a person believes that receiving context-relevant information or services would enhance his or her purchase performance."

Following Figge (2004), we decompose CPV of marketing offer into three-dimensional constructs: user profile, location and time. By using the location, time and user profile information, a service provider can reach consumers at the point where and when they are ready to do business (Kenny and Marshall, 2000; Leppäniemi and Karjaluoto, 2005). It captures the very moment when somebody's need for merchandise or a service emerges, and promotes goods and services that are best suited to such person's tastes and interests.

3. Research model and hypotheses

Figure 1 shows the proposed model, referred to as the RPIs in MC context. CPV of marketing offer, the extended part of the model, is the construct of interest because it addresses the question of how contextual factors affect the individual's RPIs in MC.

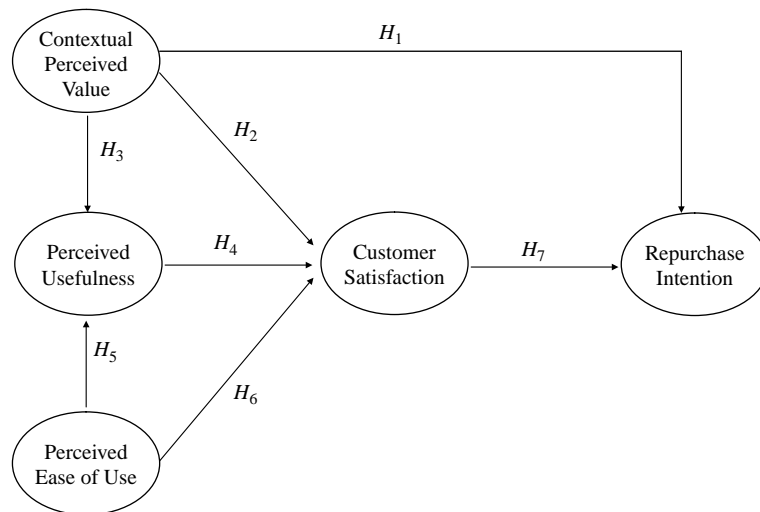


Figure 1.
Research model and hypotheses

3.1 Contextual perceived value of marketing offer

Perceived value was found to be a primary factor influencing purchase intentions (Cronin *et al.*, 1997; Sweeney *et al.*, 1997). In MC environment, the concept of “perceived value” could be thrown into continual flux, depending on the contextual marketing offer. Because marketers can reach consumers at the point of need by using the location, time and user profile information (Kenny and Marshall, 2000; Leppäniemi and Karjaluoto, 2005). This implies that the primary factor influencing MC consumers’ RPI is not constant perceived value but CPV activated by relevant marketing offer. Therefore, the concept of CPV of marketing offer that applies features specific to MC is important in explaining MC consumers’ RPIs.

Users can be provided with optimal information or services that are contextually relevant to them based upon where they are, what they are doing and what they are interested in at the point of need. In other words, CPV of marketing offer can act as point of purchase (POP) promotion. For example, when a consumer enters a NIKE store, he or she can be provided with sale information for NIKE shoes or coupons. The POP is an ideal time to communicate with consumers because this is the time at which many product and brand choice decisions are made. It is apparent that POP materials represent very important determinants of consumers’ product- and brand-choice behaviors (Shimp, 2000).

Cue compatibility is also useful for explaining the relationship between CPV of marketing offer and MC consumers’ RPIs. It means an overlap in memory with favorable brand associations (Keller, 1991). The cue compatibility principle maintains that successful recall of communication effects from ad exposure occurs when there is congruity or a “match” between the type of information stored at encoding and the type of information available as cues at later retrieval (Keller, 1991).

The context-relevant offering by mobile marketers may be regarded as high cue-compatible if a consumer can be provided with a lunch coupon at the point of need, based on his or her tastes. And CPV of marketing offer will be increased by these kinds of context-relevant marketing communication, which leads to MC consumers’ RPIs. Following the previous arguments, we predict that CPV of marketing offer will activate favorable association of MC and thereby, lead to MC consumers’ RPIs. Therefore, we propose the following hypothesis:

H1. Contextual perceived value of marketing offer will have a positive effect on the RPIs.

Perceived value is considered a cognitive-based construct which captures any benefit-sacrifice discrepancy in much the same way disconfirmation does for variations between expectations and perceived performance (Patterson and Spreng, 1997). CS, meanwhile, is defined as an affective evaluative response (Oliver, 1992). Woodruff (1997) argues that perceived value represents customer cognition of the nature of relational exchanges with their suppliers, and satisfaction reflects customers’ overall feeling derived from the perceived value. Behavioral model points out that affect is significantly influenced by cognition (Fishbein and Ajzen, 1975). There is also empirical evidence that perceived value exhibits a significant impact on CS (Anderson and Mittal, 2000; Patterson and Spreng, 1997). We predict that CPV activated by contextual marketing offer will have a positive effect on CS. Therefore, we propose the following hypothesis:

H2. Contextual perceived value of marketing offer will have a positive effect on the CS.

Providing contextual information to customers at the right time is in line with the theory of real-time marketing (McKenna, 1995; Rust and Lemon, 1999). Real-time marketing refers to the extent to which the firm can offer products and services at the customer's location, in real-time, based on the customer's choices and actions (Rust and Lemon, 1999). In the dynamic, turbulent MC market, the value of information depreciates quickly and, thus, its time-sensitivity should be even greater. This means that capability for context-specific and real-time marketing communication may enhance customers' perceived usefulness of MC, leading to CS for using MC. We expect that "context-specific information" such as "special menu of the day" will be more attractive to customers than "established information" such as "regular restaurant menu" in MC environment. Following the previous arguments, we predict that CPV of marketing offer will activate favorable attitude toward MC and thereby, lead to perceived usefulness of MC. Based on these arguments, we propose the following hypothesis:

H3. Contextual perceived value of marketing offer will have a positive effect on the perceived usefulness of MC.

3.2 Perceived usefulness

In the setting of online services, CS can be explained by the conceptual paradigm, TAM (Yang and Peterson, 2004). We predict that CS in MC context can also be explained by perceived usefulness, which is the key construct of TAM. If the usefulness of MC does not outweigh customer losses occasioned by factors such as technical difficulties and learning effort, then customers may simply revert to the traditional channels. This being the case, the perceived usefulness of MC plays an important role in CS. Previous research provides empirical evidence of the significant effect of the perceived usefulness on CS (Adams and Shine, 2003; Devaraj *et al.*, 2002). Thus, the following hypothesis is proposed:

H4. Perceived usefulness of MC will have a positive effect on the CS.

3.3 Perceived ease of use

Previous research has found that perceived ease of use has significant effect on perceived usefulness (Davis, 1989; Davis *et al.*, 1989). This finding has also been validated in internet technology use (Lederer *et al.*, 2000; Gefen and Straub, 2002; Moon and Kim, 2001).

Recent findings suggest that CS in the online environment is significantly higher than that in traditional channels due to the ease of use in acquiring information (Shankar *et al.*, 2000). This implies that perceived ease of use of MC can play a pivotal role in CS. There is some empirical evidence that perceived ease of use has a significant effect on CS (Adams and Shine, 2003; Devaraj *et al.*, 2002). Based on these arguments, we propose the following hypotheses:

H5. Perceived ease of use will have a positive effect on the perceived usefulness of MC.

H6. Perceived ease of use will have a positive effect on the CS.

3.4 Customer satisfaction

Extensive research has shown that CS is a reliable predictor of RPIs (Bitner, 1990; Caruana, 2002; McDougall and Levesque, 2000; Olsen, 2002). This implies that CS is an important determinant of RPIs, which in turn is expected to affect the firm's future profitability. Thus, the following hypothesis is proposed:

H7. Customer satisfaction of MC will have a positive effect on the RPIs.

4. Research methodology

4.1 Sample

The subjects for this study were confined to the mobile users who have experienced MC. Based on Harris *et al.* (2005), we grouped MC experience into three categories, transaction (mobile shopping, ticket purchasing, stock trading), information (news, location/traffic information) and entertainment services (download ring tone, download movie). An interview survey (face-to-face) was conducted in Seoul, Korea.

The sample consisted of 296 respondents including 171 (under)graduate students and 125 business workers in Korea. The male/female ratio of the sample was 53.7 and 46.3 percent, respectively. In the sample, 56.1 percent were in their 20s and 43.9 percent were in their 30s.

4.2 Measure development

Measures of the constructs were developed in several stages. In the first stage, based on the defined constructs, tentative measures were either borrowed or developed from the existing literature. In the second stage, to establish content validity, a list of defined constructs and measures was submitted to a panel of six marketing, e-commerce academicians, who were recognized as authorities on the subject of MC. We requested the panel members to assign each measure to the construct they believed was appropriate and note whether they thought the construct could be represented by any other measures. In the third stage, faculty and doctoral students reviewed a preliminary version of the instrument for precision and clarity. Finally, a pretest was conducted among 20 consumers. During all the stages, the questionnaire was progressively refined, simplified, and shortened. Scale reliabilities and measurement items are provided in the Appendix. All items used seven-point scale (1 = very strongly disagree, 7 = very strongly agree).

4.3 Measurement model results

Following Anderson and Gerbing (1998), we conducted confirmatory factor analysis to establish the reliability and discriminant validity of the multi-item scales.

Although the χ^2 value for this model was significant (181.940 with 109 degrees of freedom (df), $p = 0.00$), this statistic is sensitive to sample size and model complexity; as such, the goodness-of-fit index (GFI), Tucker-Lewis index (TLI), and comparative fit index (CFI) are more appropriate for assessing model fit here (Bagozzi and Yi, 1988; Bearden *et al.*, 1982).

GFI (0.933), AGFI (0.905), TLI (0.975), CFI (0.980), SRMR (0.039) and RMSEA (0.048) indicate satisfactory model fit. Furthermore, all the individual scales exceeded the recommended standards proposed by Bagozzi and Yi (1988), in terms of construct reliability (i.e. greater than 0.60) and average variance extracted (AVE) by the latent construct (greater than 0.50). And all the item's loadings indicated significant *t*-values, suggesting convergent validity was achieved.

The squared correlation between the two constructs is less than all the AVE for each construct (Tables I and II), suggesting discriminant validity was achieved (Fornell and Larcker, 1981). In addition, we checked the confidence interval for each pairwise correlation estimate (Anderson and Gerbing, 1988). As shown in Table II, the confidence interval for each pairwise correlation estimate does not include the value of 1. These results suggest that discriminant validity was achieved.

Measure validation was also examined for internal consistency by computing Cronbach's α coefficient. As shown in the Appendix, Cronbach's α was found to be greater than 0.70, in accordance with Nunnally's (1967) standard.

Construct/items	Unstandardized loading	t-value	Construct reliability	AVE	Cronbach's α
<i>Contextual perceived value</i>			0.907	0.709	0.916
CPV1	0.813 *	16.936			
CPV2	0.764 *	15.628			
CPV3	0.887 *	19.698			
CPV4	0.897 *	20.064			
<i>Perceived usefulness</i>			0.903	0.702	0.902
PU1	0.735 *	14.112			
PU2	0.922 *	21.002			
PU3	0.940 *	21.331			
PU4	0.731 *	14.150			
<i>Perceived ease of use</i>			0.896	0.743	0.894
PE1	0.806 *	16.278			
PE2	0.882 *	18.618			
PE3	0.895 *	19.059			
<i>Customer satisfaction</i>			0.815	0.604	0.803
CS1	0.839 *	17.046			
CS2	0.898 *	19.076			
CS3	0.550 *	9.962			
<i>Repurchase intention</i>			0.861	0.674	0.872
RPI1	0.810 *	16.798			
RPI2	0.848 *	17.838			
RPI3	0.804 *	16.106			

Table I.
Confirmatory factor
analysis results

Note: *Parameter estimates are significant at the 0.001 level

	CPV	PU	PE	CS	RPI
CPV		0.269	0.170	0.210	0.215
PU	0.519 (0.047)		0.307	0.354	0.375
PE	0.412 (0.054)	0.554 (0.045)		0.282	0.338
CS	0.458 (0.052)	0.595 (0.043)	0.531 (0.049)		0.475
RPI	0.464 (0.052)	0.612 (0.042)	0.581 (0.054)	0.689 (0.039)	

Table II.
Correlation matrix

Notes: CPV, contextual perceived value; PU, perceived usefulness; PE, perceived ease of use; CS, customer satisfaction; RPI, repurchase intentions. Construct correlations (and standard errors) appear below the diagonal. Squared correlations appear above the diagonal

5. Results

5.1 Chi-square difference test

χ^2 difference tests were conducted in order to examine the contribution of CPV of marketing offer in explaining MC consumers' RPIs. Results are presented in Table III. The results indicate that the addition of CPV of marketing offer improves the model fit. Thus, MC consumers' RPI is best described by the hypothesized model in which CPV of marketing offer is included.

5.2 Goodness of fit of the overall model

The hypothesized relationships were tested using the technique of structural equation modeling (SEM). Covariance structure analysis (AMOS 4.0) testing the proposed model (Figure 1) resulted in a χ^2/df ratio below 2.0, indicating a good fit between the theoretical model and the data. Other goodness of fit indices is also indicative of a good fit: GFI (0.923), AGFI (0.894), TLI (0.967), CFI (0.973) (Bagozzi and Yi, 1988; Bearden *et al.*, 1982).

5.3 Results of hypotheses tests

The results of the hypotheses test are summarized in Table IV, which shows that all proposed relationships received strong support.

	Restricted model	Proposed model
	Three path (CPV → PU, CPV → CS, CPV → RPI) were fixed zero	Allow all parameters to be free
χ^2	263.489 ($p = 0.00$)	209.483 ($p = 0.00$)
df	114	111
GFI	0.905	0.923
AGFI	0.872	0.894
TLI	0.951	0.967
CFI	0.959	0.973
SRMR	0.107	0.054
RMSEA	0.067	0.055
χ^2 difference test	$\Delta\chi^2 = 54.006, \Delta df = 3, \chi^2/df = 18.002 (p < 0.01)$	

Notes: CPV, Contextual perceived value; PU, perceived usefulness; CS, customer satisfaction; RPI, repurchase intentions

Table III. Chi-square difference test

	Hypothesized path	Coefficient (t -value)	Result
H1	CPV → RPI	0.186** (3.038)	Adopt
H2	CPV → CS	0.164* (2.305)	Adopt
H3	CPV → PU	0.433*** (6.050)	Adopt
H4	PU → CS	0.365*** (5.706)	Adopt
H5	PE → PU	0.477*** (6.902)	Adopt
H6	PE → CS	0.313*** (4.356)	Adopt
H7	CS → RPI	0.579*** (9.626)	Adopt

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. CPV, contextual perceived value; PU, perceived usefulness; CS, customer satisfaction; PE, perceived ease of use; RPI, repurchase intentions

Table IV. Results of hypotheses test

Specifically, we find a positive relationship between CPV of marketing offer and RPIs (coefficient = 0.186, $t = 3.038$, $p < 0.01$), supporting *H1*. CPV of marketing offer also had significant positive relationships with CS (coefficient = 0.164, $t = 2.305$, $p < 0.05$) and perceived usefulness of MC (coefficient = 0.433, $t = 6.050$, $p < 0.001$), bolstering *H2* and *H3*.

As predicted by *H4*, perceived usefulness of MC had a significant and positive relationship with CS (coefficient = 0.365, $t = 5.706$, $p < 0.001$). *H5* and *H6* predicted that perceived ease of use would directly influence perceived usefulness of MC and CS. As predicted both perceived usefulness of MC and CS had a significant relationship with perceived ease of use (perceived usefulness of MC: coefficient = 0.477, $t = 6.902$, $p < 0.001$; CS: coefficient = 0.313, $t = 4.356$, $p < 0.001$). As predicted by *H7*, we found a significant relationship between CS of MC and RPIs (coefficient = 0.579, $t = 9.626$, $p < 0.001$).

6. Discussion and implications

In this paper, we contributed to the CRM literature by empirically validating the effect of MC-specific variable (CPV of marketing offer) on both CS and RPIs in MC context. The results of this study reveal that including the CPV, which is proposed as MC-specific variable, has improved the overall fit of the model. This suggests that integrating CPV with CS and TAM in a single model can better explain and predict MC consumers' RPIs. Consequently, the proposed model can serve as an initial blueprint for understanding the effects of contextual marketing offer on customer retention in mCRM perspective.

6.1 Managerial implications

Our results show that context-based marketing communication at the point of need is a key component in enhancing MC customer retention. Conveying context information could be very interesting for the users. Although contextual marketing has been effective in creating purchases (Luo and Seyedian, 2004), marketers could not fully exploit its advantages because communication channel for doing that was not fully developed. Mobile devices are an excellent medium to deliver contextually valuable messages to users. Average mobile users may not fully understand how much value they can get through MC until they receive a marketing offer relevant to their needs through the mobile device.

A marketing offer through mobile devices could enhance perceived usefulness of MC, CS, and RPIs if it brings context-specific value for the customer. In order to deliver contextual value to customers, marketing communication for mCRM needs to be highly personalized. To make a personalized offer, marketers may need a lot of user information inclusive of user profile (sex, age, personal anniversary, and favorites, etc.) and context information such as location-type, time-based and mode of spending time, etc. The Kontti project is one of leading research in context-aware services.

Marketers need to keep sending situation specific offers to customers to make them perceive MC useful, and be satisfied with MC, but irrelevant offers may annoy with MC, and even destroy customer relationships. Even a relevant offer should be carefully made not to invade privacy. Therefore, minimizing the number irrelevant offers is a must and for that purpose marketers may need a feedback system and adaptation of marketing practices.

Achieving CS is the primary goal for most firms today (Jones and Sasser, 1995), because CS is a necessary precondition for customer loyalty, which is in turn a key

driver of profit growth and performance (Reichheld, 1993). In order to increase CS, marketers may need to design strategies to enhance customer's CPV at the point of need. Marketers can also achieve high CS by increasing perceived usefulness of MC and perceived ease of use. Therefore, usability of MC should be improved. Usable and useful services on phones could be ones that give the user key, summarized information with very few keystrokes or text entry. Also highly adaptive interfaces will be necessary because of limited screen display. MC developers need to be fully aware of the importance of usability issues.

6.2 Limitations and future research

One limitation of the study is that the proposed model did not consider traditional drivers of customer retention by focusing on TAM and MC-specific variable. Future research could explore other related constructs that better predict customer retention of MC, calling for a comprehensive model to explain RPIs in MC context.

Several researches suggest that privacy factor is important in MC acceptance (Milne and Rohm, 2003; Wu and Wang, 2005). According to Milne and Rohm (2003), the benefits of MC must be weighed against the potential for privacy violations. Wu and Wang (2005) also suggest that privacy protection, security, and a risk-free environment are the breakpoints for MC popularity.

The main purpose of this study was to empirically validate significant role of the "CPV of marketing offer in explaining MC consumers" RPIs compared with traditional TAM. So, this study did not consider privacy factor in the model. Although privacy factor is excluded in the model specification, it is likely that most respondents answered the question after considering the privacy issues. Therefore, the significant effect of CPV on CS and RPIs is likely to be underestimated rather than overestimated. We suppose that the effect of CPV on CS and RPIs will increase if the privacy factor is controlled. Future research could address potential clash between context-specific mobile marketing communications and a customer's concerns about privacy and investigate how that might impact the CS and RPIs of MC.

Although all the measures used in the study are modified through in-depth interviews and pretests, further analysis of the items is needed to establish definitive proof of reliability and validity.

In addition, this research applied a cross-sectional research design. Given the cross-sectional design of the study and the inability to perfectly observe actual behavior, the relationship between RPI and actual repurchase behavior needs further research. Future research could take a longitudinal perspective.

Besides, these limitations, several further research directions follow from this study. Subsequent research could address the classification of CPV of marketing offer according to temporal, spatial, and personal components of the construct. And much work remains to be done regarding the relationship between CPV of marketing offer and other potential drivers of customer retention in MC context.

References

- Adams, I. and Shine, J. (2003), "Extending the new technology acceptance model to measure the end user information systems satisfaction in a mandatory environment: a bank's treasury", *Technology Analysis & Strategic Management*, Vol. 15 No. 4, pp. 441-55.

- Adams, D.A., Nelson, R.R. and Todd, P.A. (1992), "Perceived usefulness, ease of use, and usage of information technology: a replication", *MIS Quarterly*, Vol. 16, pp. 227-47.
- Anderson, E.W. and Mittal, V. (2000), "Strengthening the satisfaction-profit chain", *Journal of Service Research*, Vol. 3, pp. 107-20.
- Anderson, J.C. and Gerbing, D.W. (1998), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-23.
- Bagozzi, R. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Bai, L., Chou, D.C., Yen, D.C. and Lin, B. (2005), "Mobile commerce: its market analyses", *International Journal of Mobile Communications*, Vol. 3 No. 1, pp. 66-81.
- Barnes, S.J. and Scornavacca, E. (2004), "Mobile marketing: the role of permission and acceptance", *International Journal of Mobile Communications*, Vol. 2 No. 2, pp. 128-39.
- Bearden, W.O., Sharma, S. and Teel, J.E. (1982), "Sample size effects on chi-square and other statistics used in evaluating causal models", *Journal of Marketing Research*, Vol. 19, pp. 425-30.
- Berry, L.L. (1983), "Relationship marketing", in Berry, L.L., Shostack, G. and Upah, G.D. (Eds), *Services Marketing Conference Proceedings*, American Marketing Association, Chicago, IL.
- Bitner, M.A. (1990), "Evaluating service encounters: the effects of physical surroundings and employee responses", *Journal of Marketing*, Vol. 54, pp. 69-82.
- Bolton, R.N. (1998), "A dynamic model of the duration of the customer's relationship with a continuous service provider: the role of satisfaction", *Marketing Science*, Vol. 17 No. 1, pp. 45-65.
- Camponovo, G., Pigneur, Y., Rangone, A. and Renga, F. (2005), "Mobile customer relationship management: an explorative investigation of the Italian consumer market", *Proceedings of the 4th International Conference on Mobile Business (ICMB 2005)*, Sydney, IEEE Computer Society, Los Alamitos, CA, pp. 42-8.
- Carroll, A., Barnes, S. and Scornavacca, E. (2005), "Consumer perceptions and attitudes towards SMS mobile marketing in New Zealand", *Proceedings of the 4th International Conference on Mobile Business (ICMB 2005)*, Sydney, IEEE Computer Society, Los Alamitos, CA, pp. 434-40.
- Caruana, A. (2002), "Service loyalty: the effects of service quality and the mediating role of customer satisfaction", *European Journal of Marketing*, Vol. 36 Nos 7/8, pp. 811-28.
- Chen, G. and Kotz, D. (2000), "A survey of context-aware mobile computing research", Dartmouth Computer Science Technical Report, TR2000-381.
- Clickatell (2002), "SMS marketing guide", Research Report, available at: www.clickatell.com
- Cronin, J., Brady, M., Brand, R., Hightower, R. and Shemwell, D. (1997), "A cross-sectional test of the effect and conceptualization of service value", *Journal of Services Marketing*, Vol. 11 No. 6, pp. 375-91.
- Davis, F.D. (1989), "Perceived usefulness, perceived ease of use and user acceptance of information technology", *MIS Quarterly*, September, pp. 319-40.
- Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User acceptance of computer technology: a comparison of two theoretical models", *Management Science*, Vol. 35 No. 8, pp. 982-1003.
- Devaraj, S., Fan, M. and Kohli, R. (2002), "Antecedents of B2C channel satisfaction and preference: validating e-Commerce metrics", *Information Systems Research*, Vol. 13 No. 3, pp. 316-33.

- Feinberg, R.A., Kadam, R., Hokama, L. and Kim, I. (2002), "The state of electronic customer relationship management in retailing", *International Journal of Retail & Distribution Management*, Vol. 30 No. 10, pp. 470-81.
- Figge, S. (2004), "Situation-dependent services-a challenge for mobile network operators", *Journal of Business Research*, Vol. 57, pp. 1416-22.
- Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.
- Fjermestad, J. and Romano, N.C. (2003), "Electronic customer relationship management. Revisiting the general principles of usability and resistance – an integrative implementation framework", *Business Process Management Journal*, Vol. 9 No. 5, pp. 572-91.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Gefen, D. and Straub, D.W. (1997), "Gender differences in the perception and use of e-mail: an extension to the technology acceptance model", *MIS Quarterly*, Vol. 21 No. 4, pp. 389-400.
- Gefen, D. and Straub, D.W. (2002), "Managing user trust in e-services", *e-Service Journal*, Vol. 2 No. 1.
- Han, J. and Han, D. (2001), "A framework for analyzing customer value of internet business", *Journal of Information Technology Theory and Application*, Vol. 3 No. 5, pp. 25-38.
- Harris, P., Rettie, R. and Kwan, C.C. (2005), "Adoption and usage of M-commerce: a cross-cultural comparison of Hong Kong and the United Kingdom", *Journal of Electronic Commerce Research*, Vol. 6 No. 3, pp. 210-24.
- Heskett, J., Sasser, E. and Schlesinger, L. (1997), *The Service Profit Chain: How Leading Companies Link Profit and Growth to Loyalty, Satisfaction and Value*, The Free Press, New York, NY.
- Hoekstra, J.C., Leeflang, P.S.H. and Wittink, D.R. (1999), "The customer concept: the basis for a new marketing paradigm", *Journal of Market-Focused Management*, Vol. 4 No. 1, pp. 43-76.
- Jones, T.O. and Sasser, W.F. Jr (1995), "Why satisfied customers defect", *Harvard Business Review*, Vol. 73, pp. 88-99.
- Kalakota, R. and Robinson, M. (2001), *M-Business: The Race to Mobility*, McGraw-Hill, New York, NY.
- Kannan, P.K., Chang, A.-M. and Whinston, A.B. (2001), "Wireless commerce: marketing issues and possibilities", *Proceedings of the 34th Hawaii International Conference System Science*, IEEE Computer Society Press, Los Alamitos, CA.
- Keen, P. and Mackintosh, R. (2001), *The Freedom Economy: Gaining the M-commerce Edge in the Era of the Wireless Internet*, Osborne, Berkeley, CA.
- Keller, K.L. (1991), "Cue compatibility and framing in advertising", *Journal of Marketing Research*, Vol. 28, pp. 42-57.
- Kenny, D. and Marshall, J.E. (2000), "Contextual marketing", *Harvard Business Review*, Vol. 78 No. 6, pp. 119-25.
- Kim, H., Kim, J., Lee, Y., Chae, M. and Choi, Y. (2002), "An empirical study of the use contexts and usability problems in mobile internet", *Proceedings of the 35th Hawaii International Conference on System Sciences*.
- Koivumaki, T., Ristola, A. and Kesti, M. (2006), "Predicting consumer acceptance in mobile services: empirical evidence from an experimental end user environment", *International Journal of Mobile Communications*, Vol. 4 No. 4, pp. 418-35.
- Lam, J. and Chan, S. (2003), *Exploring CRM Implementation on the Internet and Mobile Channels*, DePaul University, School of Computer Science, Telecommunication and Information

Systems, Chicago, IL, available at: <http://facweb.cti.depaul.edu/ctiphd/ctirs03/submissions/papers/lam-final.doc>

- Lederer, A.L., Maupin, D.J., Sena, M.P. and Zhuang, Y. (2000), "The technology acceptance model and the world wide web", *Decision Support Systems*, Vol. 29, pp. 269-82.
- Lemon, K.N., White, T.B. and Winer, R.S. (2002), "Dynamic customer relationship management: incorporating future considerations into the service retention decision", *Journal of Marketing*, Vol. 66, pp. 1-14.
- Leppäniemi, M. and Karjaluoto, H. (2005), "Factors influencing consumers' willingness to accept mobile advertising: a conceptual model", *International Journal of Mobile Communications*, Vol. 3 No. 3, pp. 197-213.
- Luo, X. and Seyedian, M. (2004), "Contextual marketing and customer-orientation strategy for e-commerce: an empirical analysis", *International Journal of Electronic Commerce*, Vol. 8 No. 2, pp. 95-118.
- McDougall, G.H.G. and Levesque, T. (2000), "Customer satisfaction with services: putting perceived value into the equation", *Journal of Services Marketing*, Vol. 14 No. 5, pp. 392-419.
- McKenna, R. (1995), "Real-time marketing", *Harvard Business Review*, Vol. 73 No. 4, pp. 87-95.
- McManus, P. and Scornavacca, E. (2005), "Mobile marketing: killer application or new hype?", *Proceedings of the 4th International Conference on Mobile Business (ICMB 2005)*, Sydney, pp. 294-300.
- Milne, G.R. and Rohm, A.J. (2003), "The 411 on mobile privacy", *Marketing Management*, Vol. 12 No. 4, pp. 40-5.
- Moon, J. and Kim, Y. (2001), "Extending the TAM for a world-wide-web context", *Information & Management*, Vol. 38, pp. 217-30.
- Mort, G.S. and Drennan, J. (2002), "Mobile digital technology: emerging issues for marketing", *Journal of Database Marketing*, Vol. 10 No. 1, pp. 9-23.
- Nunnally, J.C. (1967), *Psychometric Theory*, McGraw-Hill, New York, NY.
- Oliver, R.L. (1992), "An investigation of the attribute basis of emotion and related affects in consumption: suggestions for a stage-specific satisfaction framework", in Sherry, J. and Sternthal, B. (Eds), *Advances in Consumer Research*, Vol. 19, Associations for Consumer Research, Provo, UT, pp. 237-44.
- Olsen, S. (2002), "Comparative evaluation and the relationship between quality, satisfaction, and repurchase loyalty", *Journal of the Academy of Marketing Science*, Vol. 30 No. 3, pp. 240-9.
- Pagani, M. (2004), "Determinants of adoption of third generation mobile multimedia services", *Journal of Interactive Marketing*, Vol. 18 No. 3, pp. 46-59.
- Patterson, P.G. and Spreng, R.A. (1997), "Modelling the relationship between perceived value, satisfaction and repurchase intentions in a business-to-business, services context: an empirical examination", *International Journal of Service Industry Management*, Vol. 8 No. 5, pp. 414-34.
- Pavlou, P.A. (2003), "Consumer acceptance of electronic commerce: integrating trust and risk with the technology acceptance model", *International Journal of Electronic Commerce*, Vol. 7 No. 3, pp. 101-34.
- Reichheld, F. (1993), "Loyalty-based management", *Harvard Business Review*, March-April, pp. 64-73.
- Reichheld, F. (1996), *Loyalty Effect: The Hidden Force Behind Growth, Profits and Lasting Value*, Harvard Business School Press, Cambridge, MA.

- Reinartz, W., Krafft, M. and Hoyer, W.D. (2004), "The customer relationship management process: its measurement and impact on performance", *Journal of Marketing Research*, Vol. 41 No. 3, pp. 293-326.
- Rust, R. and Lemon, K. (1999), "E-service and the customer", *International Journal of Electronic Commerce*, Vol. 5 No. 3, pp. 85-101.
- Rust, R. and Zahorik, A. (1993), "Customer satisfaction, customer retention, and market share", *Journal of Retailing*, Vol. 69 No. 2, pp. 193-215.
- Schilit, B., Adams, N. and Want, R. (1994), "Context-aware computing applications", *Proceedings of IEEE Workshop on Mobile Computing Systems and Applications, Santa Cruz, CA*, pp. 85-90.
- Shankar, V., Smith, A. and Rangaswamy, A. (2000), "Customer satisfaction and loyalty in online and offline environments", Working Paper 02-2000, e-Business Research Center, Penn State University, State College, PA.
- Shimp, T.A. (2000), *Advertising Promotion*, Dryden Press, London.
- Shin, H-P. (2004), "An empirical study on predicting user acceptance of e-shopping on the web", *Information & Management*, Vol. 41, pp. 351-68.
- Siau, K., Lim, E-P. and Shen, Z. (2003), "Mobile commerce: current states and future trends", in Lim, E-P. and Siau, K. (Eds), *Advances in Mobile Commerce Technologies*, Idea Group Pub, Hershey, PA, pp. 1-18.
- Sinisalo, J., Salo, J., Karjaluo, H. and Leppäniemi, M. (2006), "Managing customer relationships through mobile medium – underlying issues and opportunities", *Proceedings of the 39th Hawaii International Conference on System Sciences*, pp. 1-10.
- Sinisalo, J., Salo, J., Leppäniemi, M. and Karjaluo, H. (2005), "Initiation stage of a mobile customer relationship management", *The E-Business Review*, Vol. 5, pp. 205-9.
- Swneeny, J., Soutar, G. and Johnson, L. (1997), "Retail service quality and perceived value: a comparison of two models", *Journal of Retailing and Consumer Services*, Vol. 4 No. 1, pp. 39-48.
- Tsalgatidou, A. and Pitoura, E. (2001), "Business models and transactions in mobile electronic commerce: requirements and properties", *Journal of Computer Networks*, Vol. 37 No. 2, pp. 221-36.
- Wang, Y., Lin, H. and Luarn, P. (2006), "Predicting consumer intention to use mobile service", *Information Systems Journal*, Vol. 16 No. 2, pp. 157-79.
- Woodruff, R.B. (1997), "Customer value: the next source of competitive advantage", *Journal of the Academy of Marketing Science*, Vol. 25, pp. 139-53.
- Wu, J-H. and Wang, S-C. (2005), "What drives mobile commerce? An empirical evaluation of the revised technology acceptance model", *Information & Management*, Vol. 42 No. 5, pp. 719-29.
- Yang, Z. and Peterson, R.T. (2004), "Customer perceived value, satisfaction, and loyalty: the role of switching costs", *Psychology & Marketing*, Vol. 21 No. 10, pp. 799-822.
- Yi, Y. and La, S. (2004), "What influences the relationship between customer satisfaction and repurchase intention? Investigating the effects of adjusted expectations and customer loyalty", *Psychology & Marketing*, Vol. 21 No. 5, pp. 351-73.
- Zeithaml, V.A. (1988), "Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence", *Journal of Marketing*, Vol. 52 No. 3, pp. 2-22.
- Zeithaml, V.A., Berry, L.L. and Parasuraman, A. (1996), "The behavioral consequences of service quality", *Journal of Marketing*, Vol. 60, pp. 31-46.

PE (adapted form Davis, 1989; Davis <i>et al.</i> , 1989; Moon and Kim, 2001; Pavlou, 2003) ($\alpha = 0.89$)	<ol style="list-style-type: none"> (1) I think using MC is easy (2) I find it clear and understandable to learn how to use MC (3) It is easy for me to become skillful at using MC
PU (adapted form Davis, 1989; Davis <i>et al.</i> , 1989; Pavlou, 2003) ($\alpha = 0.90$)	<ol style="list-style-type: none"> (1) Overall, I find using MC is useful (2) I think using MC is valuable to me (3) Using MC would improve my performance on the purchase (4) Using MC in purchase decision would enable me to accomplish tasks more effectively
CS (adapted from Devaraj <i>et al.</i> , 2002) ($\alpha = 0.80$)	<ol style="list-style-type: none"> (1) The MC experience met my needs (2) It was possible for me to buy the product of my choice easily (3) Overall, I was satisfied with the MC experience
CPV of marketing offer (developed for this study based on Mort and Drennan, 2002; Kenny and Marshall, 2000; Figge, 2004) ($\alpha = 0.92$)	<ol style="list-style-type: none"> (1) Offering timely packets of information (e.g. restaurant coupon for lunch) is valuable to me (2) Providing me with packets of information I am interested in (e.g. news or NASDAQ information) is useful to me (3) Offering location-specific packets of information to me (e.g. sale information for coats when I enter the department store) would improve my performance on the purchase (4) Offering optimal information or a service that is contextually relevant to me, based upon where I am and what I am interested in, would enable me to accomplish a purchase more effectively
RPI (adapted form Yi and La, 2004; Pavlou, 2003) ($\alpha = 0.87$)	<ol style="list-style-type: none"> (1) I have intention to repurchase product or service via MC (2) It is likely that I will use MC for repurchase (3) I expect my use of MC for repurchase to continue in the future

Table A1.
Scale reliabilities and measurement items

Notes: CPV, contextual perceived value; PU, perceived usefulness; PE, perceived ease of use; CS, customer satisfaction; RPI, repurchase intentions

Corresponding author

ThaeMin Lee can be contacted at: timin98@naver.com

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